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Research Topic

Electromagnetic Fields

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Overview of Terms

Associated with Your Search Topic

150 Relevant Results for
Diseases

Disease/Symptom	Cumulative Knowledge	Article Count
Oxidative Stress	432	164
DNA damage	281	81
Cognitive Decline/Dysfunction	251	38
Brain Cancer	242	28
Sperm Quality: Low	240	33
Infertility: Male	217	44
Radiation Induced Illness	185	50
Headache	183	20
Glioma	149	16
Sleep Disorders	142	15
Cancers	140	34
Fatigue	132	14
Lipid Peroxidation	106	43
Leukemia	103	12
Acoustic Neuroma	102	10
Memory Disorders	93	17
Salivary Gland Diseases	92	9
Infertility	87	19
Breast Cancer	81	8
Cancers: All	78	11
Hearing Disorders	74	9
Leukemia: Childhood	72	7
Mobile Phone-Induced Oxidative Stress	61	16
Leukemias	57	7

Amyotrophic Lateral Sclerosis	55	4
Sperm Count: Low	46	10
Glioblastoma	45	5
Tinnitus	41	5
Meningioma	40	4
Electromagnetic Radiation	39	9
Psychiatric Disorders	31	4
Acute Myeloid Leukemia	30	3
Dizziness	30	3
Dyslipidemias	30	3
Headaches	30	3
Hypersalivation	30	3
Infants: Low Birth Weight	30	3
Diabetes Mellitus: Type 2	29	7
Birth Defects	26	5
Mitochondrial Dysfunction	26	7
Infertility: Female	25	9
Brain: Oxidative Stress	24	12
Autoimmune Diseases	23	6
Depression	23	4
Hypertension	23	4
Epilepsy	22	3
Anxiety	20	2
Eye Abnormalities	20	2
Neuroblastoma	20	4
Non-Hodgkin Lymphoma	20	2
Vision Disorders	20	2
Hypothyroidism	18	5

Anxiety Disorders	16	4
Inflammation	16	3
Astrocytoma	15	2
Learning disorders	15	6
Neurodegenerative Diseases	15	9
Aging	14	3
Auditory Diseases	14	3
Lymphoma	14	3
Prenatal Radiation Exposure	14	3
Brain: Microglial Activation	13	5
Cardiovascular Diseases	12	2
Child Behavior Disorders	12	2
Eye Damage	12	3
Insomnia	12	2
Electrosensitivity	11	2
Mast Cell: Over-Active	11	2
Abortion: Spontaneous	10	1
Acute lymphoblastic leukemia (ALL)	10	1
Astrocytoma: Grade IV	10	1
Atopic Dermatitis	10	1
Atopic Disease	10	1
Bone Diseases	10	1
Cancer	10	1
Cancer: Childhood	10	1
Cancers: Radiation-Induced	10	1
Chronic Myeloid Leukemia	10	1
Depression	10	1
Developmental Disorder: Children	10	1

Eczema	10	1
Epstein-Barr Virus Infections	10	2
Glioblastoma Multiforme	10	1
Headache: Migraine	10	1
Hearing Loss	10	1
Heart Rate Variability: Increased	10	1
Kidney Damage	10	5
Lymphoma: Follicular	10	1
Lymphoma: Non-Hodgkin	10	1
Melanoma	10	1
Melanoma: Uveal	10	1
Migraines	10	1
Nonlymphocytic Leukemia	10	1
Pancytopenia	10	1
Perinatal Mortality	10	1
Pregnancy Complications	10	1
Schwannoma: Vestibular	10	1
Skin Cancer	10	1
Speech Disorders	10	1
Sympathetic Nervous System: Over-Activity	10	1
Thyroid Cancer	10	1
Thyroid Diseases	10	1
Thyroid Dysfunction	10	1
Endothelial Dysfunction	7	2
Autism Spectrum Disorders	5	4
Blood Sugar Problems	5	1
Lipopolysaccharide-Induced Toxicity	5	1
Neurologic Disorders	5	2

Alzheimer's Disease	4	3
Brain Damage	4	2
Cell Phone Induced Disease	4	2
Circadian Dysregulation	4	3
Emotional Disorders	4	2
Seizures	4	2
Diabetes Mellitus: Type 1	3	1
Adiponectin: Low Levels	2	1
Aluminum Toxicity	2	1
Brain Inflammation	2	1
Chronic Pain	2	1
GGT	2	1
Infant Neurological Development	2	1
Inflammation: Brain	2	1
Insulin Resistance	2	1
Interstitial Cystitis	2	1
Liver Damage	2	1
Mercury Poisoning	2	2
Miscarriage	2	1
Myocardial Ischemia	2	1
Ocular Inflammation	2	1
Ovarian Diseases	2	1
Prenatal Nutrition: Health of the Offspring	2	1
Psychological Distress	2	1
Puberty: Delayed	2	1
Puberty: Precocious	2	1
Schwannoma	2	1
Testicular Diseases	2	1

Attention Deficit Disorder	1	1
Attention Deficit Hyperactivity Disorder	1	1
Autism	1	1
Celiac Disease	1	1
Cell-Phone and Computer Screen Radiotoxicity	1	1
Central Nervous System Diseases	1	1
Chemotherapy-Induced Toxicity: Bleomycin	1	1
Depressive Syndrome	1	1
Iron Deficiency/Malabsorption	1	1
Metabolic Diseases	1	1
Motor Neuron Disease	1	1
Multiple Chemical Sensitivity	1	1
Nickel Poisoning	1	1
Parkinson's Disease	1	1

54 Relevant Results for Adverse Pharmacological Actions

Adverse Pharmacological Action Name	Cumulative Knowledge	Article Count
Neurotoxic	612	123
Carcinogenic (suspected)	430	65
Oxidant	393	155
Genotoxic	291	81
Cytotoxic	164	57
Apoptotic	142	50
Cardiotoxic	81	12
Melatonin Interference	65	21
Malondialdehyde (MDA) Up-Regulation	56	21
Endocrine Disruptor: Thyroid	54	11
Immunotoxic	46	13

Tumorigenic	46	7
Endocrine Disruptor	37	11
Glutathione Down-Regulation	37	13
Inflammatory	30	13
Ototoxic	25	5
Radiotoxic	25	5
Excitotoxic	22	3
Superoxide Dismutase Downregulation	22	7
Proliferative	21	5
Immunoreactive	20	5
Endocrine Disruptor: Testes	16	4
Neurotransmitter Interference	16	4
Hepatotoxic	15	8
Abortive	14	3
Blood Brain Barrier Injury	14	6
Carcinogenic	14	4
Hematoxic	11	4
Mast cell degranulation stimulator	11	2
Dyslipidemic	10	1
Hypertensive	10	1
Renotoxic	8	4
Necrotic	6	3
Nephrotoxic	6	3
Arthritic	5	1
Chemoresistance upregulation	5	1
Cycloogenase-2 enzyme upregulation	5	1
Interleukin-1 up-regulation	5	1
Interleukin-6 up-regulation	5	1

MCP-1 (CCL2) up-regulation	5	1
Prostaglandin E2 up-regulation	5	1
Tumor necrosis factorα (TNFα) up-regulation	5	1
Anti-Androgenic	4	2
Anxiogenic	4	2
Phosphorylated synapsin I (Ser-553) Downregulation	4	2
Voltage-Gated Calcium Channel Activation	4	3
Amyloid-Beta Upregulation	3	2
Hypoglycemic	2	1
Hypoxia	2	1
Serotonin Down-Regulation	2	1
Thyroid Suppressive	2	1
Carcinogen	1	1
Cell Cycle Inhibitor	1	1
Mutagenic	1	1

15 Relevant Results for Problematic Actions

Problematic Action Name	Cumulative Knowledge	Article Count
Electromagnetic Radiation	4333	886
Mobile Phone Radiation	1910	305
Microwave Radiation	1532	214
Wi-Fi Radiation	224	47
Electromagnetic Radiation: 1.8 GHz	154	44
Electromagnetic Radiation: 2.4 GHz	134	51
Laptop Computer Use	122	19
5G Millimeter Wave Radiation	114	29
Electromagnetic Radiation: 6-24 GHz (5G)	52	15
Microwave Cooking	36	5

Electromagnetic Radiation: 60 GHZ	16	5
Radation Exposure: Low-Dose	3	2
Low Dose Ionizing Radiation	2	2
X-ray Mammography	2	1
Cardiac Stress Test: Nuclear (Technetium-99m)	1	1

26 Relevant Results for Pharmacological Actions

Pharmacological Action Name	Cumulative Knowledge	Article Count
Antioxidants	75	32
Radioprotective	70	21
Antiproliferative	37	8
Apoptotic	33	9
Malondialdehyde Down-regulation	30	16
Antioxidant	27	13
Superoxide Dismutase Up-regulation	24	11
Anti-Apoptotic	15	7
Heat Shock Protein Inducer	11	3
Anti-Inflammatory Agents	10	1
Cytoprotective	9	3
Genoprotective	9	3
Neuroprotective Agents	8	5
Enzyme Inhibitors	7	2
Antineoplastic Agents	5	1
Calcium Channel Blockers	4	2
Cardioprotective	4	2
Adenosine deaminase inhibitor	2	1
Chemoprotective Agents	2	1
Cyclooxygenase 2 Inhibitors	2	1

DNA Repair Up-regulation	2	1
Glutathione Peroxidase 1 (GPx1) Up-Regulation	2	1
Hypoglycemic Agents	2	1
Interleukin-1 beta downregulation	2	1
Nitric Oxide Inhibitor	2	1
Bcl-2 protein down-regulation	1	1

39 Relevant Results for Keywords

Keyword Name	Cumulative Knowledge	Article Count
RF-EMF and Cancers	444	50
Cellular Phones and Cancers	272	28
Pregnancy And Fetal Growth	91	25
Risk Factors	91	13
Pregnancy	89	23
Brain Function	58	16
Increased Risk	35	4
Risk Reduction	20	2
Children	12	2
Circadian Rhythm	12	3
Plant Extracts	11	4
Adolescent Development	10	1
Body Mass Index (BMI)	10	1
Bone Density	10	1
Environmental Factors	10	1
Estrogen Metabolism	10	1
Gene Expression	10	1
Melatonin Production	10	1
Prenatal Epigenetic Programming	10	1

Socioeconomic Status	10	1
Mitochondria	9	3
Bone Quality	5	1
Epigenetic Modification	5	1
Blood Brain Barrier	3	2
Proanthocyanidins	3	2
Anti-Obesity Agents	2	1
Autophagy Inhibitors	2	1
Chinese Herbs	2	1
Chinese Traditional Medicine	2	1
MicroRNA	2	1
Phytotherapy	2	1
Synergistic Toxicity	2	1
Traditional Chinese Medicine	2	1
Undefined	2	1
Autophagy	1	1
Hydro Lines	1	1
Large Scale Epidemiology	1	1
Proximity	1	1
Saccharomyces Cerevisiae	1	1

28 Relevant Results for Substances

Substance Name	Cumulative Knowledge	Article Count
Melatonin	66	22
Zinc	22	3
Selenium	21	10
Vitamin E	14	7

Green Tea	12	2
Vitamin C	11	6
Polyphenols	10	1
Resveratrol	10	1
NAC (N-acetyl-L-cysteine)	6	2
Testosterone	6	3
Ginkgo biloba	5	1
Lotus	5	3
Carnitine	4	2
Garlic	4	2
Glutathione	4	2
Omega-3 Fatty Acids	4	2
Caffeic acid phenethyl ester	2	1
Luteolin	2	1
Mung Bean	2	1
Myrtle	2	1
Olive leaf extract	2	1
Proanthocyanidins	2	1
Reishi Mushroom	2	1
Rosemaric Acid	2	1
Vitamin A	2	1
Water: Deep Sea	2	1
Phosphatidylcholine	1	1
Thymoquinone	1	1

13 Relevant Results for Problem Substances

Problem Substance Name	Cumulative Knowledge	Article Count
Cell Phone Exposure	1354	218

Pesticides	32	4
Laptop computers	30	3
Benzene	20	2
Agricultural Chemicals	10	1
Herbicides	10	1
Lead	10	1
Persistent organic pollutants (POPs)	10	1
Insulin	9	3
Dental Amalgams	8	4
Gadolinium	5	1
Mercury	5	1
Aluminum	4	2

1 Relevant Result for Therapeutic Actions

Therapeutic Action Name	Cumulative Knowledge	Article Count
Grounding: Contact with the Earth	10	1

View the Evidence.
994 Research Articles in Total.

Category : Diseases

Abortion: Spontaneous (AC 1) (CK 10)

Mobile phone use during pregnancy may be related to spontaneous abortion.

Pubmed Data : J Environ Health Sci Eng. 2015 ;13:34. Epub 2015 Apr 21. PMID: 25937931

Article Published Date : Jan 01, 2015

Authors : Fatemeh Shamsi Mahmoudabadi, Saeideh Ziaei, Mohammad Firoozabadi, Anoshirvan Kazemnejad

Study Type : Human Study
Additional Links
Diseases : Abortion: Spontaneous : CK(214) : AC(30) , Pregnancy Complications : CK(193) : AC(24)
Additional Keywords : Pregnancy Complications : CK(193) : AC(24) , Pregnancy Complications : CK(193) : AC(24), Pregnancy Complications : CK(193) : AC(24) , Pregnancy Complications : CK(193) : AC(24), Pregnancy Complications : CK(193) : AC(24) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3)

Acoustic Neuroma (AC 10) (CK 102)

A significantly increased risk for acoustic neuroma was identified for mobile phone use for more than 20 min/day on average that cannot be solely explained by recall bias.

Pubmed Data : Bioelectromagnetics. 2011 Feb ;32(2):85-93. Epub 2010 Oct 28. PMID: 21225885

Article Published Date : Feb 01, 2011

Authors : Yasuto Sato, Suminori Akiba, Osami Kubo, Naohito Yamaguchi

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4)
Additional Keywords : RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

According to the Hill criteria, these authors argue that radiofrequency electromagnetic fields should be

considered to cause glioma and acoustic neuroma.

Pubmed Data : Rev Environ Health. 2013 ;28(2-3):97-106. PMID: 24192496

Article Published Date : Jan 01, 2013

Authors : Lennart Hardell, Michael Carlberg

Study Type : Review
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

In patients of this study who used cellular telephones, the tumor occurred more often on the contralateral than ipsilateral side of the head. Further efforts should focus on potentially longer induction periods.

Pubmed Data : Neurology. 2002 Apr 23 ;58(8):1304-6. PMID: 11971109

Article Published Date : Apr 23, 2002

Authors : J E Muscat, M G Malkin, R E Shore, S Thompson, A I Neugut, S D Stellman, J Bruce

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

In this study, a significantly increased risk of acoustic neuroma was found with the use of analogue phones.

Pubmed Data : Int J Oncol. 2006 Feb ;28(2):509-18. PMID: 16391807

Article Published Date : Feb 01, 2006

Authors : Lennart Hardell, Michael Carlberg, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4)
Additional Keywords : Acoustic Neuroma : CK(50) : AC(4) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

The results indicate that using a cell phone for 10 years or more approximately doubles the risk of being diagnosed with a brain tumor on the same side of the head as that preferred for cell phone use.

Pubmed Data : Surg Neurol. 2009 Sep ;72(3):205-14; discussion 214-5. Epub 2009 Mar 27. PMID: 19328536

Article Published Date : Sep 01, 2009

Authors : Vini G Khurana, Charles Teo, Michael Kundi, Lennart Hardell, Michael Carlberg

Study Type : Human Study

Additional Links

Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)

Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

There is an an almost doubling of the risk of head tumours induced by long-term mobile phone use or latency.

Pubmed Data : Environ Health. 2011 Jun 17;10(1):59. Epub 2011 Jun 17. PMID: 21679472

Article Published Date : Jun 17, 2011

Authors : Angelo G Levis, Nadia Minicuci, Paolo Ricci, Valerio Gennaro, Spiridione Garbisa

Study Type : Meta Analysis

Additional Links

Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Salivary Gland Diseases : CK(36) : AC(7)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

This meta-analysis gave a consistent pattern of an association between mobile phone use and ipsilateral glioma and acoustic neuroma with a latency period greater than or equal to 10 years.

Pubmed Data : Int J Oncol. 2008 May ;32(5):1097-103. PMID: 18425337

Article Published Date : May 01, 2008

Authors : Lennart Hardell, Michael Carlberg, Fredrik Söderqvist, Kjell Hansson Mild

Study Type : Meta Analysis
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This review yielded a pattern of an increased risk for glioma and acoustic neuroma after more than 10 years mobile phone use. The authors conclude that current standard for exposure to microwaves during mobile phone use is not safe for long-term exposure.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):113-22. Epub 2009 Mar 5. PMID: 19268551

Article Published Date : Aug 01, 2009

Authors : Lennart Hardell, Michael Carlberg, Kjell Hansson Mild

Study Type : Review
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study confirmed previous results demonstrating an association between mobile and cordless phone use and acoustic neuroma.

Pubmed Data : Int J Oncol. 2013 Oct ;43(4):1036-44. Epub 2013 Jul 22. PMID: 23877578

Article Published Date : Oct 01, 2013

Authors : Lennart Hardell, Michael Carlberg, Fredrik Söderqvist, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4)
Additional Keywords : Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4), Acoustic Neuroma : CK(50) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

This study found a 3.5-fold increased risk of acoustic neuroma in analog phone users.

Pubmed Data : Eur J Cancer Prev. 2002 Aug ;11(4):377-86. PMID: 12195165

Article Published Date : Aug 01, 2002

Authors : L Hardell, A Hallquist, K Hansson Mild, M Carlberg, A Påhlson, A Lilja

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Acute Myeloid Leukemia (AC 3) (CK 30)

Myeloid leukemia was associated with benzene, a nonspecific group of solvents, occupational pesticides, and working with or near powerlines.

Pubmed Data : Ann Hematol. 2009 Nov ;88(11):1079-88. Epub 2009 Mar 18. PMID: 19294385

Article Published Date : Nov 01, 2009

Authors : David W Kaufman, Theresa E Anderson, Surapol Issaragrisil

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Chronic Myeloid Leukemia : CK(31) : AC(16) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Problem Substances : Benzene : CK(142) : AC(24) , Pesticides : CK(827) : AC(95)

Occupational electromagnetic field exposure in electrical workers may increase the risk of leukemia.

Pubmed Data : Rev Epidemiol Sante Publique. 1992 ;40 Suppl 1:S55-62. PMID: 1626106

Article Published Date : Jan 01, 1992

Authors : G Thériault

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Leukemias : CK(479) : AC(215)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This large cohort study indicates an increased risk of acute myeloid leukemia and follicular lymphoma among men with extremely-low frequency electromagnetic field exposure.

Pubmed Data : Cancer Causes Control. 2014 Feb ;25(2):203-14. Epub 2013 Nov 16. PMID: 24241907

Article Published Date : Feb 01, 2014

Authors : Tom Koeman, Piet A van den Brandt, Pauline Slottje, Leo J Schouten, R Alexandra Goldbohm, Hans Kromhout, Roel Vermeulen

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Lymphoma: Follicular : CK(10) : AC(1)
Additional Keywords : Lymphoma: Follicular : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Acute lymphoblastic leukemia (ALL) (AC 1) (CK 10)

This case control study found that pre and post natal exposure to high voltage power lines could be described

as risk factor of ALL for the first time.

Pubmed Data : Asian Pac J Cancer Prev. 2015 ;16(6):2347-50. PMID: 25824762

Article Published Date : Dec 31, 2014

Authors : Maral Mazloomi Tabrizi, Sepideh Arbabi Bidgoli

Study Type : Environmental, Human Study
Additional Links
Diseases : Acute lymphoblastic leukemia (ALL) : CK(130) : AC(39)
Additional Keywords : Environmental Factors : CK(47) : AC(8), Prenatal Epigenetic Programming : CK(17) : AC(5), Risk Factors : CK(3057) : AC(392), Socioeconomic Status : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Agricultural Chemicals : CK(10) : AC(1), Herbicides : CK(10) : AC(1), Pesticides : CK(827) : AC(95)

Adiponectin: Low Levels (AC 1) (CK 2)

Deep sea water has anti-obesity and anti-diabetic properties.

Pubmed Data : Mar Biotechnol (NY). 2009 Jul-Aug;11(4):531-9. Epub 2008 Dec 13. PMID: 19083059

Article Published Date : Jul 01, 2009

Authors : Hee Sun Hwang, Hyun Ah Kim, Sung Hak Lee, Jong Won Yun

Study Type : Animal Study
Additional Links
Substances : Water: Deep Sea : CK(50) : AC(20)
Diseases : Adiponectin: Low Levels : CK(118) : AC(27) , Diabetes Mellitus: Type 2 : CK(6029) : AC(1167)
Pharmacological Actions : Hypoglycemic Agents : CK(3297) : AC(841)
Additional Keywords : Anti-Obesity Agents : CK(1519) : AC(430)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Aging (AC 3) (CK 14)

Exposure to ELF-MFs may act as a risk factor for the

occurrence of oxidative stress-based nervous system pathologies associated with ageing.

Pubmed Data : Int J Biochem Cell Biol. 2008 ;40(12):2762-70. Epub 2008 Jun 10. PMID: 18585472

Article Published Date : Jan 01, 2008

Authors : Stefano Falone, Alessandro Mirabilio, Maria Cristina Carbone, Vincenzo Zimmitti, Silvia Di Loreto, Maria Addolorata Mariggiò, Rosa Mancinelli, Carmine Di Ilio, Fernanda Amicarelli

Study Type : Animal Study
Additional Links
Diseases : Aging : CK(2716) : AC(676) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Long-term exposure to extremely low frequency electromagnetic fields may lead to changes in expression of genes involved in metabolic processes, response to stress, mitotic spindle organization, aging, cell death and cellular respiration.

Pubmed Data : Mutat Res. 2013 Dec 12 ;758(1-2):95-103. Epub 2013 Oct 22. PMID: 24157427

Article Published Date : Dec 12, 2013

Authors : Si-Si Li, Zi-Yan Zhang, Chuan-Jun Yang, Hui-Yong Lian, Peng Cai

Study Type : Animal Study
Additional Links
Diseases : Aging : CK(2716) : AC(676)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Mobile phone radiofrequency may alter immune function in the elderly.

Pubmed Data : Ann N Y Acad Sci. 2006 May ;1067:493-9. PMID: 16804032

Article Published Date : May 01, 2006

Authors : Miriam Capri, Stefano Salvioli, Serena Altilia, Federica Sevini, Daniel Remondini, Pietro Mesirca, Ferdinando Bersani, Daniela Monti, Claudio Franceschi

Study Type : Human Study
Additional Links
Diseases : Aging : CK(2716) : AC(676)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Aluminum Toxicity (AC 1) (CK 2)

There was structural changes of Purkinje cells and iron and aluminium accumulations in stratum granulosum of rabbit's cerebellum after exposure to RF EMF.

Pubmed Data : Bratisl Lek Listy. 2017 ;118(10):575-579. PMID: 29198122

Article Published Date : Dec 31, 2016

Authors : M Kopani, B Filova, P Sevcik, D Kosnac, J Misek, S Polak, M Kohan, J Major, M Zdimalova, J Jakus

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(443) : AC(188)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Aluminum : CK(533) : AC(185)

Alzheimer's Disease (AC 3) (CK 4)

High long-term exposure to extremely low frequency and radiofrequency electromagnetic fields may lead to breast cancer and Alzheimer's disease through amyloid-beta upregulation and melatonin downregulation.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):149-56. Epub 2009 Mar 10. PMID: 19278839

Article Published Date : Aug 01, 2009

Authors : Zoreh Davanipour, Eugene Sobel

Study Type : Review
Additional Links
Diseases : , Alzheimer's Disease : CK(2442) : AC(871) , Breast Cancer : CK(5066) : AC(1738)

Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Amyloid-Beta Upregulation : CK(3) : AC(2) , Carcinogenic (suspected) : CK(21) : AC(3), Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

Mobile phone electromagnetic radiation affects amyloid precursor protein and α-synuclein metabolism in SH-SY5Y cells.

Pubmed Data : Pathophysiology. 2019 Mar 1. Epub 2019 Mar 1. PMID: **30850244**

Article Published Date : Feb 28, 2019

Authors : Aikaterina L Stefi, Lukas H Margaritis, Aikaterini S Skouroliakou, Dido Vassilacopoulou

Study Type : In Vitro Study
Additional Links
Diseases : Alzheimer's Disease : CK(2442) : AC(871) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Parkinson's Disease : CK(1155) : AC(411)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

The implications for mobile phone radiation exposure through possible ferromagnetic transduction may be investigated by using the magnetite present in C. elegans as an experimental model.

Pubmed Data : Proc Biol Sci. 2004 Dec 7 ;271 Suppl 6:S436-9. PMID: **15801597**

Article Published Date : Dec 07, 2004

Authors : Charles G Cranfield, Adam Dawe, Vassil Karloukovski, Rafal E Dunin-Borkowski, David de Pomerai, Jon Dobson

Study Type : Animal Study
Additional Links
Diseases : Alzheimer's Disease : CK(2442) : AC(871)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Amyloid-Beta Upregulation : CK(3) : AC(2)

Amyotrophic Lateral Sclerosis (AC 4) (CK 55)

50-Hz magnetic field affects iron homeostasis in vitro.

Pubmed Data : Int J Radiat Biol. 2019 03 ;95(3):368-377. Epub 2019 Jan 4. PMID: 30513241

Article Published Date : Jan 01, 2019

Authors : Claudia Consales, Martina Panatta, Alessio Butera, Giuseppe Filomeni, Caterina Merla, Maria Teresa Carrì, Carmela Marino, Barbara Benassi

Study Type : Human In Vitro
Additional Links
Diseases : Amyotrophic Lateral Sclerosis : CK(567) : AC(140)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

In this meta-analysis, there was an observed increased risk of amytrophic lateral sclerosis in workers occupationally exposed to extremely low frequency electromagnetic fields.

Pubmed Data : Bioelectromagnetics. 2018 Feb ;39(2):156-163. Epub 2018 Jan 19. PMID: 29350413

Article Published Date : Feb 01, 2018

Authors : Anke Huss, Susan Peters, Roel Vermeulen

Study Type : Meta Analysis
Additional Links
Diseases : Amyotrophic Lateral Sclerosis : CK(567) : AC(140)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

There is an association between occupational exposure to power frequency electromagnetic fields and amyotrophic lateral sclerosis.

Pubmed Data : Am J Ind Med. 2003 Feb;43(2):212-20. PMID: 12541277

Article Published Date : Feb 01, 2003

Authors : Chung-Yi Li, Fung-Chang Sung

Study Type : Meta Analysis
Additional Links
Diseases : Amyotrophic Lateral Sclerosis : CK(567) : AC(140)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

These results strengthen the positive association between amyotrophic lateral sclerosis and extremely-low electromagnetic field exposure.

Pubmed Data : Occup Environ Med. 2017 08 ;74(8):578-585. Epub 2017 Mar 29. PMID: 28356332

Article Published Date : Jan 01, 2017

Authors : Tom Koeman, Pauline Slottje, Leo J Schouten, Susan Peters, Anke Huss, Jan H Veldink, Hans Kromhout, Piet A van den Brandt, Roel Vermeulen

Study Type : Human Study
Additional Links
Diseases : Amyotrophic Lateral Sclerosis : CK(567) : AC(140)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Anxiety (AC 2) (CK 20)

Some reported health complaints associated with mobile phone use in adolescents were tiredness, stress, headache, anxiety, concentration difficulties and sleep disturbances.

Pubmed Data : Environ Health. 2008 May 21 ;7:18. Epub 2008 May 21. PMID: 18495003

Article Published Date : May 21, 2008

Authors : Fredrik Söderqvist, Michael Carlberg, Lennart Hardell

Study Type : Human Study
Additional Links
Diseases : Anxiety : CK(48) : AC(8) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This study suggests that long-term occupational exposure to ELF-EMF may lead to depression, stress, anxiety and poor sleep quality.

Pubmed Data : Electromagn Biol Med. 2019 ;38(1):96-101. Epub 2018 Dec 14. PMID: 30547710

Article Published Date : Dec 31, 2018

Authors : Majid Bagheri Hosseinabadi, Narges Khanjani, Mohammad Hossein Ebrahimi, Bahman Haji, Mazaher Abdolahfard

Study Type : Human Study
Additional Links
Diseases : Anxiety : CK(48) : AC(8) , Depression : CK(4054) : AC(705) , Sleep Disorders : CK(722) : AC(92)
Additional Keywords : Increased Risk : CK(1600) : AC(192)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Anxiety Disorders (AC 4) (CK 16)

Extremely low frequency electromagnetic field induces anxiety-like behavior which is mediated by oxidative stress.

Pubmed Data : Environ Sci Pollut Res Int. 2017 Sep ;24(27):21693-21699. Epub 2017 Jul 29. PMID: 28756602

Article Published Date : Sep 01, 2017

Authors : Natasa Z Djordjevic, Milica G Paunović, Aleksandar S Peulić

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Anxiogenic : CK(6) : AC(3) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields may induce anxiety-like behavior and oxidative stress.

Pubmed Data : Behav Brain Res. 2019 02 1 ;359:630-638. Epub 2018 Oct 2. PMID: 30290199

Article Published Date : Jan 01, 2019

Authors : Seyed Asaad Karimi, Iraj Salehi, Teimor Shykhi, Samad Zare, Alireza Komaki

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Anxiogenic : CK(6) : AC(3) , Oxidant : CK(122) : AC(48)

Headaches, sleep disorders, nervousness, fatigue, and concentration were the most commonly reported complaints among electromagnetic field-exposed individuals in this questionnaire study.

Pubmed Data : Int J Hyg Environ Health. 2004 Feb ;207(2):141-50. PMID: **15031956**

Article Published Date : Feb 01, 2004

Authors : Martin Röösli, Mirjana Moser, Yvonne Baldinini, Martin Meier, Charlotte Braun-Fahrländer

Study Type : Human Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Cognitive Decline/Dysfunction : CK(2113) : AC(426), Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Rats exposed to mobile phone radiation present with higher oxidative stress, reduced antioxidant activity, and extensive neurodegeneration in the brain.

Pubmed Data : Neurol Res. 2014 Dec ;36(12):1072-9. Epub 2014 May 26. PMID: **24861496**

Article Published Date : Dec 01, 2014

Authors : Nidhi Saikhedkar, Maheep Bhatnagar, Ayushi Jain, Pooja Sukhwal, Chhavi Sharma, Neha Jaiswal

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Brain: Oxidative Stress : CK(79) : AC(46) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Astrocytoma (AC 2) (CK 15)

Electromagnetic fields induce astrocytoma proliferation in vitro.

Pubmed Data : Histol Histopathol. 2009 12 ;24(12):1551-61. PMID: 19795354

Article Published Date : Jan 12, 2009

Authors : C Pérez-Castejón, R N Pérez-Bruzón, M Llorente, N Pes, C Lacasa, T Figols, M Lahoz, C Maestú, A Vera-Gil, A Del Moral, M J Azanza

Study Type : Human In Vitro
Additional Links
Diseases : Astrocytoma : CK(12) : AC(6)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450), Apoptotic : CK(5217) : AC(3846) , Heat Shock Protein Inducer : CK(83) : AC(30)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

There is an increased risk for grade IV astrocytoma associated with occupational extremely low-frequency electromagnetic fields.

Pubmed Data : Am J Ind Med. 2017 May ;60(5):494-503. Epub 2017 Apr 10. PMID: 28394434

Article Published Date : May 01, 2017

Authors : Michael Carlberg, Tarmo Koppel, Mikko Ahonen, Lennart Hardell

Study Type : Human Study
Additional Links
Diseases : Astrocytoma : CK(12) : AC(6) , Astrocytoma: Grade IV : CK(3) : AC(1) , Glioblastoma : CK(398) : AC(193)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Astrocytoma: Grade IV (AC 1) (CK 10)

There is an increased risk for grade IV astrocytoma associated with occupational extremely low-frequency electromagnetic fields.

Pubmed Data : Am J Ind Med. 2017 May ;60(5):494-503. Epub 2017 Apr 10. PMID: 28394434

Article Published Date : May 01, 2017

Authors : Michael Carlberg, Tarmo Koppel, Mikko Ahonen, Lennart Hardell

Study Type : Human Study

Additional Links

Diseases : Astrocytoma : CK(12) : AC(6) , Astrocytoma: Grade IV : CK(3) : AC(1) , Glioblastoma : CK(398) : AC(193)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Atopic Dermatitis (AC 1) (CK 10)

Microwave radiation by mobile phones may enhance allergen-induced wheal responses in association with substance P and vasoactive intestinal peptide in patients with atopic eczema/dermatitis syndrome.

Pubmed Data : Int Arch Allergy Immunol. 2002 Dec ;129(4):348-50. PMID: 12483040

Article Published Date : Dec 01, 2002

Authors : Hajime Kimata

Study Type : Human Study

Additional Links

Diseases : Atopic Dermatitis : CK(1422) : AC(182) , Eczema : CK(1423) : AC(183)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33)

Atopic Disease (AC 1) (CK 10)

Electromagnetic fields have a greater influence on women with a predisposition to allergic responses who are exposed to toxic traffic emissions than women without predispostions to allergic responses.

Pubmed Data : Ind Health. 2000 Jul ;38(3):294-300. PMID: 10943077

Article Published Date : Jul 01, 2000

Authors : A Del Signore, P Boscolo, S Kouri, G Di Martino, G Giuliano

Study Type : Human Study
Additional Links
Diseases : Atopic Disease : CK(101) : AC(10)
Additional Keywords : Atopic Disease : CK(101) : AC(10)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Benzene : CK(142) : AC(24) , Lead : CK(167) : AC(32)

Attention Deficit Disorder (AC 1) (CK 1)

This review documents new data on neurodevelopmental and neurobehavioral changes due to exposure to wireless technologies.

Pubmed Data : Child Dev. 2018 01 ;89(1):129-136. Epub 2017 May 15. PMID: 28504324

Article Published Date : Jan 01, 2018

Authors : Cindy Sage, Ernesto Burgio

Study Type : Review
Additional Links
Diseases : Attention Deficit Disorder : CK(136) : AC(14) , Attention Deficit Hyperactivity Disorder : CK(165) : AC(19), Autism : CK(617) : AC(73)
Additional Keywords : Autism : CK(617) : AC(73)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Attention Deficit Hyperactivity Disorder (AC 1) (CK 1)

This review documents new data on neurodevelopmental and neurobehavioral changes due to exposure to wireless technologies.

Pubmed Data : Child Dev. 2018 01 ;89(1):129-136. Epub 2017 May 15. PMID: 28504324

Article Published Date : Jan 01, 2018

Authors : Cindy Sage, Ernesto Burgio

Study Type : Review
Additional Links
Diseases : Attention Deficit Disorder : CK(136) : AC(14) , Attention Deficit Hyperactivity Disorder : CK(165) : AC(19), Autism : CK(617) : AC(73)
Additional Keywords : Autism : CK(617) : AC(73)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Auditory Diseases (AC 3) (CK 14)

The auditory brainstem region is susceptible to chronic exposure to RF radiation, which may affect the function of the central auditory system.

Pubmed Data : Int J Mol Med. 2014 Aug ;34(2):409-19. Epub 2014 May 22. PMID: 24866721

Article Published Date : Aug 01, 2014

Authors : Dhiraj Maskey, Hyung Gun Kim, Myung-Whan Suh, Gu Seob Roh, Myeung Ju Kim

Study Type : Animal Study
Additional Links
Diseases : Auditory Diseases : CK(3) : AC(2)
Additional Keywords : Auditory Diseases : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

These results support that long-term exposure to a GSM-like 2100MHz electromagnetic fields causes an increase in neuronal degeneration and apoptosis in the auditory system.

Pubmed Data : Braz J Otorhinolaryngol. 2017 Nov - Dec;83(6):691-696. Epub 2016 Nov 5. PMID: 27865708

Article Published Date : Dec 01, 2017

Authors : Metin Çeliker, Abdulkadir Özgür, Levent Tümkaya, Suat Terzi, Mustafa Yılmaz, Yıldıray Kalkan, Ender Erdoğan

Study Type : Animal Study
Additional Links
Diseases : Auditory Diseases : CK(3) : AC(2)
Additional Keywords : Auditory Diseases : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

This study shows changes in hearing thresholds of ears exposed to mobile phones compared to nonexposed ears in medical students.

Pubmed Data : J Postgrad Med. 2017 Oct-Dec;63(4):221-225. PMID: 28272071

Article Published Date : Oct 01, 2017

Authors : S Das, S Chakraborty, B Mahanta

Study Type : Human Study
Additional Links
Diseases : Auditory Diseases : CK(3) : AC(2)
Additional Keywords : Auditory Diseases : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

Autism (AC 1) (CK 1)

This review documents new data on neurodevelopmental and neurobehavioral changes due to exposure to wireless technologies.

Pubmed Data : Child Dev. 2018 01 ;89(1):129-136. Epub 2017 May 15. PMID: 28504324

Article Published Date : Jan 01, 2018

Authors : Cindy Sage, Ernesto Burgio

Study Type : Review
Additional Links
Diseases : Attention Deficit Disorder : CK(136) : AC(14) , Attention Deficit Hyperactivity Disorder : CK(165) : AC(19), Autism : CK(617) : AC(73)
Additional Keywords : Autism : CK(617) : AC(73)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Autism Spectrum Disorders (AC 4) (CK 5)

Maternal exposure to EM fields in mothers with dental amalgam fillings may cause elevated levels of mercury and trigger the increase in autism rates.

Pubmed Data : J Biomed Phys Eng. 2016 Mar ;6(1):41-6. Epub 2016 Mar 1. PMID: 27026954

Article Published Date : Feb 29, 2016

Authors : Gh Mortazavi, M Haghani, N Rastegarian, S Zarei, S M J Mortazavi

Study Type : Commentary
Additional Links
Diseases : Autism Spectrum Disorders : CK(2789) : AC(399) , Mercury Poisoning : CK(390) : AC(111)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Dental Amalgams : CK(20) : AC(1)

The results from this rat model study demonstrate a possible link between electromagnetic fields and autism.

Pubmed Data : Int J Dev Neurosci. 2014 Oct ;37:58-64. Epub 2014 Jun 23. PMID: 24970316

Article Published Date : Oct 01, 2014

Authors : Ibrahim Alsaeed, Faisal Al-Somali, Lama Sakhnini, Omar S Aljarallah, Rayan M M Hamdan, Saleh A Bubishate, Ziyab Khan Sarfaraz, Amer Kamal

Study Type : Animal Study
Additional Links
Diseases : Autism Spectrum Disorders : CK(2789) : AC(399)
Additional Keywords : Autism Spectrum Disorders : CK(2789) : AC(399)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

This study proposes that electromagnetic fields may interfere with the calibration of the nervous system in infants and may provide a link to autism.

Pubmed Data : Med Hypotheses. 2006 ;67(2):378-82. Epub 2006 Mar 10. PMID: 16530334

Article Published Date : Jan 01, 2006

Authors : Ian M Thornton

Study Type : Review
Additional Links
Diseases : Autism Spectrum Disorders : CK(2789) : AC(399)
Additional Keywords : Autism Spectrum Disorders : CK(2789) : AC(399)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This study suggests fetal or neonatal exposures to radiofrequency radiation may be associated with an increased incidence of autism.

Pubmed Data : Med Hypotheses. 2004 ;62(2):195-7. PMID: 14962625

Article Published Date : Jan 01, 2004

Authors : Robert C Kane

Study Type : Review

Additional Links
Diseases : Autism Spectrum Disorders : CK(2789) : AC(399)
Additional Keywords : Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Autoimmune Diseases (AC 6) (CK 23)

Effective control of environmental Electrosmog immunomodulation may soon become necessary for successful therapy of autoimmune disease.

Pubmed Data : Immunol Res. 2017 02 ;65(1):129-135. PMID: 27412293

Article Published Date : Dec 31, 2016

Authors : Trevor G Marshall, Trudy J Rumann Heil

Study Type : Human Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Additional Keywords : Autoimmune Diseases : CK(8201) : AC(1511) , Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

Immune activity of responding lymphocytes and monocytes can be intensified by 900 MHz microwaves.

Pubmed Data : Electromagn Biol Med. 2006 ;25(1):45-51. PMID: 16595333

Article Published Date : Jan 01, 2006

Authors : Wanda Stankiewicz, Marek P Dabrowski, Roman Kubacki, Elzbieta Sobiczewska, Stanisław Szmigielski

Study Type : Human In Vitro
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33) , Immunotoxic : CK(338) : AC(66)

Millimeter waves induce a Th1 type immune response in rats.

Pubmed Data : Bioelectromagnetics. 2003 Jul ;24(5):356-65. PMID: 12820293

Article Published Date : Jul 01, 2003

Authors : Vera Makar, Mahendra Logani, Imre Szabo, Marvin Ziskin

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33) , Immunotoxic : CK(338) : AC(66)

This Russian study adds further evidence to the association between autoimmunity and electromagnetic radiation.

Pubmed Data : Radiats Biol Radioecol. 2010 Jan-Feb;50(1):17-21. PMID: 20297676

Article Published Date : Jan 01, 2010

Authors : A A Ivanov, Iu G Grigor'ev, V N Mal'tsev, A M Ulanova, N M Stavrakova, V G Skachkova, O A Grigor'ev

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

This study adds evidence that electromagnetic fields may contribute to autoimmunity.

Pubmed Data : Bioelectromagnetics. 2010 Dec ;31(8):589-602. Epub 2010 Sep 20. PMID: 20857454

Article Published Date : Dec 01, 2010

Authors : Yury G Grigoriev, Oleg A Grigoriev, Alexander A Ivanov, Antonina M Lyaginskaya, Anton V Merkulov, Natalia B Shagina, Vyacheslav N Maltsev, Philippe Lévêque, Alla M Ulanova, Vyacheslav A Osipov, Alexander V Shafirkin

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

This study adds evidence that electromagnetic radiation may contribute to autoimmunity.

Pubmed Data : Radiats Biol Radioecol. 2011 Nov-Dec;51(6):721-30. PMID: 22384724

Article Published Date : Nov 01, 2011

Authors : Iu G Grigor'ev, A V Shafirkin, A M Nosocskiĭ

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Birth Defects (AC 5) (CK 26)

In the offspring of fathers most likely to have been exposed to radiofrequency electromagnetic fields, there was an increased risk for preterm birth and a category of "other defects. Researchers also observed a decreased risk of certain other defects.

Pubmed Data : Eur J Epidemiol. 2006 ;21(7):529-35. Epub 2006 Jul 21. PMID: 16858619

Article Published Date : Jan 01, 2006

Authors : Geir Mjøen, Dag Ottar Saetre, Rolv T Lie, Tore Tynes, Karl Gerhard Blaasaas, Merete Hannevik, Lorentz M Irgens

Study Type : Human Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39)
Additional Keywords : Birth Defects : CK(204) : AC(39) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Intermittent mobile phone exposure results in a significant increase in embryonic mortality and cardiac

deformity in chicken embryos.

Pubmed Data : Anat Histol Embryol. 2016 Jun ;45(3):197-208. Epub 2015 Jul 14. PMID: 26171674

Article Published Date : Jun 01, 2016

Authors : W Ye, F Wang, W Zhang, N Fang, W Zhao, J Wang

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3) , Cardiotoxic : CK(810) : AC(124) , Genotoxic : CK(201) : AC(78)

Rats born to mothers exposed to mobile phone radiation exhibit altered electrophysiological properties of CA1 pyramidal neurons, deleteriously impacting cognition.

Pubmed Data : Toxicol Ind Health. 2016 Jun ;32(6):968-79. Epub 2014 Mar 6. PMID: 24604340

Article Published Date : Jun 01, 2016

Authors : Moazamehosadat Razavinasab, Kasra Moazzami, Mohammad Shabani

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53)
Additional Keywords : Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Service aboard a Norwegian missile torpedo speed boat was associated with an increased risk of having children with congenital birth defects and having children that were stillborn. The investigation of the ship included measurements of high-frequency EMF

Pubmed Data : Occup Environ Med. 2006 Feb ;63(2):92-7. PMID: 16421386

Article Published Date : Feb 01, 2006

Authors : N Mageroy, O J Mollerlokken, T Riise, V Koefoed, B E Moen

Study Type : Human Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39)
Additional Keywords : Birth Defects : CK(204) : AC(39) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This study demonstrated the ability of extremely-low electromagnetic fields to impact fetal development in a tissue-specific way.

Pubmed Data : PLoS One. 2015 ;10(11):e0142259. Epub 2015 Nov 11. PMID: 26559811

Article Published Date : Jan 01, 2015

Authors : Ion Udroiu, Antonio Antoccia, Caterina Tanzarella, Livio Giuliani, Francesca Pacchierotti, Eugenia Cordelli, Patrizia Eleuteri, Paola Villani, Antonella Sgura

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Blood Sugar Problems (AC 1) (CK 5)

Static magnetic fields alter glucose homeostasis via alteration in cellular redox.

Pubmed Data : Int J Radiat Biol. 2014 Dec ;90(12):1240-5. Epub 2014 Aug 4. PMID: 24899393

Article Published Date : Dec 01, 2014

Authors : Aïda Lahbib, Soumaya Ghodbane, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Human In Vitro
Additional Links

Diseases : Blood Sugar Problems : CK(11275) : AC(2123)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Bone Diseases (AC 1) (CK 10)

Long-term exposure to an electromagnetic field affects bone and thyroid metabolism and also increases oxidative stress index by increasing the total oxidant status and decreasing the antioxidant status.

Pubmed Data : Onco Targets Ther. 2016 ;9:745-54. Epub 2016 Feb 12. PMID: 26929645

Article Published Date : Jan 01, 2016

Authors : Halil Kunt, İhsan Şentürk, Yücel Gönül, Mehmet Korkmaz, Ahmet Ahsen, Ömer Hazman, Ahmet Bal, Abdurrahman Genç, Ahmet Songur

Study Type : Human Study
Additional Links
Diseases : Bone Diseases : CK(18) : AC(6) , Hypothyroidism : CK(584) : AC(90) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21) , Oxidant : CK(122) : AC(48)

Brain Cancer (AC 28) (CK 242)

A shift towards left sided tumor location for all adult gliomas was noted in this study following the introduction of mobile phones.

Pubmed Data : Asian Pac J Cancer Prev. 2012 ;13(11):5857-63. PMID: 23317269

Article Published Date : Jan 01, 2012

Authors : Micha Barchana, Menahem Margaliot, Irena Liphshitz

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169), Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

Activation of heat shock protein 27 pathway may be a mechanism that underpins the electromagnetic field-cancer connection.

Pubmed Data : Differentiation. 2002 May ;70(2-3):120-9. PMID: **12076339**

Article Published Date : May 01, 2002

Authors : Dariusz Leszczynski, Sakari Joenväärä, Jukka Reivinen, Reetta Kuokka

Study Type : Human In Vitro
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8) , Carcinogenic (suspected) : CK(21) : AC(3)

Among the 11 high-power Korean AM radio transmitter sites included in this study, there were significantly increased incidences of leukemia in 2 areas and of brain cancer in 1 area.

Pubmed Data : Arch Environ Health. 2003 Dec ;58(12):756-62. PMID: **15859510**

Article Published Date : Dec 01, 2003

Authors : Mina Ha, Hyung-Jun Lim, Soo-Hun Cho, Hyung-Do Choi, Kwang-Yun Cho

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Cell phone radiation exposure is associated with a broad range of brain protein changes which may explain the association between cell phone use and adverse health effects.

Pubmed Data : Electromagn Biol Med. 2012 Jan 20. Epub 2012 Jan 20. PMID: 22263702

Article Published Date : Jan 20, 2012

Authors : Adamantia F Fragopoulou, Athina Samara, Marianna H Antonelou, Anta Xanthopoulou, Aggeliki Papadopoulou, Konstantinos Vougas, Eugenia Koutsogiannopoulou, Ema Anastasiadou, Dimitrios J Stravopodis, George Th Tsangaris, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92) , Insomnia : CK(523) : AC(66) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Decreased survival of glioma cases is associated with long-term and high cumulative use of mobile phones.

Pubmed Data : Neuroepidemiology. 2013 ;40(2):101-8. Epub 2012 Oct 24. PMID: 23095687

Article Published Date : Jan 01, 2013

Authors : Lennart Hardell, Michael Carlberg

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioblastoma : CK(398) : AC(193)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Exposure to electromagnetic fields below the exposure limits for humans results in significantly more tumor formation in the lungs and livers of exposed animals compared to controls.

Pubmed Data : Biochem Biophys Res Commun. 2015 Apr 17 ;459(4):585-90. Epub 2015 Mar 6.

PMID: 25749340

Article Published Date : Apr 17, 2015

Authors : Alexander Lerchl, Melanie Klose, Karen Grote, Adalbert F X Wilhelm, Oliver Spathmann, Thomas Fiedler, Joachim Streckert, Volkert Hansen, Markus Clemens

Study Type : Animal Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Tumorigenic : CK(16) : AC(11)

In patients of this study who used cellular telephones, the tumor occurred more often on the contralateral than ipsilateral side of the head. Further efforts should focus on potentially longer induction periods.

Pubmed Data : Neurology. 2002 Apr 23 ;58(8):1304-6. PMID: 11971109

Article Published Date : Apr 23, 2002

Authors : J E Muscat, M G Malkin, R E Shore, S Thompson, A I Neugut, S D Stellman, J Bruce

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Ipsilateral use of a cellular telephone increased the risk of tumours in the temporal, temporoparietal and occipital areas by 2.42-fold.

Pubmed Data : Neuroepidemiology. 2003 Mar-Apr;22(2):124-9. PMID: 12629278

Article Published Date : Mar 01, 2003

Authors : Lennart Hardell, Kjell Hansson Mild, Monica Sandström, Michael Carlberg, Arne Hallquist, Anneli Påhlson

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Mobile phone use among children is increasing and investigations into the health effects of mobile phone use among children should continue.

Pubmed Data : Bioelectromagnetics. 2017 Jul ;38(5):349-355. Epub 2017 Mar 24. PMID: **28342194**

Article Published Date : Jul 01, 2017

Authors : Yasuto Sato, Noriko Kojimahara, Naohito Yamaguchi

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Occupational ELF exposure may play a role in the later stages of brain tumorigenesis.

Pubmed Data : Cancer Epidemiol Biomarkers Prev. 2014 Sep ;23(9):1863-72. Epub 2014 Jun 16. PMID: **24935666**

Article Published Date : Sep 01, 2014

Authors : Michelle C Turner, Geza Benke, Joseph D Bowman, Jordi Figuerola, Sarah Fleming, Martine Hours, Laurel Kincl, Daniel Krewski, Dave McLean, Marie-Elise Parent, Lesley Richardson, Siegal Sadetzki, Klaus Schlaefer, Brigitte Schlehofer, Joachim Schüz, Jack Siemiatycki, Martie van Tongeren, Elisabeth Cardis

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

Our data suggest that use of handheld cellular telephones is not associated with risk of brain cancer, but further studies are needed to account for longer induction

periods, especially for slow-growing tumors with neuronal features.

Pubmed Data : JAMA. 2000 Dec 20 ;284(23):3001-7. PMID: 11122586

Article Published Date : Dec 20, 2000

Authors : J E Muscat, M G Malkin, S Thompson, R E Shore, S D Stellman, D McRee, A I Neugut, E L Wynder

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

The highest risks for brain tumors were associated with a greater than 5-year latency period in the 20-29-yr age group for analog phones and cordless phones.

Pubmed Data : Arch Environ Health. 2004 Mar ;59(3):132-7. PMID: 16121902

Article Published Date : Mar 01, 2004

Authors : Lennart Hardell, Kjell H Mild, Michael Carlberg, Arne Hallquist

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

The ipsilateral use of an analogue cellular phone yielded a significantly increased risk for malignant brain tumours.

Pubmed Data : Int J Radiat Biol. 2002 Oct ;78(10):931-6. PMID: 12465658

Article Published Date : Oct 01, 2002

Authors : L Hardell, K H Mild, M Carlberg

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Cooking : CK(49) : AC(28)

The possible influence of currently acceptable low-level RF exposures on carcinogenesis has been suggested by some studies and warrants further investigation.

Pubmed Data : Cancer. 2008 Oct 1 ;113(7 Suppl):1953-68. PMID: 18798534

Article Published Date : Oct 01, 2008

Authors : Melissa L Bondy, Michael E Scheurer, Beatrice Malmer, Jill S Barnholtz-Sloan, Faith G Davis, Dora Il'yasova, Carol Kruchko, Bridget J McCarthy, Preetha Rajaraman, Judith A Schwartzbaum, Siegal Sadetzki, Brigitte Schlehofer, Tarik Tihan, Joseph L Wiemels, Margaret Wrensch, Patricia A Buffler,

Study Type : Review
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The results indicate that using a cell phone for 10 years or more approximately doubles the risk of being diagnosed with a brain tumor on the same side of the head as that preferred for cell phone use.

Pubmed Data : Surg Neurol. 2009 Sep ;72(3):205-14; discussion 214-5. Epub 2009 Mar 27. PMID: 19328536

Article Published Date : Sep 01, 2009

Authors : Vini G Khurana, Charles Teo, Michael Kundi, Lennart Hardell, Michael Carlberg

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

There is a concerning association between heavy mobile phone use and brain tumours.

Pubmed Data : Occup Environ Med. 2014 Jul ;71(7):514-22. Epub 2014 May 9. PMID: 24816517

Article Published Date : Jul 01, 2014

Authors : Gaëlle Coureau, Ghislaine Bouvier, Pierre Lebailly, Pascale Fabbro-Peray, Anne Gruber, Karen Leffondre, Jean-Sebastien Guillamo, Hugues Loiseau, Simone Mathoulin-Pélissier, Roger Salamon, Isabelle Baldi

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers: Radiation-Induced : CK(9) : AC(7)
Additional Keywords : Cancers: Radiation-Induced : CK(9) : AC(7) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is an an almost doubling of the risk of head tumours induced by long-term mobile phone use or latency.

Pubmed Data : Environ Health. 2011 Jun 17;10(1):59. Epub 2011 Jun 17. PMID: 21679472

Article Published Date : Jun 17, 2011

Authors : Angelo G Levis, Nadia Minicuci, Paolo Ricci, Valerio Gennaro, Spiridione Garbisa

Study Type : Meta Analysis
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

There were suggestions of an increased risk of glioma in long-term mobile phone users with high radiofrequency exposure from mobile phones in this study.

Pubmed Data : Occup Environ Med. 2011 Sep ;68(9):631-40. Epub 2011 Jun 9. PMID: 21659469

Article Published Date : Sep 01, 2011

Authors : E Cardis, B K Armstrong, J D Bowman, G G Giles, M Hours, D Krewski, M McBride, M E Parent, S Sadetzki, A Woodward, J Brown, A Chetrit, J Figuerola, C Hoffmann, A Jarus-Hakak, L Montestruq, L Nadon, L Richardson, R Villegas, M Vrijheid

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This article emphasizes the need for new parameters of electromagnetic exposure in light of evidence that suggests mobile phone use longer than 10 years increases the risk for brain tumors.

Pubmed Data : Biomed Pharmacother. 2008 Feb ;62(2):104-9. Epub 2007 Dec 31. PMID: 18242044

Article Published Date : Feb 01, 2008

Authors : Lennart Hardell, Cindy Sage

Study Type : Review
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers : CK(7) : AC(3)
Additional Keywords : Cancers : CK(7) : AC(3) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This commentary provides evidence that radiofrequency electromagnetic fields, at high levels and long durations, can increase the risk of cancer.

Pubmed Data : J Biomed Phys Eng. 2018 Mar ;8(1):151-152. Epub 2018 Mar 1. PMID: 29732351

Article Published Date : Mar 01, 2018

Authors : S M J Mortazavi, S A R Mortazavi, M Paknahad

Study Type : Commentary
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This investigation confirms previous studies that demonstrate an association between mobile phone use and malignant brain tumors.

Pubmed Data : Neuroepidemiology. 2010 Aug ;35(2):109-14. Epub 2010 Jun 15. PMID: 20551697

Article Published Date : Aug 01, 2010

Authors : Lennart Hardell, Michael Carlberg, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This pooled analysis of case-control studies showed an increased risk of meningioma among heavy users of mobile and cordless phones.

Pubmed Data : Oncol Rep. 2015 Jun ;33(6):3093-8. Epub 2015 Apr 27. PMID: 25963528

Article Published Date : Jun 01, 2015

Authors : Michael Carlberg, Lennart Hardell

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Meningioma : CK(26) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This study confirmed previous results of an association between mobile and cordless phone use and malignant brain tumours. These findings provide support for the hypothesis that RF-EMFs play a role in carcinogenesis.

Pubmed Data : Int J Oncol. 2013 Dec ;43(6):1833-45. Epub 2013 Sep 24. PMID: 24064953

Article Published Date : Dec 01, 2013

Authors : Lennart Hardell, Michael Carlberg, Fredrik Söderqvist, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Meningioma : CK(26) : AC(8)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study demonstrates a very linear relationship between cell phone usage and brain tumor incidence which needs further epidemiological evaluation. The authors note it would be prudent to limit exposure to all sources of electromagnetic radiation.

Pubmed Data : J Neurooncol. 2011 Feb ;101(3):505-7. Epub 2010 Jun 30. PMID: 20589524

Article Published Date : Feb 01, 2011

Authors : Steven Lehrer, Sheryl Green, Richard G Stock

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study found a 3.5-fold increased risk of acoustic neuroma in analog phone users.

Pubmed Data : Eur J Cancer Prev. 2002 Aug ;11(4):377-86. PMID: 12195165

Article Published Date : Aug 01, 2002

Authors : L Hardell, A Hallquist, K Hansson Mild, M Carlberg, A Påhlson, A Lilja

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Use of a cellular telephone was associated with an increased risk in the anatomic area with highest exposure.

Pubmed Data : MedGenMed. 2000 May 4 ;2(2):E2. Epub 2000 May 4. PMID: 11104448

Article Published Date : May 04, 2000

Authors : L Hardell, A Nasman, A Pahlson, A Hallquist

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Use of analog cellular phones, digital cell phones, and cordless phones showed an increased risk of malignant brain tumours.

Pubmed Data : Environ Res. 2006 Feb ;100(2):232-41. Epub 2005 Jul 14. PMID: **16023098**

Article Published Date : Feb 01, 2006

Authors : Lennart Hardell, Michael Carlberg, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Using synthetic time series prediction, this study demonstrates a potential increased risk of some brain cancers associated with mobile phones.

Pubmed Data : Environ Int. 2016 Dec ;97:100-107. Epub 2016 Nov 9. PMID: **27835750**

Article Published Date : Dec 01, 2016

Authors : Frank de Vocht

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Brain Damage (AC 2) (CK 4)

Electromagnetic pulse radiation induces oxidative stress and apoptosis, leading to brain damage in rats.

Pubmed Data : PLoS One. 2014 ;9(3):e91019. Epub 2014 Mar 10. PMID: 24614080

Article Published Date : Jan 01, 2014

Authors : Bin Deng, Hao Xu, Jin Zhang, Jin Wang, Li-Chun Han, Li-Ya Li, Guang-Li Wu, Yan-Ning Hou, Guo-Zhen Guo, Qiang Wang, Han-Fei Sang, Li-Xian Xu

Study Type : Animal Study
Additional Links
Diseases : Brain Damage : CK(93) : AC(44) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Rats born to mothers exposed to a 900 MHz electromagnetic field during pregnancy exhibit neuronal loss and pathological effects even after birth.

Pubmed Data : J Chem Neuroanat. 2016 09 ;75(Pt B):105-10. Epub 2015 Sep 21. PMID: 26391347

Article Published Date : Jan 01, 2016

Authors : Ersan Odacı, Hatice Hancı, Ayşe İkinci, Osman Fikret Sönmez, Ali Aslan, Arzu Şahin, Haydar Kaya, Serdar Çolakoğlu, Orhan Baş

Study Type : Animal Study
Additional Links
Diseases : Brain Damage : CK(93) : AC(44)
Additional Keywords : Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Brain Inflammation (AC 1) (CK 2)

Acute exposure to 900-MHz microwaves induces glial

reactivity and biochemical modifications in the rat brain.

Pubmed Data : Neurobiol Dis. 2004 Dec ;17(3):445-54. PMID: 15571980

Article Published Date : Dec 01, 2004

Authors : Anne-Laure Mausset-Bonnefont, Hélène Hirbec, Xavier Bonnefont, Alain Privat, Jacques Vignon, René de Sèze

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Brain Inflammation : CK(686) : AC(352)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Brain: Microglial Activation (AC 5) (CK 13)

1800 MHz radiofrequency fields stimulates pro-inflammatory responses in microglia and astrocytes in vitro.

Pubmed Data : PLoS One. 2014 ;9(9):e108318. Epub 2014 Oct 2. PMID: 25275372

Article Published Date : Jan 01, 2014

Authors : Yonghui Lu, Mindi He, Yang Zhang, Shangcheng Xu, Lei Zhang, Yue He, Chunhai Chen, Chuan Liu, Huifeng Pi, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation : CK(6531) : AC(1986)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cycloogenase-2 enzyme upregulation : CK(1) : AC(1) , Inflammatory : CK(312) : AC(92), Interleukin-1 up-regulation : CK(2) : AC(1) , Interleukin-6 up-regulation : CK(18) : AC(5), Prostaglandin E2 up-regulation : CK(2) : AC(1) , Tumor necrosis factorα (TNFα) up-regulation : CK(55) : AC(7)

2.45 GHz EMF exposure can initiate the activation of rat microglia cells and STAT3 signalling involves in EMF-induced microglial activation.

Pubmed Data : Int J Radiat Biol. 2010 Jan ;86(1):27-36. PMID: 20070213

Article Published Date : Jan 01, 2010

Authors : Yutong Hao, Xuesen Yang, Chunhai Chen, Yuan-Wang, Xubu Wang, Maoquan Li, Zhengping Yu

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation: Brain : CK(8) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Neurotoxic : CK(1458) : AC(323)

2.45 GHz radiation exposure resulted in decreased protein kinase C activity in the hippocampus and increase in glial cell count in exposed rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(1):61-70. PMID: 16595335

Article Published Date : Jan 01, 2006

Authors : R Paulraj, J Behari

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Inflammatory : CK(312) : AC(92)

Acute exposure to 900-MHz microwaves induces glial reactivity and biochemical modifications in the rat brain.

Pubmed Data : Neurobiol Dis. 2004 Dec ;17(3):445-54. PMID: 15571980

Article Published Date : Dec 01, 2004

Authors : Anne-Laure Mausset-Bonnefont, Hélène Hirbec, Xavier Bonnefont, Alain Privat, Jacques Vignon, René de Sèze

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Brain Inflammation : CK(686) : AC(352)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Pulsed electromagnetic fields induce microglia polarization and inflammation in the brain.

Pubmed Data : J Biol Regul Homeost Agents. 2019 Jul-Aug;33(4):1051-1062. PMID: 31392878

Article Published Date : Jul 01, 2019

Authors : X J Zhang, M M Lv, X Q Zhu, L Y Tian, J J Li, Y P Shao, C J Gao, X D Sun

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Neurotoxic : CK(1458) : AC(323)

Brain: Oxidative Stress (AC 12) (CK 24)

50 GHz microwave radiation induces oxidative stress and DNA damage in the rat brain.

Pubmed Data : Appl Biochem Biotechnol. 2009 Jul ;158(1):126-39. Epub 2008 Dec 17. PMID: 19089649

Article Published Date : Jul 01, 2009

Authors : Kavindra Kumar Kesari, J Behari

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Electromagnetic fields emitted from mobile phones induce oxidative damage in guinea pig brains.

Pubmed Data : Brain Res. 2007 Sep 12 ;1169:120-4. Epub 2007 Jul 17. PMID: 17674954

Article Published Date : Sep 12, 2007

Authors : Ismail Meral, Handan Mert, Nihat Mert, Yeter Deger, Ibrahim Yoruk, Ayşen Yetkin, Siddik Keskin

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Liver antioxidant stores protect the brain from oxidative damage as a result of exposure to 900 MHz and 1800 MHz electromagnetic fields.

Pubmed Data : J Matern Fetal Neonatal Med. 2014 Dec ;27(18):1915-21. Epub 2014 Apr 9. PMID: 24580725

Article Published Date : Dec 01, 2014

Authors : Hasan Çetin, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Nural Pastacı, Mehmet Okan Özkaya

Study Type : Animal Study
Additional Links
Substances : Glutathione : CK(63) : AC(17) , Selenium : CK(999) : AC(188) , Vitamin A : CK(678) : AC(102), Vitamin E : CK(2077) : AC(371)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Neuroprotective Agents : CK(6374) : AC(2801)
Additional Keywords : Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Melatonin confers radioprotective effects against mobil phone-induced oxidative stress in the rat brain.

Pubmed Data : J Radiat Res. 2008 Nov ;49(6):579-86. Epub 2008 Sep 29. PMID: 18827438

Article Published Date : Nov 01, 2008

Authors : Dusan Sokolovic, Boris Djindjic, Jelenka Nikolic, Gordana Bjelakovic, Dusica Pavlovic, Gordana Kocic, Dejan Krstic, Tatjana Cvetkovic, Voja Pavlovic

Study Type : Animal Study

Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Microwaves can be either beneficial to health or be a factor of oxidative stress.

Pubmed Data : Vopr Kurortol Fizioter Lech Fiz Kult. 2005 Sep-Oct(5):17-20. PMID: 16318001

Article Published Date : Sep 01, 2005

Authors : A V Musaev, L F Ismailova, A M Gadzhiev

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Mobile phone exposure induces oxidative stress in the brain, kidneys, and liver and also increases liver enzyme activity.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):279-84. Epub 2014 Apr 8. PMID: 24712749

Article Published Date : Jan 01, 2015

Authors : Merhan Mamdouh Ragy

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , GGT : CK(63) : AC(9) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

One month of mobile phone radiation induces oxidative stress in the rat brain as demonstrated by elevated

TBARS, reduced glutathione activity, and down-regulated antioxidant activity overall.

Pubmed Data : Bratisl Lek Listy. 2014 ;115(5):260-6. PMID: 25174055

Article Published Date : Jan 01, 2014

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Oxidant : CK(122) : AC(48)

Rats exposed to 900, 1800, and 2450 MHz electromagnetic fields exhibit DNA damage in brain tissue.

Pubmed Data : Toxicol Int. 2013 Jan ;20(1):19-24. PMID: 23833433

Article Published Date : Jan 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Sudhir Chandna, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Rats exposed to mobile phone radiation present with higher oxidative stress, reduced antioxidant activity, and extensive neurodegeneration in the brain.

Pubmed Data : Neurol Res. 2014 Dec ;36(12):1072-9. Epub 2014 May 26. PMID: 24861496

Article Published Date : Dec 01, 2014

Authors : Nidhi Saikhedkar, Maheep Bhatnagar, Ayushi Jain, Pooja Sukhwal, Chhavi Sharma, Neha Jaiswal

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Brain: Oxidative Stress : CK(79) : AC(46) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

These findings suggest that EMF exposure may be harmful in young adults by impairing the antioxidant defenses directed at preventing iron-induced oxidative stress.

Pubmed Data : Neuroscience. 2011 Jul 14 ;186:39-47. Epub 2011 Apr 12. PMID: 21497179

Article Published Date : Jul 14, 2011

Authors : K Maaroufi, E Save, B Poucet, M Sakly, H Abdelmelek, L Had-Aissouni

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Vitamin C may play a protective role against detrimental effects of mobile phone radiation in rat brain tissue.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1044-9. Epub 2010 Aug 10. PMID: 20698742

Article Published Date : Dec 01, 2010

Authors : Ergüder B Imge, Bülent Kiliçoğlu, Erdinç Devrim, Recep Cetin, Ilker Durak

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Adenosine deaminase inhibitor : CK(16) : AC(5) , Antioxidants : CK(14410) : AC(5758), Malondialdehyde Down-regulation : CK(1452) : AC(466) , Radioprotective : CK(1247) : AC(406), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Breast Cancer (AC 8) (CK 81)

Electromagnetic radiation from Wi-Fi or cell phones placed within 10cm of cell cultures results in increased oxidative stress and apoptosis.

Pubmed Data : Biochim Biophys Acta. 2015 Oct ;1848(10 Pt B):2756-65. Epub 2015 Feb 19. PMID: 25703814

Article Published Date : Oct 01, 2015

Authors : Bilal Çiğ, Mustafa Nazıroğlu

Study Type : Human In Vitro
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Extremely low-frequency electromagnetic fields may increase the risk of breast cancer.

Pubmed Data : Eur J Gynaecol Oncol. 2014 ;35(3):264-9. PMID: 24984538

Article Published Date : Jan 01, 2014

Authors : G Zhao, X Lin, M Zhou, J Zhao

Study Type : Meta Analysis
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

High long-term exposure to extremely low frequency and radiofrequency electromagnetic fields may lead to breast cancer and Alzheimer's disease through amyloid-beta upregulation and melatonin downregulation.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):149-56. Epub 2009 Mar 10. PMID: 19278839

Article Published Date : Aug 01, 2009

Authors : Zoreh Davanipour, Eugene Sobel

Study Type : Review
Additional Links
Diseases : , Alzheimer's Disease : CK(2442) : AC(871) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Amyloid-Beta Upregulation : CK(3) : AC(2) , Carcinogenic (suspected) : CK(21) : AC(3), Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

There is biological plausability of an association between electromagnetic fields and breast cancer that warrants further investigation.

Pubmed Data : Ann Epidemiol. 2000 Jan ;10(1):31-44. PMID: 10658687

Article Published Date : Jan 01, 2000

Authors : L S Caplan, E R Schoenfeld, E S O'Leary, M C Leske

Study Type : Human Study
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This case series describes four women who developed breast cancer after carrying their phone against their breast up to 10 hours a day, for several years. All tumors developed underneath the position of the phone and had uncanny similarities.

Pubmed Data : Case Rep Med. 2013 ;2013:354682. Epub 2013 Sep 18. PMID: 24151509

Article Published Date : Jan 01, 2013

Authors : John G West, Nimmi S Kapoor, Shu-Yuan Liao, June W Chen, Lisa Bailey, Robert A Nagourney

Study Type : Human: Case Report
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738), Breast Cancer : CK(5066) : AC(1738)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

This meta-analysis demonstrates that ELF-EMFs might be related to an increased risk for female breast cancer.

Pubmed Data : PLoS One. 2013 ;8(7):e69272. Epub 2013 Jul 15. PMID: 23869239

Article Published Date : Jan 01, 2013

Authors : Qingsong Chen, Li Lang, Wenzhe Wu, Guoyong Xu, Xiao Zhang, Tao Li, Hanlin Huang

Study Type : Meta Analysis
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This meta-analysis suggests that EMF exposure may be associated with the increase risk of male breast cancer.

Pubmed Data : Asian Pac J Cancer Prev. 2013 ;14(1):523-8. PMID: 23534787

Article Published Date : Jan 01, 2013

Authors : Jing-Wen Sun, Xiao-Rong Li, Hong-Yu Gao, Jie-Yun Yin, Qin Qin, Shao-Fa Nie, Sheng Wei

Study Type : Meta Analysis
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This study examining mice exposed to extremely low frequency magnetic fields demonstrated that lifetime exposure increases the risk for various types of cancers.

Pubmed Data : Int J Radiat Biol. 2016 ;92(4):202-14. Epub 2016 Feb 19. PMID: 26894944

Article Published Date : Jan 01, 2016

Authors : Morando Soffritti, Eva Tibaldi, Michela Padovani, David G Hoel, Livio Giuliani, Luciano Bua, Michelina Lauriola, Laura Falcioni, Marco Manservigi, Fabiana Manservisi, Simona Panzacchi, Fiorella Belpoggi

Study Type : Animal Study
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Leukemias : CK(479) : AC(215) , Lymphoma : CK(253) : AC(83), Schwannoma : CK(5) : AC(3)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Cancer (AC 1) (CK 10)

The proliferation of cellular antennas and other radiofrequency radiation (RFR) generating devices of the last decades has led to more and more concerns about the potential health effects from RFR exposure.

Pubmed Data : Int J Environ Res Public Health. 2019 Sep 12 ;16(18). Epub 2019 Sep 12. PMID: 31547363

Article Published Date : Sep 12, 2019

Authors : Andrea Vornoli, Laura Falcioni, Daniele Mandrioli, Luciano Bua, Fiorella Belpoggi

Study Type : Human Study
Additional Links
Diseases : Cancer : CK(4) : AC(3) , Infertility : CK(1359) : AC(316)
Additional Keywords : Infertility : CK(1359) : AC(316)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144)

Cancer: Childhood (AC 1) (CK 10)

There was an association between residential proximity to television towers and decreased survival among cases of childhood leukemia in this study.

Pubmed Data : Arch Environ Health. 2003 Sep ;58(9):560-4. PMID: 15369273

Article Published Date : Sep 01, 2003

Authors : Bruce Hocking, Ian Gordon

Study Type : Human Study
Additional Links
Diseases : Cancer: Childhood : CK(33) : AC(3) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Cancers (AC 34) (CK 140)

Electromagnetic field exposure may induce DNA damage, stimulate inflammation, and impact cell proliferation and differentiation.

Pubmed Data : Electromagn Biol Med. 2019 Aug 26:1-18. Epub 2019 Aug 26. PMID: 31450976

Article Published Date : Aug 26, 2019

Authors : Henry Lai

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Cell Cycle Inhibitor : CK(3) : AC(3) , Cytotoxic : CK(89) : AC(53) , Immunotoxic : CK(338) : AC(66) , Inflammatory : CK(312) : AC(92)

Electromagnetic fields directly activate macrophages, stimulating elevated levels of free radical production. This may lead to downstream carcinogenic, genotoxic, and melatonin-depleting effects.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):83-92. PMID: 15352165

Article Published Date : Sep 01, 2004

Authors : Myrtill Simkó, Mats-Olof Mattsson

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogen : CK(61) : AC(12) , Genotoxic : CK(201) : AC(78) , Immunotoxic : CK(338) : AC(66) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Electromagnetic fields may interact with cryptochrome to promote carcinogenesis.

Pubmed Data : Proc Biol Sci. 2018 05 30 ;285(1879). PMID: 29794049

Article Published Date : Jan 30, 2018

Authors : Jukka Juutilainen, Mikko Herrala, Jukka Luukkonen, Jonne Naarala, P J Hore

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Oxidant : CK(122) : AC(48)

Electromagnetic fields may interact with mammalian cryptochrome to alter redox balance in cells.

Pubmed Data : PLoS Biol. 2018 10 ;16(10):e3000018. Epub 2018 Oct 2. PMID: 30278038

Article Published Date : Jan 10, 2018

Authors : Lukas Landler, David A Keays

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation modulates the ETS oncogene in vivo.

Pubmed Data : In Vivo. 2001 Nov-Dec;15(6):489-94. PMID: 11887334

Article Published Date : Nov 01, 2001

Authors : N Mucci, A Ianni, C L Ursini, D Arzani, N K Bhat, P Navarra, V Romano-Spica

Study Type : Animal Study
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Epidemiological studies document an increased incidence of cancers among long-term users of mobile phones which is supported by mechanistic evidence

Pubmed Data : Exp Oncol. 2010 Jul ;32(2):54-60. PMID: 20693976

Article Published Date : Jul 01, 2010

Authors : I Yakymenko, E Sidorik

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Oxidant : CK(122) : AC(48)

Evaluation of current studies suggests that electromagnetic fields may represent a serious source of concern and may be hazardous to living organisms.

Pubmed Data : Environ Res. 2018 05 ;163:71-79. Epub 2018 Feb 22. PMID: 29427953

Article Published Date : Jan 01, 2018

Authors : Adem Kocaman, Gamze Altun, Arife Ahsen Kaplan, Ömür Gülsüm Deniz, Kıymet Kübra Yurt, Süleyman Kaplan

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Exposure to electromangetic fields may increase the risk of cancers, especially in young individuals, and existing standard are not adequate to protect populations.

Pubmed Data : Rev Environ Health. 2010 Jan-Mar;25(1):75-80. PMID: 20429163

Article Published Date : Jan 01, 2010

Authors : David O Carpenter

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Cardiac Stress Test: Nuclear (Technetium-99m) : CK(10) : AC(1) , Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Extremely low frequency electromagnetic fields may enhance the carcinogenic effects of other carcinogens.

Pubmed Data : Environ Res. 2018 07 ;164:271-279. Epub 2018 Mar 20. PMID: 29549848

Article Published Date : Jan 01, 2018

Authors : L Bua, E Tibaldi, L Falcioni, M Lauriola, L De Angelis, F Gnudi, M Manservigi, F Manservisi, I Manzoli, I Menghetti, R Montella, S Panzacchi, D Sgargi, V Strollo, A Vornoli, D Mandrioli, F Belpoggi

Study Type : Animal Study
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Extremely low frequency magnetic fields should be considered an occupational carcinogen.

Pubmed Data : Environ Health Perspect. 2005 Nov ;113(11):A726-7; author reply A727. PMID: 16263490

Article Published Date : Nov 01, 2005

Authors : Kjell Hanson Mild, Mats-Olof Mattsso, Lennart Hardell, Joseph D Bowman, Michael Kundi

Study Type : Review
Additional Links

Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

GSM mobile phone radiation induces the expression of Epstein-Barr virus early antigens which are linked to various cancers.

Pubmed Data : Biomed Environ Sci. 2013 Jan ;26(1):76-8. PMID: **23294619**

Article Published Date : Jan 01, 2013

Authors : Yang Liu, Ming Lian Wang, Ru Gang Zhong, Xue Mei Ma, Qun Wang, Yi Zeng

Study Type : Human In Vitro
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Epstein-Barr Virus Infections : CK(132) : AC(47)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Radiofrequency radiation induces a wide range of adverse health effects, as substantiated by a significant body of literature.

Pubmed Data : Front Public Health. 2019 ;7:223. Epub 2019 Aug 13. PMID: **31457001**

Article Published Date : Jan 01, 2019

Authors : Anthony B Miller, Margaret E Sears, L Lloyd Morgan, Devra L Davis, Lennart Hardell, Mark Oremus, Colin L Soskolne

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78)

Recent studies show there are large errors and/or major shortcomings in the studies claiming no link between mobile phone and brain cancer. This commentary

criticizes the INTEROCC study's methodology.

Pubmed Data : Environ Int. 2018 12 ;121(Pt 1):1024. Epub 2018 Aug 24. PMID: 30146273

Article Published Date : Jan 12, 2018

Authors : S M J Mortazavi

Study Type : Commentary
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Some scientists view data on the health effects of electromagnetic fields as strongly suggestive and argue that if the association is true, the ubiquity of exposure may be resulting in a marked underestimation of the actual risk.

Pubmed Data : Mt Sinai J Med. 1995 Oct ;62(5):356-9. PMID: 7500965

Article Published Date : Oct 01, 1995

Authors : D Wartenberg

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

The Working Group has classified radiofrequency electromagnetic fields as possibly carcinogenic to humans.

Pubmed Data : Lancet Oncol. 2011 Jul ;12(7):624-6. PMID: 21845765

Article Published Date : Jul 01, 2011

Authors : Robert Baan, Yann Grosse, Béatrice Lauby-Secretan, Fatiha El Ghissassi, Véronique Bouvard, Lamia Benbrahim-Tallaa, Neela Guha, Farhad Islami, Laurent Galichet, Kurt Straif,

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Additional Keywords : Cancers : CK(7) : AC(3) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

The current study found that there is possible evidence linking mobile phone use to an increased risk of tumors from a meta-analysis of low-biased case-control studies.

Pubmed Data : J Clin Oncol. 2009 Nov 20 ;27(33):5565-72. Epub 2009 Oct 13. PMID: 19826127

Article Published Date : Nov 20, 2009

Authors : Seung-Kwon Myung, Woong Ju, Diana D McDonnell, Yeon Ji Lee, Gene Kazinets, Chih-Tao Cheng, Joel M Moskowitz

Study Type : Meta Analysis
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

The findings suggest that young persons exposed to high levels of radiofrequency/microwave radiation for long periods in settings where preventive measures were lax were at increased risk for cancer.

Pubmed Data : Int J Occup Environ Health. 2000 Jul-Sep;6(3):187-93. PMID: 10926722

Article Published Date : Jul 01, 2000

Authors : E Richter, T Berman, E Ben-Michael, R Laster, J B Westin

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The result of current research suggest it is necessary to use precautionary principles to prevent adverse health effects associated with electromagnetic fields.

Pubmed Data : Ind Health. 2019;57(4):403-405. PMID: 31378769

Article Published Date : Jan 01, 2019

Authors : Alicja Bortkiewicz

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The surrogate markers used to estimate exposure to electromagnetic fields are notoriously inaccurate and may produce an underestimation of the true risk associated with electromagnetic fields.

Pubmed Data : Environ Health Perspect. 1991 Nov ;95:147-56. PMID: 1821368

Article Published Date : Nov 01, 1991

Authors : M N Bates

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Leukemia : CK(1284) : AC(586)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

There is a possible risk of glioma in the most heavily exposed part of the brain with long-term cell phone use.

Pubmed Data : Int J Cancer. 2007 Apr 15 ;120(8):1769-75. PMID: 17230523

Article Published Date : Apr 15, 2007

Authors : Anna Lahkola, Anssi Auvinen, Jani Raitanen, Minouk J Schoemaker, Helle C Christensen, Maria Feychting, Christoffer Johansen, Lars Klaeboe, Stefan Lönn, Anthony J Swerdlow, Tore Tynes, Tiina Salminen

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Glioma : CK(333) : AC(169)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

These results suggest an association between cellular phone use and salivary gland tumors.

Pubmed Data : Am J Epidemiol. 2008 Feb 15 ;167(4):457-67. Epub 2007 Dec 6. PMID: 18063591

Article Published Date : Feb 15, 2008

Authors : Siegal Sadetzki, Angela Chetrit, Avital Jarus-Hakak, Elisabeth Cardis, Yonit Deutch, Shay Duvdevani, Ahuva Zultan, Ilya Novikov, Laurence Freedman, Michael Wolf

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This article emphasizes the need for new parameters of electromagnetic exposure in light of evidence that suggests mobile phone use longer than 10 years increases the risk for brain tumors.

Pubmed Data : Biomed Pharmacother. 2008 Feb ;62(2):104-9. Epub 2007 Dec 31. PMID: 18242044

Article Published Date : Feb 01, 2008

Authors : Lennart Hardell, Cindy Sage

Study Type : Review
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers : CK(7) : AC(3)
Additional Keywords : Cancers : CK(7) : AC(3) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This commentary criticizes the shortcomings of a study that found no connection between radiofrequency electromagnetic field exposure, cancers, and brain tumors.

Pubmed Data : Sci Total Environ. 2017 12 31 ;609:1. Epub 2017 Jul 26. PMID: 28732291

Article Published Date : Jan 31, 2017

Authors : S A R Mortazavi, Ghazal Mortazavi, S M J Mortazavi

Study Type : Commentary
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This paper reviews research that points to an association between elecromagnetic fields and cancer.

Pubmed Data : Oncology (Williston Park). 1996 Apr ;10(4):563-70; discussion 573-4, 577-8. PMID: 8723289

Article Published Date : Apr 01, 1996

Authors : J R Salvatore, A B Weitberg, S Mehta

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This review discusses the use of systems biology in understanding the biological effects of electromagnetic fields, with particular focus on induction of genomic instability and cancer.

Pubmed Data : Genes (Basel). 2019 06 25 ;10(6). Epub 2019 Jun 25. PMID: 31242701

Article Published Date : Jan 25, 2019

Authors : Jonne Naarala, Mikko Kolehmainen, Jukka Juutilainen

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78)

This review examines in vitro and in vivo and epidemiological works that gave a new insight about the

effect of radio frequency exposure, relating to intracellular molecular pathways that lead to biological and functional outcomes.

Pubmed Data : Int J Mol Sci. 2014 Mar 27 ;15(4):5366-87. Epub 2014 Mar 27. PMID: 24681584

Article Published Date : Mar 27, 2014

Authors : Lisa Gherardini, Gastone Ciuti, Selene Tognarelli, Caterina Cinti

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review outlines mechanisms that underpin electromagnetic field's effects on human health.

Pubmed Data : Pediatr Ann. 2017 Apr 1 ;46(4):e172-e174. PMID: 28414399

Article Published Date : Apr 01, 2017

Authors : Tayaba Miah, Deepak Kamat

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This review synthesizes the evidence of the carcinogenic effects of magnetic fields according to animal and cellular studies.

Pubmed Data : Environ Health Perspect. 1995 Mar ;103 Suppl 2:63-7. PMID: 7614950

Article Published Date : Mar 01, 1995

Authors : B Holmberg

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2) , Tumorigenic : CK(16) : AC(11)

This study emphasizes the need for a DNA-based biological electromagnetic field exposure threshold and outlines the changes to DNA that can occur even at extremely low levels of exposure.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):71-8. Epub 2009 Mar 5. PMID: 19268550

Article Published Date : Aug 01, 2009

Authors : Martin Blank, Reba Goodman

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Cancers: All : CK(22165) : AC(7896) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Mutagenic : CK(24) : AC(13)

This study found a consistent association between radiofrequency radiation and elevated risk of hematolymphatic cancers.

Pubmed Data : Environ Res. 2018 05 ;163:123-133. Epub 2018 Feb 22. PMID: 29433020

Article Published Date : Jan 01, 2018

Authors : Michael Peleg, Or Nativ, Elihu D Richter

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study found an association between increased childhood leukemia incidence and mortality and proximity to TV towers.

Pubmed Data : Med J Aust. 1996 Dec 2-16;165(11-12):601-5. PMID: 8985435

Article Published Date : Dec 02, 1996

Authors : B Hocking, I R Gordon, H L Grain, G E Hatfield

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study observed higher mortality rates for all cancers and leukemia in some age groups in the area near the AM radio broadcasting towers.

Pubmed Data : Int Arch Occup Environ Health. 2004 Aug ;77(6):387-94. Epub 2004 Jul 31. PMID: 15338224

Article Published Date : Aug 01, 2004

Authors : Sue Kyung Park, Mina Ha, Hyung-Jun Im

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Additional Keywords : Cancers : CK(7) : AC(3) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This study replicates the findings of a previous study demonstrating an increased risk of childhood leukemia associated with powerlines within a proximity of 600km.

Pubmed Data : Br J Cancer. 2014 Mar 4 ;110(5):1402-8. Epub 2014 Feb 6. PMID: 24504371

Article Published Date : Mar 04, 2014

Authors : K J Bunch, T J Keegan, J Swanson, T J Vincent, M F G Murphy

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study showed an association between mobile phone use and salivary gland tumors.

Pubmed Data : Gulf J Oncolog. 2016 Jan ;1(20):71-8. PMID: 27050182

Article Published Date : Jan 01, 2016

Authors : K Al-Qahtani

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Cancers: All (AC 11) (CK 78)

ELF-EMF can negatively modulate cancer cell growth increasing respiratory activity of cells and altering mitochondrial protein expression.

Pubmed Data : Int J Radiat Biol. 2015 Dec ;91(12):964-72. Epub 2015 Nov 17. PMID: 26762464

Article Published Date : Nov 30, 2015

Authors : Michele Destefanis, Marta Viano, Christian Leo, Gianpiero Gervino, Antonio Ponzetto, Francesca Silvagno

Study Type : In Vitro Study
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

ELF-EMFs are associated with cancer risk, mainly in the United States and in residential exposed populations.

Pubmed Data : Environ Int. 2016 Mar ;88:36-43. Epub 2015 Dec 15. PMID: 26703095

Article Published Date : Feb 29, 2016

Authors : Yemao Zhang, Jinsheng Lai, Guoran Ruan, Chen Chen, Dao Wen Wang

Study Type : Meta Analysis
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Exposure to electromagnetic fields below the exposure limits for humans results in significantly more tumor formation in the lungs and livers of exposed animals compared to controls.

Pubmed Data : Biochem Biophys Res Commun. 2015 Apr 17 ;459(4):585-90. Epub 2015 Mar 6. PMID: **25749340**

Article Published Date : Apr 17, 2015

Authors : Alexander Lerchl, Melanie Klose, Karen Grote, Adalbert F X Wilhelm, Oliver Spathmann, Thomas Fiedler, Joachim Streckert, Volkert Hansen, Markus Clemens

Study Type : Animal Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Tumorigenic : CK(16) : AC(11)

Flight personnel appear to be at increased risk for several types of cancer, possibly as a result of exposure to cosmic radiation and other physical or chemical agents,

Pubmed Data : Aviat Space Environ Med. 2000 Mar ;71(3):216-24. PMID: **10716165**

Article Published Date : Mar 01, 2000

Authors : T Ballard, S Lagorio, G De Angelis, A Verdecchia

Study Type : Meta Analysis
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cancers: All : CK(22165) : AC(7896) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

Mortality by neoplasia and cellular telephone base stations in the Belo Horizonte municipality, Minas Gerais state, Brazil.

Pubmed Data : Sci Total Environ. 2011 Sep 1 ;409(19):3649-65. Epub 2011 Jul 13. PMID: **21741680**

Article Published Date : Aug 31, 2011

Authors : Adilza C Dode, Mônica M D Leão, Francisco de A F Tejo, Antônio C R Gomes, Daiana C Dode, Michael C Dode, Cristina W Moreira, Vânia A Condessa, Cláudia Albinatti, Waleska T Caiaffa

Study Type : Human Study
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Reported past occupational exposures to chemicals and possible electromagnetic field-emitting electronics were found to be strongly associated with increased cancer risks.

Pubmed Data : Pathophysiology. 2012 Feb ;19(1):21-8. Epub 2011 Aug 27. PMID: 21873036

Article Published Date : Feb 01, 2012

Authors : Iris Atzmon, Shai Linn, Elihu Richter, Boris A Portnov

Study Type : Human Study
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cancers: All : CK(22165) : AC(7896)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Pesticides : CK(827) : AC(95)

The study outlines the bias in the INTERPHONE studies.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):137-47. Epub 2009 Apr 7. PMID: 19356911

Article Published Date : Aug 01, 2009

Authors : L Lloyd Morgan

Study Type : Review
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This article points out that the Swedish Cancer Register, which is often used to refute epidemiological evidence of

cancer risk associated with electromagnetic fields, is unreliable.

Pubmed Data : Int J Environ Res Public Health. 2015 Apr 3 ;12(4):3793-813. Epub 2015 Apr 3. PMID: 25854296

Article Published Date : Apr 03, 2015

Authors : Lennart Hardell, Michael Carlberg

Study Type : Human Study
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This review indicates the need for reevaluation of the current method to assess the effects non-ionizing radiation on the body and strongly points to the need for re-elaboration of the current safety limits.

Pubmed Data : Exp Oncol. 2011 Jun ;33(2):62-70. PMID: 21716201

Article Published Date : Jun 01, 2011

Authors : I Yakymenko, E Sidorik, S Kyrylenko, V Chekhun

Study Type : Review
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896), Cancers: All : CK(22165) : AC(7896) , RF-EMF and Cancers : CK(4078) : AC(1287) , RF-EMF and Cancers : CK(4078) : AC(1287), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study emphasizes the need for a DNA-based biological electromagnetic field exposure threshold and outlines the changes to DNA that can occur even at extremely low levels of exposure.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):71-8. Epub 2009 Mar 5. PMID: 19268550

Article Published Date : Aug 01, 2009

Authors : Martin Blank, Reba Goodman

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Cancers: All : CK(22165) : AC(7896) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Mutagenic : CK(24) : AC(13)

This study supports the hypothesis that long-term exposure of 50 Hz magnetic fields is a significant risk factor for neoplastic development.

Pubmed Data : Environ Health Prev Med. 2015 Jul ;20(4):287-93. Epub 2015 May 5. PMID: 25939981

Article Published Date : Jun 30, 2015

Authors : Guangying Qi, Xiaoxu Zuo, Lihua Zhou, Eriko Aoki, Aya Okamula, Mika Watanebe, Haipeng Wang, Qiuhui Wu, Huiling Lu, Handan Tuncel, Hiromitsu Watanabe, Sien Zeng, Fumio Shimamoto

Study Type : Animal Study
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Cancers: Radiation-Induced (AC 1) (CK 10)

There is a concerning association between heavy mobile phone use and brain tumours.

Pubmed Data : Occup Environ Med. 2014 Jul ;71(7):514-22. Epub 2014 May 9. PMID: 24816517

Article Published Date : Jul 01, 2014

Authors : Gaëlle Coureau, Ghislaine Bouvier, Pierre Lebailly, Pascale Fabbro-Peray, Anne Gruber, Karen Leffondre, Jean-Sebastien Guillamo, Hugues Loiseau, Simone Mathoulin-Pélissier, Roger Salamon, Isabelle Baldi

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers: Radiation-Induced : CK(9) : AC(7)
Additional Keywords : Cancers: Radiation-Induced : CK(9) : AC(7) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Cardiovascular Diseases (AC 2) (CK 12)

Rats exposed to mobile phone radiation in utero have elevated biomarkers of oxidative stress and histopathological changes in heart tissue.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):390-7. Epub 2014 Aug 28. PMID: **25166431**

Article Published Date : Jan 01, 2015

Authors : Sibel Türedi, Hatice Hancı, Zehra Topal, Deniz Ünal, Tolga Mercantepe, İlyas Bozkurt, Haydar Kaya, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

These data show that the radiofrequency electromagnetic radiation contributes to adverse effects on the cardiovascular system.

Pubmed Data : Int J Hyg Environ Health. 2006 Mar ;209(2):133-8. Epub 2005 Nov 10. PMID: 16503299

Article Published Date : Mar 01, 2006

Authors : Katia Vangelova, Christo Deyanov, Mishel Israel

Study Type : Human Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Dyslipidemias : CK(638) : AC(150) , Hypertension : CK(4573) : AC(670)
Additional Keywords : Hypertension : CK(4573) : AC(670)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Celiac Disease (AC 1) (CK 1)

How microwave treatment of gluten affects its toxicity for celiac patients.

Pubmed Data : Food Chem. 2019 Nov 1 ;297:124986. Epub 2019 Jun 11. PMID: 31253255

Article Published Date : Oct 31, 2019

Authors : Hamida Mahroug, Miguel Ribeiro, Larbi Rhazi, Leila Bentallah, Mohammed Nasreddine Zidoune, Fernando M Nunes, Gilberto Igrejas

Study Type : In Vitro Study
Additional Links
Diseases : Celiac Disease : CK(1612) : AC(232)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Microwave Cooking : CK(49) : AC(28), Microwave Radiation : CK(8) : AC(4)

Cell Phone Induced Disease (AC 2) (CK

4)

900 MHz radiation emitted from mobile/cellular phones can be an agent to alter some biomolecules such as brain protein.

Pubmed Data : Electromagn Biol Med. 2012 Jan 23. Epub 2012 Jan 23. PMID: 22268730

Article Published Date : Jan 23, 2012

Authors : Suleyman Dasdag, Mehmet Zulkuf Akdag, Goksel Kizil, Murat Kizil, Dilek Ulker Cakir, Beran Yokus

Study Type : Animal Study
Additional Links
Diseases : Cell Phone Induced Disease : CK(16) : AC(4) , Neurodegenerative Diseases : CK(6185) : AC(1785)
Additional Keywords : Undefined : CK(14) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Exposure to microwave radiation from cellular phones during pregnancy has certain harm on fetal rat brains.

Pubmed Data : Electromagn Biol Med. 2012 Jan 23. Epub 2012 Jan 23. PMID: 22268709

Article Published Date : Jan 23, 2012

Authors : Ji Jing, Zhang Yuhua, Yang Xiao-Qian, Jiang Rongping, Guo Dong-Mei, Cui Xi

Study Type : Animal Study
Additional Links
Diseases : Cell Phone Induced Disease : CK(16) : AC(4) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Prenatal Radiation Exposure : CK(16) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Cell-Phone and Computer Screen Radiotoxicity (AC 1) (CK 1)

916 MHz microwave radiation induces neoplastic

transformation in cells.

Pubmed Data : Cell Mol Neurobiol. 2012 Mar 7. Epub 2012 Mar 7. PMID: 22395787

Article Published Date : Mar 07, 2012

Authors : Lei Yang, Dongmei Hao, Minglian Wang, Yi Zeng, Shuicai Wu, Yanjun Zeng

Study Type : In Vitro Study
Additional Links
Diseases : Cell-Phone and Computer Screen Radiotoxicity : CK(116) : AC(20) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144)

Central Nervous System Diseases (AC 1) (CK 1)

Radiofrequency electromagnetic felds can induce changes in the central nervous system.

Pubmed Data : Biomol Ther (Seoul). 2019 May 1 ;27(3):265-275. PMID: 30481957

Article Published Date : May 01, 2019

Authors : Ju Hwan Kim, Jin-Koo Lee, Hyung-Gun Kim, Kyu-Bong Kim, Hak Rim Kim

Study Type : Review
Additional Links
Diseases : Central Nervous System Diseases : CK(6) : AC(6)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Chemotherapy-Induced Toxicity: Bleomycin (AC 1) (CK 1)

These studies investigate micronuclei formation at different specific absorption rates, in conjunction with bleomycin, for 18 hours.

Pubmed Data : Mutat Res. 2003 Nov 10 ;541(1-2):81-9. PMID: 14568297

Article Published Date : Nov 10, 2003

Authors : Shin Koyama, Takehisa Nakahara, Kanako Wake, Masao Taki, Yasuhito Isozumi, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : Chemotherapy-Induced Toxicity: Bleomycin : CK(60) : AC(25) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

Child Behavior Disorders (AC 2) (CK 12)

Repeated exposure to pulsed LTE radiofrequency fields in early life may have a long-term effect on adult behavior.

Pubmed Data : Bioelectromagnetics. 2019 Oct ;40(7):498-511. Epub 2019 Sep 15. PMID: 31522469

Article Published Date : Oct 01, 2019

Authors : Kerry A Broom, Richard Findlay, Darren S Addison, Cristian Goiceanu, Zenon Sienkiewicz

Study Type : Animal Study
Additional Links
Diseases : Child Behavior Disorders : CK(10) : AC(1)
Additional Keywords : Child Behavior Disorders : CK(10) : AC(1) , Child Behavior Disorders : CK(10) : AC(1), Child Behavior Disorders : CK(10) : AC(1) , Child Behavior Disorders : CK(10) : AC(1) , Child Behavior Disorders : CK(10) : AC(1), Child Behavior Disorders : CK(10) : AC(1) , Child Behavior Disorders : CK(10) : AC(1), Child Behavior Disorders : CK(10) : AC(1) , Child Behavior Disorders : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study replicates the findings of a previous study that indicate cell phone use may be associated with behavioral problems in young children.

Pubmed Data : J Epidemiol Community Health. 2012 Jun ;66(6):524-9. Epub 2010 Dec 7. PMID: 21138897

Article Published Date : Jun 01, 2012

Authors : Hozefa A Divan, Leeka Kheifets, Carsten Obel, Jørn Olsen

Study Type : Human Study
Additional Links
Diseases : Child Behavior Disorders : CK(10) : AC(1)
Additional Keywords : Child Behavior Disorders : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Chronic Myeloid Leukemia (AC 1) (CK 10)

Myeloid leukemia was associated with benzene, a nonspecific group of solvents, occupational pesticides, and working with or near powerlines.

Pubmed Data : Ann Hematol. 2009 Nov ;88(11):1079-88. Epub 2009 Mar 18. PMID: 19294385

Article Published Date : Nov 01, 2009

Authors : David W Kaufman, Theresa E Anderson, Surapol Issaragrisil

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Chronic Myeloid Leukemia : CK(31) : AC(16) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Problem Substances : Benzene : CK(142) : AC(24) , Pesticides : CK(827) : AC(95)

Chronic Pain (AC 1) (CK 2)

Chronic intermittent exposure to AM radiofrequency fields alters pain sensation in growing rats.

Pubmed Data : Bioelectromagnetics. 2006 Feb ;27(2):105-11. PMID: 16283665

Article Published Date : Feb 01, 2006

Authors : Sung-Ho Kim, Hae-June Lee, Soo-Yong Choi, Youn-Myoung Gimm, Jeong-Ki Pack, Hyung-Do Choi, Yun-Sil Lee

Study Type : Animal Study
Additional Links
Diseases : Chronic Pain : CK(206) : AC(33)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Circadian Dysregulation (AC 3) (CK 4)

Despite divergences in the reported results, ELF-MF and radio frequency electromagnetic field have to be considered as factors possibly influencing the circadian system function.

Pubmed Data : Biomed Res Int. 2014 ;2014:169459. Epub 2014 Jul 22. PMID: 25136557

Article Published Date : Jan 01, 2014

Authors : Bogdan Lewczuk, Grzegorz Redlarski, Arkadiusz Zak, Natalia Ziółkowska, Barbara Przybylska-Gornowicz, Marek Krawczuk

Study Type : Review
Additional Links
Diseases : Circadian Dysregulation : CK(165) : AC(34)
Additional Keywords : Circadian Rhythm : CK(23) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Melatonin Interference : CK(2) : AC(2)

Man-made radiofrequency (RF) electromagnetic fields have been shown to have effects on animal orientation responses.

Pubmed Data : J R Soc Interface. 2019 Sep 27 ;16(158):20190285. Epub 2019 Sep 18. PMID: 31530135

Article Published Date : Sep 27, 2019

Authors : Premysl Bartos, Radek Netusil, Pavel Slaby, David Dolezel, Thorsten Ritz, Martin Vacha

Study Type : Insect Study
Additional Links
Diseases : Circadian Dysregulation : CK(165) : AC(34)
Additional Keywords : Circadian Dysregulation : CK(165) : AC(34) , Circadian Dysregulation : CK(165) : AC(34)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)

This review outlines the overlooked mechanisms of electromagnetic field damage and the critical role Earth's natural electromagnetic signaling plays in the biology of the human body.

Pubmed Data : Rev Environ Health. 2015 ;30(4):293-303. PMID: 26368042

Article Published Date : Jan 01, 2015

Authors : Cindy Sage

Study Type : Review
Additional Links
Diseases : Circadian Dysregulation : CK(165) : AC(34) , Electrosensitivity : CK(11) : AC(2) , Multiple Chemical Sensitivity : CK(34) : AC(5)
Additional Keywords : Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4), Circadian Rhythm : CK(23) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Cognitive Decline/Dysfunction (AC 38)

(CK 251)

916 MHz electromagnetic fields influence learning and memory in rats to some extent in a period during exposure.

Pubmed Data : Neurol Sci. 2013 Feb ;34(2):157-64. Epub 2012 Feb 24. PMID: 22362331

Article Published Date : Feb 01, 2013

Authors : Dongmei Hao, Lei Yang, Su Chen, Jun Tong, Yonghao Tian, Benhang Su, Shuicai Wu, Yanjun Zeng

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

A lack of attention and concentration may occur in subjects who talk on mobile phones for longer times, compared to those who use phones relatively less.

Pubmed Data : J Microsc Ultrastruct. 2017 Oct-Dec;5(4):191-197. Epub 2017 Jul 13. PMID: 30023254

Article Published Date : Sep 30, 2017

Authors : Omur Gulsum Deniz, Suleyman Kaplan, Mustafa Bekir Selçuk, Murat Terzi, Gamze Altun, Kıymet Kübra Yurt, Kerim Aslan, Devra Davis

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Acute low-level exposure to microwaves modulated at 7 Hz can affect cognitive processes such as attention and short-term memory in humans.

Pubmed Data : Int J Radiat Biol. 2002 Oct ;78(10):937-44. PMID: 12465659

Article Published Date : Oct 01, 2002

Authors : J Lass, V Tuulik, R Ferenets, R Riisalo, H Hinrikus

Study Type : Human Study
Additional Links

Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Chronic low-intensity microwave exposure in the frequency range of 900 to 2450 MHz leads to cognitive decline and DNA damage in rats.

Pubmed Data : Int J Toxicol. 2015 May-Jun;34(3):284-90. Epub 2015 Mar 5. PMID: 25749756

Article Published Date : May 01, 2015

Authors : Pravin Suryakantrao Deshmukh, Namita Nasare, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Digvijay Singh, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Neurotoxic : CK(1458) : AC(323)

Chronic microwave exposure could induce cognitive deficit, possibly through alterations in the serotonergic system.

Pubmed Data : Physiol Behav. 2015 Mar 1 ;140:236-46. Epub 2014 Dec 24. PMID: 25542888

Article Published Date : Mar 01, 2015

Authors : Hai-Juan Li, Rui-Yun Peng, Chang-Zhen Wang, Si-Mo Qiao, Zou Yong, Ya-Bing Gao, Xin-Ping Xu, Shao-Xia Wang, Ji Dong, Hong-Yan Zuo, Zhao Li, Hong-Mei Zhou, Li-Feng Wang, Xiang-Jun Hu

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

EMF modulates the responses of EEG oscillatory activity during cognitive processes.

Pubmed Data : Int J Radiat Biol. 2000 Dec ;76(12):1659-67. PMID: **11133048**

Article Published Date : Dec 01, 2000

Authors : C M Krause, L Sillanmäki, M Koivisto, A Häggqvist, C Saarela, A Revonsuo, M Laine, H Hämäläinen

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Electrohypersensitive persons in this study were suffering not only from their symptoms, but also from economical and social problems.

Pubmed Data : Pathophysiology. 2012 Apr ;19(2):95-100. Epub 2012 Mar 27. PMID: **22458999**

Article Published Date : Apr 01, 2012

Authors : Yasuko Kato, Olle Johansson

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Electromagnetic radiation exposure may induce cognitive impairment and sleep disorders.

Pubmed Data : Toxicol Ind Health. 2018 Oct 21:748233718798975. Epub 2018 Oct 21. PMID: **30345898**

Article Published Date : Oct 20, 2018

Authors : Nawal A Ahmed, Nasr M Radwan, Heba S Aboul Ezz, Yasser A Khadrawy, Noha A Salama

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Exposure a 900 MHz electromagnetic field results in reduced performance in sleep-dependent motor-sequence tasks in healthy subjects compared to controls.

Pubmed Data : Brain Stimul. 2013 Sep ;6(5):805-11. Epub 2013 Feb 24. PMID: 23482083

Article Published Date : Sep 01, 2013

Authors : Caroline Lustenberger, Manuel Murbach, Roland Dürr, Marc Ralph Schmid, Niels Kuster, Peter Achermann, Reto Huber

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Exposure to a continuous TETRA-like signal may lead to fatigue and trouble concentrating.

Pubmed Data : Occup Environ Med. 2011 May ;68(5):339-44. Epub 2010 Sep 23. PMID: 20864469

Article Published Date : May 01, 2011

Authors : Rosa Nieto-Hernandez, Jonathan Williams, Anthony J Cleare, Sabine Landau, Simon Wessely, G James Rubin

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49)
Additional Keywords : Fatigue : CK(312) : AC(49)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Exposure to radiation from a mobile phone base is associated with lack of appetite, lack of concentration, irritability, and trouble sleeping.

Pubmed Data : BMJ Open. 2013 Dec 30 ;3(12):e003836. Epub 2013 Dec 30. PMID: 24381254

Article Published Date : Dec 30, 2013

Authors : Claudio Gómez-Perretta, Enrique A Navarro, Jaume Segura, Manuel Portolés

Study Type : Human Study

Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Exposures to extremely low frequency magnetic field induces serious oxidative stress in the hippocampus and striatum and impaired hippocampal-dependent spatial learning and striatum-dependent habit learning in rats.

Pubmed Data : PLoS One. 2012 ;7(5):e32196. Epub 2012 May 3. PMID: 22570685

Article Published Date : Jan 01, 2012

Authors : Yonghua Cui, Zhiqiang Ge, Joshua Dominic Rizak, Chao Zhai, Zhu Zhou, Songjie Gong, Yi Che

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323), Oxidant : CK(122) : AC(48)

Headaches, sleep disorders, nervousness, fatigue, and concentration were the most commonly reported complaints among electromagnetic field-exposed individuals in this questionnaire study.

Pubmed Data : Int J Hyg Environ Health. 2004 Feb ;207(2):141-50. PMID: 15031956

Article Published Date : Feb 01, 2004

Authors : Martin Röösli, Mirjana Moser, Yvonne Baldinini, Martin Meier, Charlotte Braun-Fahrländer

Study Type : Human Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215), Cognitive Decline/Dysfunction : CK(2113) : AC(426), Fatigue : CK(312) : AC(49), Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic

Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Health care workers using MRIs reported a high prevalence of subjective symptoms associated with MRI exposure.

Pubmed Data : Electromagn Biol Med. 2015 Sep ;34(3):262-4. PMID: 26444203

Article Published Date : Sep 01, 2015

Authors : G Zanotti, G Ligabue, F Gobba

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Dizziness : CK(1) : AC(1) , Fatigue : CK(312) : AC(49), Headache : CK(785) : AC(92) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Large numbers of young people report impaired concentration and headache. The authors conclude electromagnetic field exposure cannot be ruled out.

Pubmed Data : Pol Merkur Lekarski. 2005 Oct ;19(112):529-32. PMID: 16379318

Article Published Date : Oct 01, 2005

Authors : Agata Szyjkowska, Alicja Bortkiewicz, Wiesław Szymczak, Teresa Makowiec-Dabrowska

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Long-term 1.8 GHZ RF-EMF induces memory impairments in rats that persist 2 weeks after radiation.

Pubmed Data : Electromagn Biol Med. 2013 Mar ;32(1):95-120. Epub 2013 Jan 15. PMID: 23320614

Article Published Date : Mar 01, 2013

Authors : Maria P Ntzouni, Aikaterini Skouroliakou, Nikolaos Kostomitsopoulos, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Male rats exposed to 9.4GHz microwave radiation in utero exhibit postnatal decreased learning and memory.

Pubmed Data : J Radiat Res. 2015 Mar ;56(2):261-8. Epub 2014 Oct 30. PMID: **25359903**

Article Published Date : Mar 01, 2015

Authors : Yanchun Zhang, Zhihui Li, Yan Gao, Chenggang Zhang

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53)
Additional Keywords : Learning disorders : CK(194) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)

Mobile phone electromagnetic field radiation may impact cognition associated with alpha-band oscillations in the human brain.

Pubmed Data : J Neurophysiol. 2015 Apr 1 ;113(7):2753-9. Epub 2015 Feb 18. PMID: **25695646**

Article Published Date : Apr 01, 2015

Authors : Rania Ghosn, Lydia Yahia-Cherif, Laurent Hugueville, Antoine Ducorps, Jean-Didier Lemaréchal, György Thuróczy, René de Seze, Brahim Selmaoui

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Mobile phone radiation exposure increases oxidative stress as evidenced by increased protein carbonyl and malondialdehyde, coupled with impaired cognition.

Pubmed Data : Indian J Biochem Biophys. 2013 Apr ;50(2):114-9. PMID: 23720885

Article Published Date : Apr 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Basu Dev Banerjee, Mahesh Pandurang Abegaonkar, Kanu Megha, Rafat Sultana Ahmed, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Oxidant : CK(122) : AC(48)

Mobile phone use may be associated with the headaches, memory and cognitive impairment, fatigue, and sleeplessness experienced by medical students.

Pubmed Data : Int J Occup Med Environ Health. 2008 ;21(4):289-93. PMID: 19228576

Article Published Date : Jan 01, 2008

Authors : Muhammad Mujahid Khan

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Hearing Disorders : CK(1) : AC(1) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Mobile phone use may impact cognition.

Pubmed Data : Occup Environ Med. 2010 Dec ;67(12):861-6. Epub 2010 Aug 25. PMID: 20798018

Article Published Date : Dec 01, 2010

Authors : S Thomas, G Benke, C Dimitriadis, I Inyang, M R Sim, R Wolfe, R J Croft, M J Abramson

Study Type : Human Study

Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Mobile phone use was associated with faster and less accurate responding to higher level cognitive tasks.

Pubmed Data : Bioelectromagnetics. 2009 Dec ;30(8):678-86. PMID: 19644978

Article Published Date : Dec 01, 2009

Authors : Michael J Abramson, Geza P Benke, Christina Dimitriadis, Imo O Inyang, Malcolm R Sim, Rory S Wolfe, Rodney J Croft

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Nano-selenium protects cognition in rats exposed to 1800 MHz radiation.

Pubmed Data : Wei Sheng Yan Jiu. 2014 Jan ;43(1):16-21. PMID: 24564105

Article Published Date : Jan 01, 2014

Authors : Fenju Qin, Hongxia Yuan, Jihua Nie, Yi Cao, Jian Tong

Study Type : Review
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Prepubescent rats exposed to chronic radiofrequency electromagnetic radiation exhibit learning and memory dysfunction attributed to structural brain changes and decreased viable hippocampal cell count.

Pubmed Data : Metab Brain Dis. 2015 Oct ;30(5):1193-206. Epub 2015 Jun 3. PMID: 26033310

Article Published Date : Oct 01, 2015

Authors : Sareesh Naduvil Narayanan, Raju Suresh Kumar, Kalesh M Karun, Satheesha B Nayak, P Gopalakrishna Bhat

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53), Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Pulsed electromagnetic radiation alters levels of serotonin, dopamine, and norepinephrine in various areas of the rat brain.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2013 Jul ;17(13):1782-8. PMID: 23852905

Article Published Date : Jul 01, 2013

Authors : H S Aboul Ezz, Y A Khadrawy, N A Ahmed, N M Radwan, M M El Bakry

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Serotonin Down-Regulation : CK(2) : AC(1)

Rats born to mothers exposed to mobile phone radiation exhibit altered electrophysiological properties of CA1 pyramidal neurons, deleteriously impacting cognition.

Pubmed Data : Toxicol Ind Health. 2016 Jun ;32(6):968-79. Epub 2014 Mar 6. PMID: 24604340

Article Published Date : Jun 01, 2016

Authors : Moazamehosadat Razavinasab, Kasra Moazzami, Mohammad Shabani

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53)

Additional Keywords : Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Rats exposed to mobile phone radiation present with higher oxidative stress, reduced antioxidant activity, and extensive neurodegeneration in the brain.

Pubmed Data : Neurol Res. 2014 Dec ;36(12):1072-9. Epub 2014 May 26. PMID: **24861496**

Article Published Date : Dec 01, 2014

Authors : Nidhi Saikhedkar, Maheep Bhatnagar, Ayushi Jain, Pooja Sukhwal, Chhavi Sharma, Neha Jaiswal

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Brain: Oxidative Stress : CK(79) : AC(46) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Reduced hippocampal glucose uptake may be associated with cognitive impairment caused by microwave exposure.

Pubmed Data : Physiol Behav. 2012 Jul 16 ;106(5):631-7. Epub 2012 Apr 28. PMID: **22564535**

Article Published Date : Jul 16, 2012

Authors : Yonghui Lu, Shangcheng Xu, Mindi He, Chunhai Chen, Lei Zhang, Chuan Liu, Fang Chu, Zhengping Yu, Zhou Zhou, Min Zhong

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Short term electromagnetic field exposure may not have an effect on mood, cognitive function, sleep, or overall wellbeing.

Pubmed Data : Environ Res. 2015 Jul ;140:85-94. Epub 2015 Mar 31. PMID: 25839715

Article Published Date : Jul 01, 2015

Authors : Cornelia Sauter, Torsten Eggert, Hans Dorn, Gernot Schmid, Thomas Bolz, Alexander Marasanov, Marie-Luise Hansen, Anita Peter, Heidi Danker-Hopfe

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

The results of this animal study suggest that low level microwave exposure at frequencies of 900, 1800, and 2450 MHz may lead to hazardous effects on brain.

Pubmed Data : Biomed Environ Sci. 2016 Dec ;29(12):858-867. PMID: 28081746

Article Published Date : Dec 01, 2016

Authors : Pravin Suryakantrao Deshmukh, Kanu Megha, Namita Nasare, Basu Dev Banerjee, Rafat Sultana Ahmed, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The results of this study indicate that working in an occupation with high or medium-high magnetic field exposure may increase the risk of severe cognitive dysfunction.

Pubmed Data : Br J Med Med Res. 2014 Apr 16 ;4(8):1641-1662. PMID: 24839595

Article Published Date : Apr 16, 2014

Authors : Zoreh Davanipour, Chiu-Chen Tseng, Pey-Jiuan Lee, Kyriakos S Markides, Eugene Sobel

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

These results indicate that working near a 1.5 Tesla MRI system may elicit neurobehavioral effects.

Pubmed Data : Magn Reson Med. 2003 Oct ;50(4):670-4. PMID: 14523950

Article Published Date : Oct 01, 2003

Authors : Frank de Vocht, Berna van-Wendel-de-Joode, Hans Engels, Hans Kromhout

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This cohort study demonstrates a potential adverse effect of microwave radiofrequency electromagnetic fields on cognitive function that involve brain regions mostly exposed during mobile phone use.

Pubmed Data : Environ Health Perspect. 2018 07 ;126(7):077007. Epub 2018 Jul 23. PMID: 30044230

Article Published Date : Jan 01, 2018

Authors : Milena Foerster, Arno Thielens, Wout Joseph, Marloes Eeftens, Martin Röösli

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This prospective cohort study in adolescents indicates that RF-EMF exposure may affect memory performance.

Pubmed Data : Environ Int. 2015 Dec ;85:343-51. Epub 2015 Oct 30. PMID: 26474271

Article Published Date : Dec 01, 2015

Authors : Anna Schoeni, Katharina Roser, Martin Röösli

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

This study found an association between mobile phone use and especially headache, concentration difficulties, fatigue, sleep disturbances and warming of the ear in a dose-response manner.

Pubmed Data : Environ Health. 2017 06 2 ;16(1):51. Epub 2017 Jun 2. PMID: 28577556

Article Published Date : Jan 02, 2017

Authors : Raika Durusoy, Hür Hassoy, Ahmet Özkurt, Ali Osman Karababa

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This study indicates that impairment of LTP induction and damages of hippocampal structure may contribute to the cognitive dysfunction associated with microwave exposure.

Pubmed Data : Int J Radiat Biol. 2013 Dec ;89(12):1100-7. Epub 2013 Jul 24. PMID: 23786183

Article Published Date : Dec 01, 2013

Authors : Hui Wang, Ruiyun Peng, Hongmei Zhou, Shuiming Wang, Yabing Gao, Lifeng Wang, Zheng Yong, Hongyan Zuo, Li Zhao, Ji Dong, Xinping Xu, Zhentao Su

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Using a cell phone handset could cause adverse health effects in neurobehavioral function.

Pubmed Data : Wei Sheng Yan Jiu. 2000 Mar 30 ;29(2):102-3. PMID: 12725088

Article Published Date : Mar 30, 2000

Authors : Z Cao, J Liu, S Li, X Zhao

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Using a phone more than 2 hours a day is associated with sleep deprivaiton and day sleepiness in medical students.

Pubmed Data : Indian J Physiol Pharmacol. 2014 Jan-Mar;58(1):100-3. PMID: 25464686

Article Published Date : Jan 01, 2014

Authors : Saxena Yogesh, Shrivastava Abha, Singh Priyanka

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

DNA damage (AC 81) (CK 281)

1.8 GHz microwaves may enhance UVC-stimulated DNA damage.

Pubmed Data : Toxicology. 2007 Apr 11 ;232(3):311-6. Epub 2007 Feb 3. PMID: 17336440

Article Published Date : Apr 11, 2007

Authors : Wang Baohong, Jin Lifen, Li Lanjuan, Lou Jianlin, Lu Deqiang, Zheng Wei, He Jiliang

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

1800 MHz EMF exposure caused significant genotoxic and cytotoxic effects and was more marked in immature rats.

Pubmed Data : Ecotoxicol Environ Saf. 2012 Jun ;80:140-4. Epub 2012 Mar 9. PMID: 22405939

Article Published Date : Jun 01, 2012

Authors : Vedat Sekeroğlu, Ayşegül Akar, Zülal Atlı Sekeroğlu

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

1800 MHz RF-EMF fields result in cell type-dependent DNA damage and a significant increase in reactive oxygen species level, however researchers conclude it doesn't contribute to cell dysfunction.

Pubmed Data : PLoS One. 2013 ;8(1):e54906. Epub 2013 Jan 23. PMID: 23355902

Article Published Date : Jan 01, 2013

Authors : Shanshan Xu, Guangdi Chen, Chunjing Chen, Chuan Sun, Danying Zhang, Manuel Murbach, Niels Kuster, Qunli Zeng, Zhengping Xu

Study Type : In Vitro Study
Additional Links

Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

1800 MHz radiofrequency electromagnetic field exposure for 24 hours might induce DNA damage in Chinese hamster lung cells.

Pubmed Data : Zhonghua Yu Fang Yi Xue Za Zhi. 2006 May ;40(3):149-52. PMID: **16836873**

Article Published Date : May 01, 2006

Authors : Dan-ying Zhang, Zheng-ping Xu, Huai Chiang, De-qiang Lu, Qun-li Zeng

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

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2 hours of 2.45 GHz radiation induces micronuclei formation above a standard absorption rate of 50W/kg in Chinese hamster ovary cells.

Pubmed Data : ScientificWorldJournal. 2004 Oct 20 ;4 Suppl 2:29-40. Epub 2004 Oct 20. PMID: **15517100**

Article Published Date : Oct 20, 2004

Authors : S Koyama, Y Isozumi, Y Suzuki, M Taki, J Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

2.4 GHz electromagnetic field exposure increases DNA oxidation in brain and plasma and plasma protein

oxidation in rats. Garlic reduces biomarkers of both DNA and protein oxidation, suggesting it protects against the adverse effects of EMF radiation.

Pubmed Data : Int J Radiat Biol. 2014 Oct ;90(10):892-6. Epub 2014 Jun 25. PMID: 24844368

Article Published Date : Oct 01, 2014

Authors : HaticeŞ Gürler, Birşen Bilgici, Ayşegül K Akar, Leman Tomak, Abdülkerim Bedir

Study Type : Animal Study
Additional Links
Substances : Garlic : CK(1099) : AC(367)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Genoprotective : CK(413) : AC(148) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406), Plant Extracts : CK(11762) : AC(4236) , Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

2.45GHz electromagnetic radiation may negatively impact implantation and pregnancy via oxidative stress.

Pubmed Data : Appl Biochem Biotechnol. 2013 Mar ;169(5):1727-51. Epub 2013 Jan 22. PMID: 23334843

Article Published Date : Mar 01, 2013

Authors : Saba Shahin, Vineet Prakash Singh, Ritesh K Shukla, Alok Dhawan, Ravi Kumar Gangwar, Surya Pal Singh, Chandra Mohini Chaturvedi

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Pregnancy : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)

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50 GHz microwave radiation exposure at a specific absorption rate of 0.014 W/kg induces oxidative and genotoxic stress in rats.

Pubmed Data : Indian J Exp Biol. 2010 Jun ;48(6):586-92. PMID: 20882761

Article Published Date : Jun 01, 2010

Authors : Sanjay Kumar, Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 GHz microwave radiation induces oxidative stress and DNA damage in the rat brain.

Pubmed Data : Appl Biochem Biotechnol. 2009 Jul ;158(1):126-39. Epub 2008 Dec 17. PMID: 19089649

Article Published Date : Jul 01, 2009

Authors : Kavindra Kumar Kesari, J Behari

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

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50 Hz electromagnetic fields induce genomic instability in exposed cells.

Pubmed Data : Mutat Res. 2014 Feb ;760:33-41. Epub 2013 Dec 26. PMID: 24374227

Article Published Date : Feb 01, 2014

Authors : Jukka Luukkonen, Anu Liimatainen, Jukka Juutilainen, Jonne Naarala

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 Hz magnetic fields and 915 MHz microwaves can induce genotoxic damage in both healthy and electromagnetic hypersensitive lymphocytes in vitro.

Pubmed Data : Bioelectromagnetics. 2005 Apr ;26(3):173-84. PMID: 15768430

Article Published Date : Apr 01, 2005

Authors : Igor Y Belyaev, Lena Hillert, Marina Protopopova, Christoffer Tamm, Lars O G Malmgren, Bertil R R Persson, Galina Selivanova, Mats Harms-Ringdahl

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

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50 Hz magnetic fields and lipopolysaccharides synergistically reduce cell viability in vitro.

Pubmed Data : Int J Radiat Biol. 2016 10 ;92(10):583-9. Epub 2016 Jul 19. PMID: **27430265**

Article Published Date : Jan 10, 2016

Authors : Maresuke Nakayama, Aya Nakamura, Tsuyoshi Hondou, Hidetake Miyata

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Lipopolysaccharide-Induced Toxicity : CK(1105) : AC(650), Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

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60 Hz sinusoidal magnetic field induces single and double-strand DNA breaks through the involvement of free radicals.

Pubmed Data : Environ Health Perspect. 2004 May ;112(6):687-94. PMID: **15121512**

Article Published Date : May 01, 2004

Authors : Henry Lai, Narendra P Singh

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Both extremely low-frequency electromagnetic fields and radiofrequency electromagnetic fields induce DNA damage in vitro, but in different ways.

Pubmed Data : Radiat Res. 2015 Mar ;183(3):305-14. Epub 2015 Feb 17. PMID: 25688995

Article Published Date : Mar 01, 2015

Authors : Weixia Duan, Chuan Liu, Lei Zhang, Mindi He, Shangcheng Xu, Chunhai Chen, Huifeng Pi, Peng Gao, Yanwen Zhang, Min Zhong, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Cell phone electromagnetic field exposure leads to genotoxic damage in human peripheral blood lymphocytes.

Pubmed Data : Bioelectromagnetics. 2003 Feb ;24(2):82-90. PMID: 12524674

Article Published Date : Feb 01, 2003

Authors : Maya Mashevich, Dan Folkman, Amit Kesar, Alexander Barbul, Rafi Korenstein, Eli Jerby, Lydia Avivi

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Cell phones which spread radiofrequency may damage DNA and change gene expression in brain cells, according to this animal study.

Pubmed Data : J Neurooncol. 2012 Jan ;106(1):53-8. Epub 2011 Jul 6. PMID: 21732071

Article Published Date : Jan 01, 2012

Authors : Emin Karaca, Burak Durmaz, Huseyin Aktug, Huseyin Altug, Teoman Yildiz, Candan Guducu, Melis Irgi, Mehtap Gulcihan Cinar Koksal, Ferda Ozkinay, Cumhur Gunduz, Ozgur Cogulu

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Cell-specific redox may explain the differential effects of electromagnetic fields.

Pubmed Data : Curr Med Chem. 2007 ;14(10):1141-52. PMID: 17456027

Article Published Date : Jan 01, 2007

Authors : Myrtill Simkó

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

Cells treated with the combination of 2.45 GHz electromagnetic fields at specific absorption rates from 50 to 200 W/kg and bleomycin exhibited increased hypoxanthine-guanine phosphoribosyl transferase gene mutations

Pubmed Data : J Radiat Res. 2007 Jan ;48(1):69-75. Epub 2006 Dec 19. PMID: 17179647

Article Published Date : Jan 01, 2007

Authors : Shin Koyama, Yoshio Takashima, Tomonori Sakurai, Yukihisa Suzuki, Masao Taki, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

Chronic exposure to microwave radiations cause statistically significant increase in DNA single strand breaks in brain cells of rat.

Pubmed Data : Mutat Res. 2006 Apr 11 ;596(1-2):76-80. Epub 2006 Feb 2. PMID: 16458332

Article Published Date : Apr 11, 2006

Authors : R Paulraj, J Behari

Study Type : Animal Study

Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Chronic low-intensity microwave exposure in the frequency range of 900 to 2450 MHz leads to cognitive decline and DNA damage in rats.

Pubmed Data : Int J Toxicol. 2015 May-Jun;34(3):284-90. Epub 2015 Mar 5. PMID: 25749756

Article Published Date : May 01, 2015

Authors : Pravin Suryakantrao Deshmukh, Namita Nasare, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Digvijay Singh, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Neurotoxic : CK(1458) : AC(323)

Co-exposure of cells to benzene or its metabolites concomitantly with extremely low frequency electromagnetic fields results in a clear genotoxic effect.

Pubmed Data : Toxicol Lett. 2005 Jun 17 ;157(2):119-28. PMID: 15836999

Article Published Date : Jun 17, 2005

Authors : Massimo Moretti, Milena Villarini, Stefano Simonucci, Cristina Fatigoni, Giuseppina Scassellati-Sforzolini, Silvano Monarca, Rossana Pasquini, Monica Angelucci, Maila Strappini

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

DNA appears to possess the two structural characteristics of fractal antennas, electronic conduction and self symmetry which contribute to greater reactivity of DNA

with EMF and could account for increases in cancer epidemiology.

Pubmed Data : Int J Radiat Biol. 2011 Apr ;87(4):409-15. Epub 2011 Feb 28. PMID: 21457072

Article Published Date : Mar 31, 2011

Authors : Martin Blank, Reba Goodman

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Low Dose Ionizing Radiation : CK(52) : AC(24)

Daily mobile phone usage, location of residence and power density as significant predictors of genetic damage.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):344-54. Epub 2015 Aug 28. PMID: 25006864

Article Published Date : Dec 31, 2014

Authors : Gursatej Gandhi, Gurpreet Kaur, Uzma Nisar

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Dose-dependent DNA damage resulting from mobile phone radiation is attentuated by pretreatment with melatonin in vitro.

Pubmed Data : Int J Radiat Biol. 2013 Nov ;89(11):993-1001. Epub 2013 Sep 3. PMID: 23952262

Article Published Date : Nov 01, 2013

Authors : Chuan Liu, Peng Gao, Shang-Cheng Xu, Yuan Wang, Chun-Hai Chen, Min-Di He, Zheng-Ping Yu, Lei Zhang, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Genoprotective : CK(413) : AC(148) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Electromagnetic fields directly activate macrophages, stimulating elevated levels of free radical production. This may lead to downstream carcinogenic, genotoxic, and melatonin-depleting effects.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):83-92. PMID: 15352165

Article Published Date : Sep 01, 2004

Authors : Myrtill Simkó, Mats-Olof Mattsson

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogen : CK(61) : AC(12) , Genotoxic : CK(201) : AC(78) , Immunotoxic : CK(338) : AC(66) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation induces oxidative stress and DNA damage in the earthworm.

Pubmed Data : Ecotoxicol Environ Saf. 2013 Apr ;90:7-12. Epub 2013 Jan 24. PMID: 23352129

Article Published Date : Apr 01, 2013

Authors : Mirta Tkalec, Anamaria Stambuk, Maja Srut, Krešimir Malarić, Göran I V Klobučar

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Evaluation of current studies suggests that electromagnetic fields may represent a serious source of concern and may be hazardous to living organisms.

Pubmed Data : Environ Res. 2018 05 ;163:71-79. Epub 2018 Feb 22. PMID: 29427953

Article Published Date : Jan 01, 2018

Authors : Adem Kocaman, Gamze Altun, Arife Ahsen Kaplan, Ömür Gülsüm Deniz, Kıymet Kübra Yurt, Süleyman Kaplan

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Exposure of quail embryos to 900 MHz results in an overproduction of free radicals and DNA damage.

Pubmed Data : Exp Oncol. 2013 Sep ;35(3):219-25. PMID: 24084462

Article Published Date : Sep 01, 2013

Authors : A Burlaka, O Tsybulin, E Sidorik, S Lukin, V Polishuk, S Tsehmistrenko, I Yakymenko

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

Exposure to ELF-MF at levels less than the ACGIH exposure limit can produce DNA strand breaks.

Pubmed Data : Toxicol Ind Health. 2019 Jun ;35(6):424-430. Epub 2019 May 28. PMID: 31138035

Article Published Date : May 31, 2019

Authors : Rezvan Zendehdel, Il Je Yu, Behnam Hajipour-Verdom, Zahra Panjali

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Electromagnetic Radiation : CK(136) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Exposure to electromagnetic fields was positively correlated with increased frequency of increase total micronuclei and micronucleated cells.

Pubmed Data : Mutat Res. 2008 Feb 29 ;650(2):175-80. Epub 2007 Nov 29. PMID: 18248768

Article Published Date : Feb 29, 2008

Authors : Abhay Singh Yadav, Manoj Kumar Sharma

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Exposure to static magnetic field causes accumulation of reactive oxygen species in Vicia faba L. and natural radioactivity of soil exaggerates oxidative stress.

Pubmed Data : Mutat Res. 2012 Jan 24 ;741(1-2):116-21. Epub 2011 Nov 16. PMID: 22108253

Article Published Date : Jan 24, 2012

Authors : Fatemeh Javani Jouni, Parviz Abdolmaleki, Faezeh Ghanati

Study Type : Plant Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields increase the frequency of micronucleated polychromatic erythrocyte in mouse bone marrow.

Pubmed Data : Electromagn Biol Med. 2014 Jan ;33(1):51-7. Epub 2013 Jun 19. PMID: 23781994

Article Published Date : Jan 01, 2014

Authors : Miguel Alcaraz, Encarnación Olmos, Miguel Alcaraz-Saura, Daniel G Achel, Julián Castillo

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Extremely low frequency electromagnetic fields may

enhance the genotoxic activity of xenobiotics.

Pubmed Data : Ann Ig. 2004 Jan-Apr;16(1-2):321-40. PMID: 15554538

Article Published Date : Jan 01, 2004

Authors : G Scassellati Sforzolini, M Moretti, M Villarini, C Fatigoni, R Pasquini

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Extremely low-frequency electromagnetic fields induce DNA strand breaks in Vero cells.

Pubmed Data : J Environ Health Sci Eng. 2014 Jan 8 ;12(1):15. Epub 2014 Jan 8. PMID: 24401758

Article Published Date : Jan 08, 2014

Authors : Cosmin Teodor Mihai, Pincu Rotinberg, Florin Brinza, Gabriela Vochita

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Gadolinium induces DNA damage which is enhanced by extremely low frequency electromagnetic fields.

Pubmed Data : Drug Chem Toxicol. 2014 Oct ;37(4):440-7. Epub 2014 Jan 30. PMID: 24479558

Article Published Date : Oct 01, 2014

Authors : Seunghyun Cho, Younghyun Lee, Sunyeong Lee, Young Joo Choi, Hai Won Chung

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Gadolinium : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Genotoxicity of intermediate frequency magnetic fields in vitro and in vivo.

Pubmed Data : Environ Res. 2018 Sep 8. Epub 2018 Sep 8. PMID: 30243651

Article Published Date : Sep 07, 2018

Authors : Mikko Herrala, Kajal Kumari, Hennariikka Koivisto, Jukka Luukkonen, Heikki Tanila, Jonne Naarala, Jukka Juutilainen

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Gingko Biloba attentuates the genotoxic effects of 1.8 GHz radiofrequency radiation.

Pubmed Data : Sci Total Environ. 2011 Dec 1 ;410-411:59-64. Epub 2011 Oct 19. PMID: 22014767

Article Published Date : Dec 01, 2011

Authors : Meric Arda Esmekaya, Ebru Aytekin, Elcin Ozgur, Göknur Güler, Mehmet Ali Ergun, Suna Omeroğlu, Nesrin Seyhan

Study Type : Human In Vitro
Additional Links
Substances : Ginkgo biloba : CK(936) : AC(218)
Diseases : DNA damage : CK(1482) : AC(545)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450), Radioprotective : CK(1247) : AC(406)
Additional Keywords : Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Higher duration of exposure to 900 MHz RF-EMF leads to increased DNA damage in quail embryos.

Pubmed Data : Int J Radiat Biol. 2013 Sep ;89(9):756-63. Epub 2013 May 13. PMID: 23578013

Article Published Date : Sep 01, 2013

Authors : Olexandr Tsybulin, Evgeniy Sidorik, Olga Brieieva, Lyubov Buchynska, Sergiy Kyrylenko, Diane Henshel, Igor Yakymenko

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Intermittent mobile phone exposure results in a significant increase in embryonic mortality and cardiac deformity in chicken embryos.

Pubmed Data : Anat Histol Embryol. 2016 Jun ;45(3):197-208. Epub 2015 Jul 14. PMID: 26171674

Article Published Date : Jun 01, 2016

Authors : W Ye, F Wang, W Zhang, N Fang, W Zhao, J Wang

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3) , Cardiotoxic : CK(810) : AC(124) , Genotoxic : CK(201) : AC(78)

Long-term exposure to electromagnetic fields at a standard absorption rate of 5.0 W/kg are capable of inducing chromosomal damage in human lymphocytes.

Pubmed Data : Bioelectromagnetics. 2002 Feb ;23(2):113-26. PMID: 11835258

Article Published Date : Feb 01, 2002

Authors : Raymond R Tice, Graham G Hook, Maria Donner, Donald I McRee, Arthur W Guy

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Low-intensity extremely high frequency electromagnetic radiation induces physiological changes to DNA in exposed cell.s

Pubmed Data : Radiats Biol Radioecol. 2003 Jan-Feb;43(1):87-92. PMID: 12677665

Article Published Date : Jan 01, 2003

Authors : A B Gapeev, K V Lushnikov, Iu V Shumilina, N P Sirota, V B Sadovnikov, N K Chemeris

Study Type : Animal Study

Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Melatonin attentuates the spermatotoxic effects of radiofrequency radiation in mice.

Pubmed Data : Toxicol Ind Health. 2018 May ;34(5):315-327. Epub 2018 Mar 21. PMID: 29562845

Article Published Date : May 01, 2018

Authors : Neelam Pandey, Sarbani Giri

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Genoprotective : CK(413) : AC(148)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Microwave irradiation led to the melting of double-stranded deoxyoligonucleotides well below their thermal melting temperature independent of the length of the deoxyoligonucleotides.

Pubmed Data : Org Biomol Chem. 2009 Jun 21 ;7(12):2506-8. Epub 2009 May 1. PMID: 19503920

Article Published Date : Jun 21, 2009

Authors : Wesleigh F Edwards, Douglas D Young, Alexander Deiters

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Microwaves are cytotoxic and genotoxic to the rat thymus and its effects are attentuated by melatonin.

Pubmed Data : Gen Physiol Biophys. 2013 Mar ;32(1):79-90. PMID: 23531837

Article Published Date : Mar 01, 2013

Authors : Dusan Sokolovic, Branka Djordjevic, Gordana Kocic, Andrej Veljkovic, Milena Marinkovic, Jelena Basic, Tatjana Jevtovic-Stoimenov, Zoran Stanojkovic, Danka M Sokolovic, Voja Pavlovic, Boris Djindjic, Dejan Krstic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , DNA Repair Up-regulation : CK(67) : AC(16)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Mobile phone exposure (940 MHz) induces DNA changes in calf thymus.

Pubmed Data : Ecotoxicol Environ Saf. 2013 Feb ;88:35-41. Epub 2012 Nov 17. PMID: 23164448

Article Published Date : Feb 01, 2013

Authors : Azadeh Hekmat, Ali Akbar Saboury, Ali Akbar Moosavi-Movahedi

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Mobile phone microwave radiation induces DNA damage evidenced by effects on chromatin conformation.

Pubmed Data : Environ Health Perspect. 2005 Sep ;113(9):1172-7. PMID: 16140623

Article Published Date : Sep 01, 2005

Authors : Eva Markovà, Lena Hillert, Lars Malmgren, Bertil R R Persson, Igor Y Belyaev

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Mobile phone microwave radiation may inhibit DNA repair.

Pubmed Data : Bioelectromagnetics. 2009 Feb ;30(2):129-41. PMID: 18839414

Article Published Date : Feb 01, 2009

Authors : Igor Y Belyaev, Eva Markovà, Lena Hillert, Lars O G Malmgren, Bertil R R Persson

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Mobile phone radiation leads to cytotoxic and genotoxic damage in both immature and mature rats, with rate of damage being statistically higher in immature rats.

Pubmed Data : Int J Radiat Biol. 2013 Nov ;89(11):985-92. Epub 2013 Jun 21. PMID: 23718180

Article Published Date : Nov 01, 2013

Authors : Zülal Atlı Şekeroğlu, Ayşegül Akar, Vedat Şekeroğlu

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

Neuroprotective effects of lotus seedpod procyanidins on extremely low frequency electromagnetic field-induced neurotoxicity.

Pubmed Data : Biomed Pharmacother. 2016 Aug ;82:628-39. Epub 2016 Jun 13. PMID: 27470406

Article Published Date : Jul 31, 2016

Authors : Chunchun Yin, Xiaoping Luo, Yuqing Duan, Wenyi Duan, Haihui Zhang, Yuanqing He, Guibo Sun, Xiaobo Sun

Study Type : In Vitro Study
Additional Links
Substances : Lotus : CK(153) : AC(108)
Diseases : DNA damage : CK(1482) : AC(545) , Electromagnetic Radiation : CK(136) : AC(22)

Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932) , Antioxidants : CK(14410) : AC(5758), Bcl-2 protein down-regulation : CK(419) : AC(295) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Neuroprotective Agents : CK(6374) : AC(2801) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Proanthocyanidins : CK(203) : AC(54)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

RF-EMF can significantly affect DNA transcription in cell- and tissue-specific manner.

Pubmed Data : Electromagn Biol Med. 2019 Sep 21:1-9. Epub 2019 Sep 21. PMID: **31542968**

Article Published Date : Sep 21, 2019

Authors : Brunella Del Re, Ferdinando Bersani, Gianfranco Giorgi

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Radiofrequency electromagnetic waves emitted from cell phones may lead to oxidative stress in human semen.

Pubmed Data : Fertil Steril. 2009 Oct ;92(4):1318-25. Epub 2008 Sep 20. PMID: **18804757**

Article Published Date : Oct 01, 2009

Authors : Ashok Agarwal, Nisarg R Desai, Kartikeya Makker, Alex Varghese, Rand Mouradi, Edmund Sabanegh, Rakesh Sharma

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Radiofrequency fields at 2.45 GHz can alter gene expression in human cells by a non-thermal mechanism.

Pubmed Data : Mutat Res. 2013 Jan 20 ;750(1-2):27-33. Epub 2012 Oct 8. PMID: **23059817**

Article Published Date : Jan 20, 2013

Authors : Dmitry S Pesnya, Anton V Romanovsky

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Radiofrequency radiation at 900 MHz can lead to a perturbation in recombination frequency in mice.

Pubmed Data : Radiat Res. 2001 Nov ;156(5 Pt 1):495-502. PMID: 11604062

Article Published Date : Nov 01, 2001

Authors : P J Sykes, B D McCallum, M J Bangay, A M Hooker, A A Morley

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Radiofrequency-electromagnetic field exposure induces DNA damage in a eurkaryotic cell system.

Pubmed Data : Mutagenesis. 2016 Mar ;31(2):187-92. Epub 2015 Oct 17. PMID: 26476436

Article Published Date : Mar 01, 2016

Authors : Bianca Gustavino, Giovanni Carboni, Roberto Petrillo, Giovanni Paoluzzi, Emanuele Santovetti, Marco Rizzoni

Study Type : Plant Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4) , Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Rats exposed to 900, 1800, and 2450 MHz electromagnetic fields exhibit DNA damage in brain tissue.

Pubmed Data : Toxicol Int. 2013 Jan ;20(1):19-24. PMID: 23833433

Article Published Date : Jan 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Sudhir Chandna, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Repeated 915 MHz irradiation could be a cause of DNA breaks in renal and liver cells.

Pubmed Data : Coll Antropol. 2011 Dec ;35(4):1259-64. PMID: 22397269

Article Published Date : Dec 01, 2011

Authors : Ivancica Trosić, Ivan Pavicić, Sanja Milković-Kraus, Marin Mladinić, Davor Zeljezić

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Study of electrical stimulation with different electric field intensities in regulating differentiation of PC12 cells.

Pubmed Data : ACS Chem Neurosci. 2018 Sep 13. Epub 2018 Sep 13. PMID: 30212623

Article Published Date : Sep 12, 2018

Authors : Wei Jing, Yifan Zhang, Qing Cai, Guoqiang Chen, Lin Wang, Xiaoping Yang, Weihong Zhong

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Subjects exposed to radiation from mobile towers exhibit statistically significant elevated levels biomarkers of DNA damage in peripheral blood lymphocytes.

Pubmed Data : Arch Environ Contam Toxicol. 2016 Apr ;70(3):615-25. Epub 2015 Aug 5. PMID: 26238667

Article Published Date : Apr 01, 2016

Authors : Sachin Gulati, Anita Yadav, Neeraj Kumar, Kanupriya, Neeraj K Aggarwal, Rajesh Kumar, Ranjan Gupta

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Super-low intensity radiofrequency radiation at microwatt reasonant frequencies resulted in changes in genes and problems with chromatin conformation.

Pubmed Data : Biochim Biophys Acta. 1997 Oct 20 ;1336(3):465-73. PMID: 9367174

Article Published Date : Oct 20, 1997

Authors : Belyaev IYa, Y D Alipov, M Harms-Ringdahl

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Talking on the phone for more than four hours per day and pocketing mobile phones could be a risk factor for sperm DNA fragmentation.

Pubmed Data : J Endocrinol Invest. 2013 Dec ;36(11):970-4. Epub 2013 May 30. PMID: 23722985

Article Published Date : Dec 01, 2013

Authors : R Rago, P Salacone, L Caponecchia, A Sebastianelli, I Marcucci, A E Calogero, R Condorelli, E Vicari, G Morgia, V Favilla, S Cimino, A F Arcoria, S La Vignera

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222)

: AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The adverse effects of electromagnetic fields may be mediated by activation of voltage-gated calcium channels.

Pubmed Data : J Cell Mol Med. 2013 Aug ;17(8):958-65. Epub 2013 Jun 26. PMID: 23802593

Article Published Date : Aug 01, 2013

Authors : Martin L Pall

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48) , Voltage-Gated Calcium Channel Activation : CK(1) : AC(1)

The data in this study emphasized the dangerous effects of prolonged exposure to both ionized and radiofrequency radiation and indicated that chromosomal aberration analysis should be obligatory for individuals working at radio-relay stations.

Pubmed Data : Acta Med Okayama. 2001 Apr ;55(2):117-27. PMID: 11332198

Article Published Date : Apr 01, 2001

Authors : H Lalić, A Lekić, B Radosević-Stasić

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The genotoxic effects of electromagnetic field exposure may not be due to thermal effects.

Pubmed Data : Mutat Res. 2005 Jun 6 ;583(2):178-83. PMID: **15869902**

Article Published Date : Jun 06, 2005

Authors : Elisabeth Diem, Claudia Schwarz, Franz Adlkofer, Oswald Jahn, Hugo Rüdiger

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The results of this animal study suggest that low level microwave exposure at frequencies of 900, 1800, and 2450 MHz may lead to hazardous effects on brain.

Pubmed Data : Biomed Environ Sci. 2016 Dec ;29(12):858-867. PMID: **28081746**

Article Published Date : Dec 01, 2016

Authors : Pravin Suryakantrao Deshmukh, Kanu Megha, Namita Nasare, Basu Dev Banerjee, Rafat Sultana Ahmed, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The results of this study concluded that the melatonin has strong antioxidative potential against microwave-induced oxidative stress-mediated DNA damage in testicular cells.

Pubmed Data : Electromagn Biol Med. 2014 Jun ;33(2):81-91. Epub 2013 May 15. PMID: 23676079

Article Published Date : Jun 01, 2014

Authors : Ramovatar Meena, Kajal Kumari, Jitendra Kumar, Paulraj Rajamani, H N Verma, Kavindra Kumar Kesari

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Malondialdehyde Down-regulation : CK(1452) : AC(466) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

These data strongly indicate a genotoxic potential of intermittent EMF.

Pubmed Data : Mutat Res. 2002 Aug 26 ;519(1-2):1-13. PMID: 12160887

Article Published Date : Aug 26, 2002

Authors : Sabine Ivancsits, Elisabeth Diem, Alexander Pilger, Hugo W Rüdiger, Oswald Jahn

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

These findings suggest occupational exposure to pulsed microwaves could cause genetic and cell alterations and that oxidative stress may be one of the possible mechanisms of DNA and cell damage.

Pubmed Data : Int J Hyg Environ Health. 2011 Jan ;214(1):59-65. Epub 2010 Sep 15. PMID: 20833106

Article Published Date : Jan 01, 2011

Authors : Vera Garaj-Vrhovac, Goran Gajski, Senijo Pažanin, Antonio Sarolić, Ana-Marija Domijan, Dubravka Flajs, Maja Peraica

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) ,

Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

These results indicate that microwave radiation represents a potential DNA-damaging hazard.

Pubmed Data : Cell Biol Toxicol. 2009 Feb ;25(1):33-43. Epub 2008 Jan 23. PMID: 18214694

Article Published Date : Feb 01, 2009

Authors : Vera Garaj-Vrhovac, Visnja Orescanin

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78)

These results suggest that exposure to high-field intensity MRI induces genotoxic effects in human lymphocytes.

Pubmed Data : Bioelectromagnetics. 2011 Oct ;32(7):535-42. Epub 2011 Mar 15. PMID: 21412810

Article Published Date : Oct 01, 2011

Authors : Joong Won Lee, Myeong Seong Kim, Yang Jee Kim, Young Joo Choi, Younghyun Lee, Hai Won Chung

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

These studies investigate micronuclei formation at different specific absorption rates, in conjunction with bleomycin, for 18 hours.

Pubmed Data : Mutat Res. 2003 Nov 10 ;541(1-2):81-9. PMID: 14568297

Article Published Date : Nov 10, 2003

Authors : Shin Koyama, Takehisa Nakahara, Kanako Wake, Masao Taki, Yasuhito Isozumi, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links

Diseases : Chemotherapy-Induced Toxicity: Bleomycin : CK(60) : AC(25) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

This paper discusses the implications of the findings that extremely low frequency electromagnetic fields exhibit genotoxic properties.

Pubmed Data : DNA Repair (Amst). 2004 Oct 5 ;3(10):1385-7. PMID: 15336633

Article Published Date : Oct 05, 2004

Authors : Michael J Crumpton, Andrew R Collins

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

This review describes the hormetic effects attributed to electromagnetic fields.

Pubmed Data : Sci Total Environ. 2012 Jun 1 ;426:454-8. Epub 2012 Apr 24. PMID: 22534362

Article Published Date : Jun 01, 2012

Authors : Michael Repacholi

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

This review discusses the use of systems biology in understanding the biological effects of electromagnetic fields, with particular focus on induction of genomic instability and cancer.

Pubmed Data : Genes (Basel). 2019 06 25 ;10(6). Epub 2019 Jun 25. PMID: 31242701

Article Published Date : Jan 25, 2019

Authors : Jonne Naarala, Mikko Kolehmainen, Jukka Juutilainen

Study Type : Review

Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78)

This review outlines some of the known biological effects of static magnetic fields.

Pubmed Data : Biomed Res Int. 2013 ;2013:602987. Epub 2013 Aug 6. PMID: **24027759**

Article Published Date : Jan 01, 2013

Authors : Soumaya Ghodbane, Aida Lahbib, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

This study demonstrated the ability of extremely-low electromagnetic fields to impact fetal development in a tissue-specific way.

Pubmed Data : PLoS One. 2015 ;10(11):e0142259. Epub 2015 Nov 11. PMID: **26559811**

Article Published Date : Jan 01, 2015

Authors : Ion Udroiu, Antonio Antoccia, Caterina Tanzarella, Livio Giuliani, Francesca Pacchierotti, Eugenia Cordelli, Patrizia Eleuteri, Paola Villani, Antonella Sgura

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

This study demonstrates that radar radiation inflicts damage to male reproduction system and it is important to take protective measures.

Pubmed Data : Zhonghua Nan Ke Xue. 2003 Oct ;9(7):494-6, 500. PMID: **14628594**

Article Published Date : Oct 01, 2003

Authors : Xin Liu, Su-Wen Yan, Xiao-Ping Ding, Ning Zhang, Hai-Ou Lu, Jie Tang

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This study emphasizes the need for a DNA-based biological electromagnetic field exposure threshold and outlines the changes to DNA that can occur even at extremely low levels of exposure.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):71-8. Epub 2009 Mar 5. PMID: **19268550**

Article Published Date : Aug 01, 2009

Authors : Martin Blank, Reba Goodman

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Cancers: All : CK(22165) : AC(7896) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Mutagenic : CK(24) : AC(13)

This study notes that electromagnetic exposed individuals demonstrate genotoxic effects in most studies.

Pubmed Data : Mutat Res. 2009 Mar-Jun;681(2-3):259-70. Epub 2008 Nov 27. PMID: **19073278**

Article Published Date : Mar 01, 2009

Authors : Luc Verschaeve

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)

Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation.

Pubmed Data : Fertil Steril. 2011 Nov 22. Epub 2011 Nov 22. PMID: 22112647

Article Published Date : Nov 22, 2011

Authors : Conrado Avendaño, Ariela Mata, César A Sanchez Sarmiento, Gustavo F Doncel

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Laptop Computer Use : CK(20) : AC(2), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Laptop computers : CK(20) : AC(2)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Wi-Fi radiation leads to DNA damage in rat testes.

Pubmed Data : J Pediatr Urol. 2013 Apr ;9(2):223-9. Epub 2012 Mar 30. PMID: 22465825

Article Published Date : Apr 01, 2013

Authors : Halil I Atasoy, Mehmet Y Gunal, Pinar Atasoy, Serenay Elgun, Guler Bugdayci

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Depression (AC 1) (CK 10)

High frequency of mobile phone use at baseline was a risk

factor for mental health outcomes at 1-year follow-up among the young adults

Pubmed Data : BMC Public Health. 2011 Jan 31 ;11:66. Epub 2011 Jan 31. PMID: 21281471

Article Published Date : Jan 31, 2011

Authors : Sara Thomée, Annika Härenstam, Mats Hagberg

Study Type : Human Study
Additional Links
Diseases : Depression : CK(62) : AC(7) , Sleep Disorders : CK(722) : AC(92)
Additional Keywords : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Depressive Syndrome (AC 1) (CK 1)

Proximity to AC power lines positively associated with depressive symptoms and headaches

Pubmed Data : Am J Epidemiol. 1993 Feb 1 ;137(3):318-30. PMID: 8452140

Article Published Date : Feb 01, 1993

Authors : C Poole, R Kavet, D P Funch, K Donelan, J M Charry, N A Dreyer

Study Type : Review
Additional Links
Diseases : Depressive Syndrome : CK(51) : AC(4) , Headache : CK(785) : AC(92)
Additional Keywords : Hydro Lines : CK(1) : AC(1) , Proximity : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Developmental Disorder: Children (AC 1) (CK 10)

Higher-than-ever levels of maternal exposure to electromagnetic fields could be linked to offspring speech problems.

Pubmed Data : J Biomed Phys Eng. 2019 Feb ;9(1):61-68. Epub 2019 Feb 1. PMID: 30881935

Article Published Date : Jan 31, 2019

Authors : S Zarei, M Vahab, M M Oryadi-Zanjani, N Alighanbari, S Mj Mortazavi

Study Type : Human Study
Additional Links
Diseases : Developmental Disorder: Children : CK(71) : AC(8)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Diabetes Mellitus: Type 1 (AC 1) (CK 3)

Microwave radiation from wireless technology may alter blood glucose.

Pubmed Data : Electromagn Biol Med. 2017 ;36(3):259-264. Epub 2017 May 19. PMID: 28524704

Article Published Date : Jan 01, 2017

Authors : Catherine E Kleiber

Study Type : Human: Case Report
Additional Links
Diseases : Diabetes Mellitus: Type 1 : CK(1387) : AC(393)
Additional Keywords : Diabetes Mellitus: Type 1 : CK(1387) : AC(393)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Diabetes Mellitus: Type 2 (AC 7) (CK 29)

Deep sea water has anti-obesity and anti-diabetic properties.

Pubmed Data : Mar Biotechnol (NY). 2009 Jul-Aug;11(4):531-9. Epub 2008 Dec 13. PMID: **19083059**

Article Published Date : Jul 01, 2009

Authors : Hee Sun Hwang, Hyun Ah Kim, Sung Hak Lee, Jong Won Yun

Study Type : Animal Study
Additional Links
Substances : Water: Deep Sea : CK(50) : AC(20)
Diseases : Adiponectin: Low Levels : CK(118) : AC(27) , Diabetes Mellitus: Type 2 : CK(6029) : AC(1167)
Pharmacological Actions : Hypoglycemic Agents : CK(3297) : AC(841)
Additional Keywords : Anti-Obesity Agents : CK(1519) : AC(430)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Dirty electricity raises plasma glucose in electrohypersensitive, diabetic individuals.

Pubmed Data : Electromagn Biol Med. 2008 ;27(2):135-46. PMID: **18568931**

Article Published Date : Jan 01, 2008

Authors : Magda Havas

Study Type : Human Study
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(6029) : AC(1167)
Additional Keywords : Diabetes Mellitus: Type 2 : CK(6029) : AC(1167)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Exposure to high RF-EMFR generated by mobile phone base stations is associated with elevated levels of HbA1c and risk of type 2 diabetes mellitus.

Pubmed Data : Int J Environ Res Public Health. 2015 Nov 13 ;12(11):14519-28. Epub 2015 Nov 13. PMID: **26580639**

Article Published Date : Nov 12, 2015

Authors : Sultan Ayoub Meo, Yazeed Alsubaie, Zaid Almubarak, Hisham Almutawa, Yazeed AlQasem, Rana Muhammed Hasanato

Study Type : Human Study
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(6029) : AC(1167)
Additional Keywords : Increased Risk : CK(1600) : AC(192)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

High glucose induces beta cell oxidative stress, which may underpin the development of type 2 diabetes.

Pubmed Data : Microvasc Res. 2010 Dec ;80(3):332-8. Epub 2010 May 21. PMID: 20471990

Article Published Date : Dec 01, 2010

Authors : Francesca Felice, Daniela Lucchesi, Rossella di Stefano, Maria Chiara Barsotti, Eugenia Storti, Giuseppe Penno, Alberto Balbarini, Stefano Del Prato, Laura Pucci

Study Type : Review
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(6029) : AC(1167) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Rats may have a diabetic-like response to magnetic fields.

Pubmed Data : Invest Radiol. 1991 Dec ;26(12):1095-100. PMID: 1765445

Article Published Date : Dec 01, 1991

Authors : E Gorczynska, R Wegrzynowicz

Study Type : Animal Study
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(6029) : AC(1167)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Insulin : CK(149) : AC(23)

The impact of exposure of diabetic rats to 900 MHz electromagnetic radiation emitted from mobile phone antenna on hepatic oxidative stress.

Pubmed Data : Electromagn Biol Med. 2019 Jul 13:1-10. Epub 2019 Jul 13. PMID: 31304806

Article Published Date : Jul 12, 2019

Authors : Lina A Ismaiil, Wissam H Joumaa, Mohamed E Moustafa

Study Type : Animal Study
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(6029) : AC(1167) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Dizziness (AC 3) (CK 30)

Health care workers using MRIs reported a high prevalence of subjective symptoms associated with MRI exposure.

Pubmed Data : Electromagn Biol Med. 2015 Sep ;34(3):262-4. PMID: 26444203

Article Published Date : Sep 01, 2015

Authors : G Zanotti, G Ligabue, F Gobba

Study Type : Human Study

Additional Links

Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Dizziness : CK(1) : AC(1) , Fatigue : CK(312) : AC(49), Headache : CK(785) : AC(92) , Sleep Disorders : CK(722) : AC(92)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

In a questionnaire, fatigue, headaches, tension, sleep disturbance, and dizziness were associated with mobile phone use.

Pubmed Data : Saudi Med J. 2004 Jun ;25(6):732-6. PMID: 15195201

Article Published Date : Jun 01, 2004

Authors : Thamir Al-Khlaiwi, Sultan A Meo

Study Type : Human Study

Additional Links

Diseases : Dizziness : CK(1) : AC(1) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)

Additional Keywords : Headache : CK(785) : AC(92)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

There was an association between headaches, migraines, and dizziness and proximity to radiofrequency-emitting military antennae.

Pubmed Data : Occup Environ Med. 2007 Jun ;64(6):402-8. Epub 2007 Jan 25. PMID: 17259164

Article Published Date : Jun 01, 2007

Authors : A W Preece, A G Georgiou, E J Dunn, S C Farrow

Study Type : Human Study

Additional Links
Diseases : Dizziness : CK(1) : AC(1) , Headache : CK(785) : AC(92) , Migraines : CK(20) : AC(2)
Additional Keywords : Migraines : CK(20) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Dyslipidemias (AC 3) (CK 30)

Acute cell phone exposure may influence serum lipid profiles.

Pubmed Data : J Basic Clin Physiol Pharmacol. 2010 ;21(2):201-10. PMID: 20853601

Article Published Date : Jan 01, 2010

Authors : Matin A Parkar, Rishad Ahmed, Bilal Bin Abdullah, B S Patil, Kusal K Das

Study Type : Human Study
Additional Links
Diseases : Dyslipidemias : CK(638) : AC(150)
Additional Keywords : Dyslipidemias : CK(638) : AC(150)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Dyslipidemic : CK(32) : AC(8)

Chronic EMF exposure is associated with a change in serum lipid levels.

Pubmed Data : Environ Sci Pollut Res Int. 2016 Feb ;23(3):2495-504. Epub 2015 Oct 1. PMID: 26423285

Article Published Date : Feb 01, 2016

Authors : Zhaopin Wang, Lijuan Wang, Shuangshuang Zheng, Zheyuan Ding, Hui Liu, Wen Jin, Yifeng Pan, Zexin Chen, Ying Fei, Guangdi Chen, Zhengping Xu, Yunxian Yu

Study Type : Human Study
Additional Links
Diseases : Dyslipidemias : CK(638) : AC(150)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

These data show that the radiofrequency electromagnetic radiation contributes to adverse effects on the cardiovascular system.

Pubmed Data : Int J Hyg Environ Health. 2006 Mar ;209(2):133-8. Epub 2005 Nov 10. PMID: 16503299

Article Published Date : Mar 01, 2006

Authors : Katia Vangelova, Christo Deyanov, Mishel Israel

Study Type : Human Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Dyslipidemias : CK(638) : AC(150) , Hypertension : CK(4573) : AC(670)
Additional Keywords : Hypertension : CK(4573) : AC(670)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Eczema (AC 1) (CK 10)

Microwave radiation by mobile phones may enhance allergen-induced wheal responses in association with substance P and vasoactive intestinal peptide in patients with atopic eczema/dermatitis syndrome.

Pubmed Data : Int Arch Allergy Immunol. 2002 Dec ;129(4):348-50. PMID: 12483040

Article Published Date : Dec 01, 2002

Authors : Hajime Kimata

Study Type : Human Study
Additional Links
Diseases : Atopic Dermatitis : CK(1422) : AC(182) , Eczema : CK(1423) : AC(183)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33)

Electromagnetic Radiation (AC 9) (CK 39)

Chronic electromagnetic field exposure decreases HSP70 levels and lowers cytoprotection.

Pubmed Data : J Cell Biochem. 2002 ;84(3):447-54. PMID: 11813250

Article Published Date : Dec 31, 2001

Authors : Andrea Di Carlo, Nicole White, Fuling Guo, Peter Garrett, Theodore Litovitz

Study Type : Animal Study
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Effect of electromagnetic radiations from mobile phone base stations on general health and salivary function.

Pubmed Data : J Int Soc Prev Community Dent. 2016 Jan-Feb;6(1):54-9. PMID: 27011934

Article Published Date : Dec 31, 2015

Authors : Kushpal Singh, Anup Nagaraj, Asif Yousuf, Shravani Ganta, Sonia Pareek, Preeti Vishnani

Study Type : Human Study
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Effects of exposure to extremely low frequency electromagnetic fields on hippocampal long-term potentiation in hippocampal CA1 region.

Pubmed Data : Biochem Biophys Res Commun. 2019 Jul 31. Epub 2019 Jul 31. PMID: 31376941

Article Published Date : Jul 30, 2019

Authors : Yu Zheng, Jianhao Cheng, Lei Dong, Xiaoxu Ma, Qingyao Kong

Study Type : Animal Study
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Exposure to ELF-MF at levels less than the ACGIH exposure limit can produce DNA strand breaks.

Pubmed Data : Toxicol Ind Health. 2019 Jun ;35(6):424-430. Epub 2019 May 28. PMID: **31138035**

Article Published Date : May 31, 2019

Authors : Rezvan Zendehdel, Il Je Yu, Behnam Hajipour-Verdom, Zahra Panjali

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Electromagnetic Radiation : CK(136) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Neuroprotective effects of lotus seedpod procyanidins on extremely low frequency electromagnetic field-induced neurotoxicity.

Pubmed Data : Biomed Pharmacother. 2016 Aug ;82:628-39. Epub 2016 Jun 13. PMID: **27470406**

Article Published Date : Jul 31, 2016

Authors : Chunchun Yin, Xiaoping Luo, Yuqing Duan, Wenyi Duan, Haihui Zhang, Yuanqing He, Guibo Sun, Xiaobo Sun

Study Type : In Vitro Study
Additional Links
Substances : Lotus : CK(153) : AC(108)
Diseases : DNA damage : CK(1482) : AC(545) , Electromagnetic Radiation : CK(136) : AC(22)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932), Antioxidants : CK(14410) : AC(5758), Bcl-2 protein down-regulation : CK(419) : AC(295) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Neuroprotective Agents : CK(6374) : AC(2801) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Proanthocyanidins : CK(203) : AC(54)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Public exposure to radiofrequency electromagnetic fields in everyday microenvironments: An updated systematic review for Europe.

Pubmed Data : Environ Res. 2019 09 ;176:108517. Epub 2019 May 31. PMID: **31202043**

Article Published Date : Dec 31, 2018

Authors : Hamed Jalilian, Marloes Eeftens, Mansour Ziaei, Martin Röösli

Study Type : Review
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

The genomic effects of cell phone exposure on the reproductive system.

Pubmed Data : Environ Res. 2018 11 ;167:684-693. Epub 2018 Jun 5. PMID: 29884549

Article Published Date : Jan 10, 2018

Authors : Ahmad Yahyazadeh, Ömür Gülsüm Deniz, Arife Ahsen Kaplan, Gamze Altun, Kıymet Kübra Yurt, Devra Davis

Study Type : Review
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22) , Infertility : CK(1359) : AC(316)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

The reaction of the circulatory system to stress and electromagnetic fields emitted by mobile phones.

Pubmed Data : Med Pr. 2019 Jul 16 ;70(4):411-424. Epub 2019 Jun 27. PMID: 31249426

Article Published Date : Jul 15, 2019

Authors : Agata Szyjkowska, Elzbieta Gadzicka, Wiesław Szymczak, Alicja Bortkiewicz

Study Type : Human Study
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Hypertensive : CK(184) : AC(21)

These findings suggest that chronic exposure to ELF-EMF is similar to physiological stress, and induce changes on brain lipid profile.

Pubmed Data : BMC Neurosci. 2018 05 21 ;19(1):31. Epub 2018 May 21. PMID: 29783956

Article Published Date : Jan 20, 2018

Authors : Jesús Martínez-Sámano, Alan Flores-Poblano, Leticia Verdugo-Díaz, Marco Antonio Juárez-Oropeza, Patricia V Torres-Durán

Study Type : Animal Study
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22) , Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Electrosensitivity (AC 2) (CK 11)

Characteristics of perceived electromagnetic hypersensitivity in the general population.

Pubmed Data : Scand J Psychol. 2018 Aug ;59(4):422-427. Epub 2018 May 9. PMID: 29741795

Article Published Date : Jul 31, 2018

Authors : Michael J Gruber, Eva Palmquist, Steven Nordin

Study Type : Human Study
Additional Links
Diseases : Electrosensitivity : CK(11) : AC(2)
Additional Keywords : Electrosensitivity : CK(11) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review outlines the overlooked mechanisms of electromagnetic field damage and the critical role Earth's natural electromagnetic signaling plays in the biology of the human body.

Pubmed Data : Rev Environ Health. 2015 ;30(4):293-303. PMID: 26368042

Article Published Date : Jan 01, 2015

Authors : Cindy Sage

Study Type : Review
Additional Links
Diseases : Circadian Dysregulation : CK(165) : AC(34) , Electrosensitivity : CK(11) : AC(2) , Multiple Chemical Sensitivity : CK(34) : AC(5)
Additional Keywords : Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4), Circadian Rhythm : CK(23) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Emotional Disorders (AC 2) (CK 4)

Low energy microwave alters thyroid hormones and may contribute to emotional reactivity.

Pubmed Data : Int J Radiat Biol. 2008 Jun ;84(6):505-13. PMID: 18470749

Article Published Date : Jun 01, 2008

Authors : Rakesh Kumar Sinha

Study Type : Animal Study
Additional Links
Diseases : Emotional Disorders : CK(51) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

These results indicate that mobile phone radiation could affect the emotionality of rats without affecting the general locomotion.

Pubmed Data : Neurol Sci. 2013 Jul ;34(7):1117-24. Epub 2012 Sep 14. PMID: 22976773

Article Published Date : Jul 01, 2013

Authors : Sareesh Naduvil Narayanan, Raju Suresh Kumar, Jaijesh Paval, Vivekananda Kedage, M Shankaranarayana Bhat, Satheesha Nayak, P Gopalakrishna Bhat

Study Type : Animal Study
Additional Links
Diseases : Emotional Disorders : CK(51) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Endothelial Dysfunction (AC 2) (CK 7)

2450 MHz RF-EMF radiation causes changes in the endothelial permeability and vascularization of the rat thymus.

Pubmed Data : Life Sci. 2015 Apr 15 ;127:1-11. Epub 2015 Feb 28. PMID: 25731700

Article Published Date : Apr 15, 2015

Authors : M J Misa-Agustiño, J M Leiro-Vidal, J L Gomez-Amoza, M T Jorge-Mora, F J Jorge-Barreiro,

A A Salas-Sánchez, F J Ares-Pena, E López-Martín

Study Type : Animal Study
Additional Links
Diseases : Endothelial Dysfunction : CK(1765) : AC(346)
Additional Keywords : Endothelial Dysfunction : CK(1765) : AC(346) , Endothelial Dysfunction : CK(1765) : AC(346), Endothelial Dysfunction : CK(1765) : AC(346) , Endothelial Dysfunction : CK(1765) : AC(346), Endothelial Dysfunction : CK(1765) : AC(346) , Endothelial Dysfunction : CK(1765) : AC(346), Endothelial Dysfunction : CK(1765) : AC(346)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4)

Electromagnetic fields reduces endothelin-1 levels through a nitric oxide-related pathway.

Pubmed Data : J Int Med Res. 2005 Sep-Oct;33(5):545-54. PMID: 16222888

Article Published Date : Sep 01, 2005

Authors : S Morimoto, T Takahashi, K Shimizu, T Kanda, K Okaishi, M Okuro, H Murai, Y Nishimura, K Nomura, H Tsuchiya, I Ohashi, M Matsumoto

Study Type : Human In Vitro
Additional Links
Diseases : Endothelial Dysfunction : CK(1765) : AC(346)
Pharmacological Actions : Enzyme Inhibitors : CK(602) : AC(312)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Epilepsy (AC 3) (CK 22)

GSM-type radiation can induce seizures in rats following their facilitation by subconvulsive doses of picrotoxin, which has relevance in human epileptic disorders.

Pubmed Data : Neurosci Lett. 2006 May 1 ;398(1-2):139-44. Epub 2006 Jan 30. PMID: 16448750

Article Published Date : May 01, 2006

Authors : Elena López-Martín, José L Relova-Quinteiro, Rosalia Gallego-Gómez, Manuel Peleteiro-Fernández, Francisco J Jorge-Barreiro, Francisco J Ares-Pena

Study Type : Animal Study
Additional Links

Diseases : Epilepsy : CK(530) : AC(137) , Seizures : CK(298) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone EMFs modulate cortical excitability in patients affected by focal epilepsy.

Pubmed Data : Brain Stimul. 2013 May ;6(3):448-54. Epub 2012 Aug 9. PMID: 22889717

Article Published Date : May 01, 2013

Authors : Mario Tombini, Giovanni Pellegrino, Patrizio Pasqualetti, Giovanni Assenza, Antonella Benvenga, Emma Fabrizio, Paolo Maria Rossini

Study Type : Human Study
Additional Links
Diseases : Epilepsy : CK(530) : AC(137)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Excitotoxic : CK(15) : AC(4) , Neurotoxic : CK(1458) : AC(323)

Mobile phone electromagnetic fields may affect inter-hemispheric synchronization of the alpha EEG rhythms in epileptic patients.

Pubmed Data : Int J Psychophysiol. 2012 May ;84(2):164-71. Epub 2012 Feb 16. PMID: 22326594

Article Published Date : May 01, 2012

Authors : Fabrizio Vecchio, Mario Tombini, Paola Buffo, Giovanni Assenza, Giovanni Pellegrino, Antonella Benvenga, Claudio Babiloni, Paolo Maria Rossini

Study Type : Human Study
Additional Links
Diseases : Epilepsy : CK(530) : AC(137)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Epstein-Barr Virus Infections (AC 2) (CK 10)

Electromagnetic fields can induce activation of the Epstein-Barr virus genome in latently infected human lymphoid cells.

Pubmed Data : J Environ Pathol Toxicol Oncol. 1997 ;16(2-3):205-7. PMID: 9276003

Article Published Date : Dec 31, 1996

Authors : S Grimaldi, E Pasquali, L Barbatano, A Lisi, N Santoro, A Serafino, D Pozzi

Study Type : Human In Vitro
Additional Links
Diseases : Epstein-Barr Virus Infections : CK(132) : AC(47)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

GSM mobile phone radiation induces the expression of Epstein-Barr virus early antigens which are linked to various cancers.

Pubmed Data : Biomed Environ Sci. 2013 Jan ;26(1):76-8. PMID: 23294619

Article Published Date : Jan 01, 2013

Authors : Yang Liu, Ming Lian Wang, Ru Gang Zhong, Xue Mei Ma, Qun Wang, Yi Zeng

Study Type : Human In Vitro
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Epstein-Barr Virus Infections : CK(132) : AC(47)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Eye Abnormalities (AC 2) (CK 20)

A significant increase in blurring of vision was reported by users of mobile phone possession more than 2 years compared to users of mobile phone possession less 2 years and eye inflammation in women more so than men.

Pubmed Data : Electromagn Biol Med. 2008 ;27(2):205-9. PMID: 18568938

Article Published Date : Jan 01, 2008

Authors : Nermin Küçer

Study Type : Human Study
Additional Links
Diseases : Eye Abnormalities : CK(10) : AC(1)
Additional Keywords : Eye Abnormalities : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Mobile phone use may cause blurred vision and increase eye secretion, inflammation, and lacrimation.

Pubmed Data : Pathol Biol (Paris). 2005 Mar ;53(2):88-91. PMID: 15708652

Article Published Date : Mar 01, 2005

Authors : Hasan H Balik, Dilek Turgut-Balik, Kemal Balikci, I Cem Ozcan

Study Type : Human Study
Additional Links
Diseases : Eye Abnormalities : CK(10) : AC(1) , Vision Disorders : CK(71) : AC(8)
Additional Keywords : Vision Disorders : CK(71) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Eye Damage (AC 3) (CK 12)

1 GHz irradiation of intact bovine eye lens affects the optical function of the lens. Although self-recovery occurs after ceasing exposure, microscopic damage still remains.

Pubmed Data : Bioelectromagnetics. 2005 Jul ;26(5):398-405. PMID: 15887253

Article Published Date : Jul 01, 2005

Authors : A Dovrat, R Berenson, E Bormusov, A Lahav, T Lustman, N Sharon, L Schächter

Study Type : In Vitro Study
Additional Links
Diseases : Eye Damage : CK(20) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Exposure to 1.1 GHz, 2.22 mW microwaves caused a reversible decrease in lens optical quality accompanied by irreversible morphological and biochemical damage to the lens epithelial cell layer in vitro.

Pubmed Data : Open Ophthalmol J. 2008 May 21 ;2:102-6. Epub 2008 May 21. PMID: 19517034

Article Published Date : May 21, 2008

Authors : Elvira Bormusov, Usha P Andley, Naomi Sharon, Levi Schächter, Assaf Lahav, Ahuva Dovrat

Study Type : In Vitro Study
Additional Links
Diseases : Eye Damage : CK(20) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Increasing exposure to smartphones can have a negative impact on ocular health in adolescents.

Pubmed Data : Ophthalmic Epidemiol. 2016 08 ;23(4):269-76. Epub 2016 Jun 2. PMID: 27254040

Article Published Date : Jan 01, 2016

Authors : Joowon Kim, Yunji Hwang, Seungheon Kang, Minhye Kim, Tae-Shin Kim, Jay Kim, Jeongmin Seo, Hyojeong Ahn, Sungjoon Yoon, Jun Pil Yun, Yae Lim Lee, Hyunsoo Ham, Hyeong Gon Yu, Sue K Park

Study Type : Human Study
Additional Links
Diseases : Eye Damage : CK(20) : AC(2)
Additional Keywords : Eye Damage : CK(20) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Fatigue (AC 14) (CK 132)

Cell phone radiation exposure is associated with a broad range of brain protein changes which may explain the association between cell phone use and adverse health

effects.

Pubmed Data : Electromagn Biol Med. 2012 Jan 20. Epub 2012 Jan 20. PMID: 22263702

Article Published Date : Jan 20, 2012

Authors : Adamantia F Fragopoulou, Athina Samara, Marianna H Antonelou, Anta Xanthopoulou, Aggeliki Papadopoulou, Konstantinos Vougas, Eugenia Koutsogiannopoulou, Ema Anastasiadou, Dimitrios J Stravopodis, George Th Tsangaris, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92) , Insomnia : CK(523) : AC(66) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Cell phone users experience subjective symptoms, like headaches and fatigue, associated with intensity of use.

Pubmed Data : Int J Occup Med Environ Health. 2014 Apr ;27(2):293-303. Epub 2014 Apr 1. PMID: 24692074

Article Published Date : Apr 01, 2014

Authors : Agata Szyjkowska, Elżbieta Gadzicka, Wiesław Szymczak, Alicja Bortkiewicz

Study Type : Human Study
Additional Links
Diseases : Fatigue : CK(312) : AC(49) , Headaches : CK(10) : AC(1)
Additional Keywords : Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Electrohypersensitive persons in this study were suffering not only from their symptoms, but also from economical and social problems.

Pubmed Data : Pathophysiology. 2012 Apr ;19(2):95-100. Epub 2012 Mar 27. PMID: 22458999

Article Published Date : Apr 01, 2012

Authors : Yasuko Kato, Olle Johansson

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)

Electromagnetic field exposure parameters seem to be of importance to the prevalence of some subjective symptoms: fatigue, headaches, and warmth sensations in the hands.

Pubmed Data : Bioelectromagnetics. 2004 Jan ;25(1):5-15. PMID: **14696048**

Article Published Date : Jan 01, 2004

Authors : Jonna Wilén, Rolf Hörnsten, Monica Sandström, Per Bjerle, Urban Wiklund, Olov Stensson, Eugene Lyskov, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Exposure to a continuous TETRA-like signal may lead to fatigue and trouble concentrating.

Pubmed Data : Occup Environ Med. 2011 May ;68(5):339-44. Epub 2010 Sep 23. PMID: **20864469**

Article Published Date : May 01, 2011

Authors : Rosa Nieto-Hernandez, Jonathan Williams, Anthony J Cleare, Sabine Landau, Simon Wessely, G James Rubin

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49)
Additional Keywords : Fatigue : CK(312) : AC(49)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Headaches, sleep disorders, nervousness, fatigue, and concentration were the most commonly reported complaints among electromagnetic field-exposed individuals in this questionnaire study.

Pubmed Data : Int J Hyg Environ Health. 2004 Feb ;207(2):141-50. PMID: **15031956**

Article Published Date : Feb 01, 2004

Authors : Martin Röösli, Mirjana Moser, Yvonne Baldinini, Martin Meier, Charlotte Braun-

Fahrländer

Study Type : Human Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Cognitive Decline/Dysfunction : CK(2113) : AC(426), Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Health care workers using MRIs reported a high prevalence of subjective symptoms associated with MRI exposure.

Pubmed Data : Electromagn Biol Med. 2015 Sep ;34(3):262-4. PMID: **26444203**

Article Published Date : Sep 01, 2015

Authors : G Zanotti, G Ligabue, F Gobba

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Dizziness : CK(1) : AC(1) , Fatigue : CK(312) : AC(49), Headache : CK(785) : AC(92) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

In a questionnaire, fatigue, headaches, tension, sleep disturbance, and dizziness were associated with mobile phone use.

Pubmed Data : Saudi Med J. 2004 Jun ;25(6):732-6. PMID: **15195201**

Article Published Date : Jun 01, 2004

Authors : Thamir Al-Khlaiwi, Sultan A Meo

Study Type : Human Study
Additional Links
Diseases : Dizziness : CK(1) : AC(1) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Large numbers of young people report impaired concentration and headache. The authors conclude

electromagnetic field exposure cannot be ruled out.

Pubmed Data : Pol Merkur Lekarski. 2005 Oct ;19(112):529-32. PMID: 16379318

Article Published Date : Oct 01, 2005

Authors : Agata Szyjkowska, Alicja Bortkiewicz, Wiesław Szymczak, Teresa Makowiec-Dabrowska

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Mobile phone use may be associated with the headaches, memory and cognitive impairment, fatigue, and sleeplessness experienced by medical students.

Pubmed Data : Int J Occup Med Environ Health. 2008 ;21(4):289-93. PMID: 19228576

Article Published Date : Jan 01, 2008

Authors : Muhammad Mujahid Khan

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Hearing Disorders : CK(1) : AC(1) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Some reported health complaints associated with mobile phone use in adolescents were tiredness, stress, headache, anxiety, concentration difficulties and sleep disturbances.

Pubmed Data : Environ Health. 2008 May 21 ;7:18. Epub 2008 May 21. PMID: 18495003

Article Published Date : May 21, 2008

Authors : Fredrik Söderqvist, Michael Carlberg, Lennart Hardell

Study Type : Human Study
Additional Links
Diseases : Anxiety : CK(48) : AC(8) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This questionnaire-based cross-sectional study reveals a consistent significant association between fatigue and mobile phone use in children.

Pubmed Data : BMJ Open. 2015 May 11 ;5(5):e007302. Epub 2015 May 11. PMID: 25967996

Article Published Date : May 11, 2015

Authors : Feizhou Zheng, Peng Gao, Mindi He, Min Li, Jin Tan, Daiwei Chen, Zhou Zhou, Zhengping Yu, Lei Zhang

Study Type : Human Study
Additional Links
Diseases : Fatigue : CK(312) : AC(49)
Additional Keywords : Fatigue : CK(312) : AC(49) , Children : CK(10) : AC(1) , Children : CK(10) : AC(1) , Children : CK(10) : AC(1) , Children : CK(10) : AC(1) , Children : CK(10) : AC(1) , Children : CK(10) : AC(1) , Children : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study found a statistically significant association between calling time and number of calls per day and the prevalence of warmth behind/around or on the ear, headaches, and fatigue.

Pubmed Data : Occup Med (Lond). 2001 Feb ;51(1):25-35. PMID: 11235824

Article Published Date : Feb 01, 2001

Authors : M Sandström, J Wilen, G Oftedal, K Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study found an association between mobile phone use and especially headache, concentration difficulties,

fatigue, sleep disturbances and warming of the ear in a dose-response manner.

Pubmed Data : Environ Health. 2017 06 2 ;16(1):51. Epub 2017 Jun 2. PMID: 28577556

Article Published Date : Jan 02, 2017

Authors : Raika Durusoy, Hür Hassoy, Ahmet Özkurt, Ali Osman Karababa

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

GGT (AC 1) (CK 2)

Mobile phone exposure induces oxidative stress in the brain, kidneys, and liver and also increases liver enzyme activity.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):279-84. Epub 2014 Apr 8. PMID: 24712749

Article Published Date : Jan 01, 2015

Authors : Merhan Mamdouh Ragy

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , GGT : CK(63) : AC(9) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Glioblastoma (AC 5) (CK 45)

Decreased survival of glioma cases is associated with long-term and high cumulative use of mobile phones.

Pubmed Data : Neuroepidemiology. 2013 ;40(2):101-8. Epub 2012 Oct 24. PMID: 23095687

Article Published Date : Jan 01, 2013

Authors : Lennart Hardell, Michael Carlberg

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioblastoma : CK(398) : AC(193)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Decreased survival of glioma patients with astrocytoma grade IV (glioblastoma multiforme) associated with long-term use of mobile and cordless phones.

Pubmed Data : Int J Environ Res Public Health. 2014 Oct 16 ;11(10):10790-805. Epub 2014 Oct 16. PMID: 25325361

Article Published Date : Oct 15, 2014

Authors : Michael Carlberg, Lennart Hardell

Study Type : Human Study
Additional Links
Diseases : Glioblastoma : CK(398) : AC(193)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

In this study, p53 gene expression in the peripheral zone of glioblastoma was increased in 65% of patients who used cell phones more than 3 hours a day and that this increase was significantly correlated with shorter overall

survival time.

Pubmed Data : Rare Tumors. 2014 Jul 30 ;6(3):5350. Epub 2014 Aug 8. PMID: 25276320

Article Published Date : Jul 30, 2014

Authors : Reza Akhavan-Sigari, Morteza Mazloum Farsi Baf, Vahid Ariabod, Veit Rohde, Saeed Rahighi

Study Type : Human Study
Additional Links
Diseases : Glioblastoma : CK(398) : AC(193) , Glioblastoma Multiforme : CK(200) : AC(88)
Additional Keywords : Glioblastoma Multiforme : CK(200) : AC(88) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Magnetic fields may upregulate chemoresistance in human glioblastoma.

Pubmed Data : Electromagn Biol Med. 2018 ;37(3):138-145. Epub 2018 May 30. PMID: 29846098

Article Published Date : Jan 01, 2018

Authors : Maryam Amiri, Mohsen Basiri, Hossein Eskandary, Zeinab Akbarnejad, Marzie Esmaeeli, Yaser Masoumi-Ardakani, Meysam Ahmadi-Zeidabadi

Study Type : Human In Vitro
Additional Links
Diseases : Glioblastoma : CK(398) : AC(193)
Pharmacological Actions : Antineoplastic Agents : CK(1594) : AC(982) , Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Chemoresistance upregulation : CK(7) : AC(6)

There is an increased risk for grade IV astrocytoma associated with occupational extremely low-frequency electromagnetic fields.

Pubmed Data : Am J Ind Med. 2017 May ;60(5):494-503. Epub 2017 Apr 10. PMID: 28394434

Article Published Date : May 01, 2017

Authors : Michael Carlberg, Tarmo Koppel, Mikko Ahonen, Lennart Hardell

Study Type : Human Study
Additional Links
Diseases : Astrocytoma : CK(12) : AC(6) , Astrocytoma: Grade IV : CK(3) : AC(1) , Glioblastoma :

CK(398) : AC(193)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Glioblastoma Multiforme (AC 1) (CK 10)

In this study, p53 gene expression in the peripheral zone of glioblastoma was increased in 65% of patients who used cell phones more than 3 hours a day and that this increase was significantly correlated with shorter overall survival time.

Pubmed Data : Rare Tumors. 2014 Jul 30 ;6(3):5350. Epub 2014 Aug 8. PMID: 25276320

Article Published Date : Jul 30, 2014

Authors : Reza Akhavan-Sigari, Morteza Mazloum Farsi Baf, Vahid Ariabod, Veit Rohde, Saeed Rahighi

Study Type : Human Study
Additional Links
Diseases : Glioblastoma : CK(398) : AC(193) , Glioblastoma Multiforme : CK(200) : AC(88)
Additional Keywords : Glioblastoma Multiforme : CK(200) : AC(88) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Glioma (AC 16) (CK 149)

A shift towards left sided tumor location for all adult

gliomas was noted in this study following the introduction of mobile phones.

Pubmed Data : Asian Pac J Cancer Prev. 2012 ;13(11):5857-63. PMID: 23317269

Article Published Date : Jan 01, 2012

Authors : Micha Barchana, Menahem Margaliot, Irena Liphshitz

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169), Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

According to the Hill criteria, these authors argue that radiofrequency electromagnetic fields should be considered to cause glioma and acoustic neuroma.

Pubmed Data : Rev Environ Health. 2013 ;28(2-3):97-106. PMID: 24192496

Article Published Date : Jan 01, 2013

Authors : Lennart Hardell, Michael Carlberg

Study Type : Review
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Beginning cell phone use earlier in life increased the odd ratio for glioma in this study.

Pubmed Data : Pathophysiology. 2015 Mar ;22(1):1-13. Epub 2014 Oct 29. PMID: 25466607

Article Published Date : Mar 01, 2015

Authors : Lennart Hardell, Michael Carlberg

Study Type : Human Study
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and

Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Cancer epidemiology update, following the 2011 IARC evaluation of radiofrequency electromagnetic fields (Monograph 102).

Pubmed Data : Environ Res. 2018 Jul 17. Epub 2018 Jul 17. PMID: 30196934

Article Published Date : Jul 16, 2018

Authors : Anthony B Miller, L Lloyd Morgan, Iris Udasin, Devra Lee Davis

Study Type : Commentary
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

Cell phone use may be associated with the anatomical distribution of glioma.

Pubmed Data : Ir Med J. 2003 Sep ;96(8):240-2. PMID: 14653376

Article Published Date : Sep 01, 2003

Authors : A Ali Kahn, D F O'Brien, P Kelly, J P Phillips, D Rawluk, C Bolger, C N Pidgeon

Study Type : Human Study
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Electromagnetic field exposure alters gene expression in human glioma cells.

Pubmed Data : Toxicol Mech Methods. 2005 ;15(2):115-20. PMID: 20021071

Article Published Date : Jan 01, 2005

Authors : R E Savage, M H Kanitz, W G Lotz, D Conover, E M Hennessey, W H Hanneman, F A Witzmann

Study Type : Human In Vitro
Additional Links
Diseases : Glioma : CK(333) : AC(169)

Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Long-term cell phone use is associated with risk of adult glioma.

Pubmed Data : World Neurosurg. 2018 Jul ;115:e629-e636. Epub 2018 Apr 28. PMID: 29709736

Article Published Date : Jul 01, 2018

Authors : Peng Wang, Chongxian Hou, Yanwen Li, Dong Zhou

Study Type : Meta Analysis
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The results indicate that using a cell phone for 10 years or more approximately doubles the risk of being diagnosed with a brain tumor on the same side of the head as that preferred for cell phone use.

Pubmed Data : Surg Neurol. 2009 Sep ;72(3):205-14; discussion 214-5. Epub 2009 Mar 27. PMID: 19328536

Article Published Date : Sep 01, 2009

Authors : Vini G Khurana, Charles Teo, Michael Kundi, Lennart Hardell, Michael Carlberg

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

There is a possible risk of glioma in the most heavily exposed part of the brain with long-term cell phone use.

Pubmed Data : Int J Cancer. 2007 Apr 15 ;120(8):1769-75. PMID: 17230523

Article Published Date : Apr 15, 2007

Authors : Anna Lahkola, Anssi Auvinen, Jani Raitanen, Minouk J Schoemaker, Helle C Christensen,

Maria Feychting, Christoffer Johansen, Lars Klaeboe, Stefan Lönn, Anthony J Swerdlow, Tore Tynes, Tiina Salminen

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Glioma : CK(333) : AC(169)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is an increased risk of glioma and meningioma from cumulative exposure to radiofrequency electromagnetic fields.

Pubmed Data : Environ Int. 2018 10 ;119:353-365. Epub 2018 Jul 8. PMID: 29996112

Article Published Date : Jan 10, 2018

Authors : Javier Vila, Michelle C Turner, Esther Gracia-Lavedan, Jordi Figuerola, Joseph D Bowman, Laurel Kincl, Lesley Richardson, Geza Benke, Martine Hours, Daniel Krewski, Dave McLean, Marie-Elise Parent, Siegal Sadetzki, Klaus Schlaefer, Brigitte Schlehofer, Joachim Schüz, Jack Siemiatycki, Martie van Tongeren, Elisabeth Cardis,

Study Type : Human Study
Additional Links
Diseases : Glioma : CK(333) : AC(169) , Meningioma : CK(26) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There were suggestions of an increased risk of glioma in long-term mobile phone users with high radiofrequency exposure from mobile phones in this study.

Pubmed Data : Occup Environ Med. 2011 Sep ;68(9):631-40. Epub 2011 Jun 9. PMID: 21659469

Article Published Date : Sep 01, 2011

Authors : E Cardis, B K Armstrong, J D Bowman, G G Giles, M Hours, D Krewski, M McBride, M E Parent, S Sadetzki, A Woodward, J Brown, A Chetrit, J Figuerola, C Hoffmann, A Jarus-Hakak, L Montestruq, L Nadon, L Richardson, R Villegas, M Vrijheid

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This article is critical of the apparent incidence increase of gliomas in Nordic countries.

Pubmed Data : Epidemiology. 2012 Mar ;23(2):301-7. PMID: 22249239

Article Published Date : Mar 01, 2012

Authors : Isabelle Deltour, Anssi Auvinen, Maria Feychting, Christoffer Johansen, Lars Klaeboe, Risto Sankila, Joachim Schüz

Study Type : Commentary
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This meta-analysis demonstrates an increased risk of glioma associated with mobile phone use.

Pubmed Data : PLoS One. 2017 ;12(5):e0175136. Epub 2017 May 4. PMID: 28472042

Article Published Date : Jan 01, 2017

Authors : Ming Yang, WenWen Guo, ChunSheng Yang, JianQin Tang, Qian Huang, ShouXin Feng, AiJun Jiang, XiFeng Xu, Guan Jiang

Study Type : Meta Analysis
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This meta-analysis gave a consistent pattern of an association between mobile phone use and ipsilateral glioma and acoustic neuroma with a latency period greater than or equal to 10 years.

Pubmed Data : Int J Oncol. 2008 May ;32(5):1097-103. PMID: 18425337

Article Published Date : May 01, 2008

Authors : Lennart Hardell, Michael Carlberg, Fredrik Söderqvist, Kjell Hansson Mild

Study Type : Meta Analysis
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This review yielded a pattern of an increased risk for glioma and acoustic neuroma after more than 10 years mobile phone use. The authors conclude that current standard for exposure to microwaves during mobile phone use is not safe for long-term exposure.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):113-22. Epub 2009 Mar 5. PMID: 19268551

Article Published Date : Aug 01, 2009

Authors : Lennart Hardell, Michael Carlberg, Kjell Hansson Mild

Study Type : Review
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study demonstrated an increased risk for glioma and use of mobile or cordless phone. The risk increased as latency time and cumulative use in hours increased and was highest in subjects with first use before the age of 20.

Pubmed Data : Int J Oncol. 2011 May ;38(5):1465-74. Epub 2011 Feb 17. PMID: 21331446

Article Published Date : May 01, 2011

Authors : Lennart Hardell, Michael Carlberg, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Headache (AC 20) (CK 183)

Average daily phone call duration is associated with severity of headaches in both men and women.

Pubmed Data : Environ Health Toxicol. 2016 ;31:e2016022. Epub 2016 Oct 26. PMID: 27788568

Article Published Date : Jan 01, 2016

Authors : Yong Min Cho, Hee Jin Lim, Hoon Jang, Kyunghee Kim, Jae Wook Choi, Chol Shin, Seung Ku Lee, Jong Hwa Kwon, Nam Kim

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92) , Headache : CK(785) : AC(92) , Headache : CK(785) : AC(92), Headache : CK(785) : AC(92) , Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Cell phone radiation exposure is associated with a broad range of brain protein changes which may explain the association between cell phone use and adverse health effects.

Pubmed Data : Electromagn Biol Med. 2012 Jan 20. Epub 2012 Jan 20. PMID: 22263702

Article Published Date : Jan 20, 2012

Authors : Adamantia F Fragopoulou, Athina Samara, Marianna H Antonelou, Anta Xanthopoulou, Aggeliki Papadopoulou, Konstantinos Vougas, Eugenia Koutsogiannopoulou, Ema Anastasiadou, Dimitrios J Stravopodis, George Th Tsangaris, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Insomnia : CK(523) : AC(66) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Electrohypersensitive persons in this study were suffering not only from their symptoms, but also from economical and social problems.

Pubmed Data : Pathophysiology. 2012 Apr ;19(2):95-100. Epub 2012 Mar 27. PMID: 22458999

Article Published Date : Apr 01, 2012

Authors : Yasuko Kato, Olle Johansson

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Electromagnetic field exposure parameters seem to be of importance to the prevalence of some subjective symptoms: fatigue, headaches, and warmth sensations in the hands.

Pubmed Data : Bioelectromagnetics. 2004 Jan ;25(1):5-15. PMID: 14696048

Article Published Date : Jan 01, 2004

Authors : Jonna Wilén, Rolf Hörnsten, Monica Sandström, Per Bjerle, Urban Wiklund, Olov Stensson, Eugene Lyskov, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Headaches, sleep disorders, nervousness, fatigue, and concentration were the most commonly reported complaints among electromagnetic field-exposed individuals in this questionnaire study.

Pubmed Data : Int J Hyg Environ Health. 2004 Feb ;207(2):141-50. PMID: 15031956

Article Published Date : Feb 01, 2004

Authors : Martin Röösli, Mirjana Moser, Yvonne Baldinini, Martin Meier, Charlotte Braun-Fahrländer

Study Type : Human Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Cognitive Decline/Dysfunction : CK(2113) : AC(426), Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Health care workers using MRIs reported a high prevalence of subjective symptoms associated with MRI exposure.

Pubmed Data : Electromagn Biol Med. 2015 Sep ;34(3):262-4. PMID: 26444203

Article Published Date : Sep 01, 2015

Authors : G Zanotti, G Ligabue, F Gobba

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Dizziness : CK(1) : AC(1) , Fatigue : CK(312) : AC(49), Headache : CK(785) : AC(92) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

In a questionnaire, fatigue, headaches, tension, sleep disturbance, and dizziness were associated with mobile phone use.

Pubmed Data : Saudi Med J. 2004 Jun ;25(6):732-6. PMID: 15195201

Article Published Date : Jun 01, 2004

Authors : Thamir Al-Khlaiwi, Sultan A Meo

Study Type : Human Study
Additional Links
Diseases : Dizziness : CK(1) : AC(1) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Large numbers of young people report impaired

concentration and headache. The authors conclude electromagnetic field exposure cannot be ruled out.

Pubmed Data : Pol Merkur Lekarski. 2005 Oct ;19(112):529-32. PMID: 16379318

Article Published Date : Oct 01, 2005

Authors : Agata Szyjkowska, Alicja Bortkiewicz, Wiesław Szymczak, Teresa Makowiec-Dabrowska

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Low-intensity very high frequency radiation exposure is associated with an increased incidence of headache, insomnia and amnesia.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2004 Aug ;22(4):267-9. PMID: 15355705

Article Published Date : Aug 01, 2004

Authors : Zheng-Quan Yuan, Feng Li, Deng-Gao Wang, Yong Wang, Ping Zhang

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92) , Insomnia : CK(523) : AC(66) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Mobile phone use may be associated with the headaches, memory and cognitive impairment, fatigue, and sleeplessness experienced by medical students.

Pubmed Data : Int J Occup Med Environ Health. 2008 ;21(4):289-93. PMID: 19228576

Article Published Date : Jan 01, 2008

Authors : Muhammad Mujahid Khan

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Hearing Disorders : CK(1) : AC(1) , Memory Disorders : CK(666) : AC(218)

Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

No consistent associations between the use of electronic media and different types of headache were observed in adolescents of this population study.

Pubmed Data : BMC Neurol. 2010 Feb 9 ;10:12. Epub 2010 Feb 9. PMID: **20144204**

Article Published Date : Feb 09, 2010

Authors : Astrid Milde-Busch, Rüdiger von Kries, Silke Thomas, Sabine Heinrich, Andreas Straube, Katja Radon

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Proximity to AC power lines positively associated with depressive symptoms and headaches

Pubmed Data : Am J Epidemiol. 1993 Feb 1 ;137(3):318-30. PMID: **8452140**

Article Published Date : Feb 01, 1993

Authors : C Poole, R Kavet, D P Funch, K Donelan, J M Charry, N A Dreyer

Study Type : Review
Additional Links
Diseases : Depressive Syndrome : CK(51) : AC(4) , Headache : CK(785) : AC(92)
Additional Keywords : Hydro Lines : CK(1) : AC(1) , Proximity : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Some reported health complaints associated with mobile phone use in adolescents were tiredness, stress, headache, anxiety, concentration difficulties and sleep disturbances.

Pubmed Data : Environ Health. 2008 May 21 ;7:18. Epub 2008 May 21. PMID: **18495003**

Article Published Date : May 21, 2008

Authors : Fredrik Söderqvist, Michael Carlberg, Lennart Hardell

Study Type : Human Study

Additional Links
Diseases : Anxiety : CK(48) : AC(8) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Swiss Survey: Effects of exposure to electromagnetic fields

Pubmed Data : Soz Praventivmed. 2006 ;51(4):202-9. PMID: 17193782

Article Published Date : Jan 01, 2006

Authors : Nadja Schreier, Anke Huss, Martin Röösli

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92), Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

There was a a correlation between subjective symptoms and distance from base station in this study.

Pubmed Data : Int J Occup Med Environ Health. 2012 Mar ;25(1):31-40. Epub 2012 Jan 5. PMID: 22219055

Article Published Date : Mar 01, 2012

Authors : Alicja Bortkiewicz, Elżbieta Gadzicka, Agata Szyjkowska, Piotr Politański, Paweł Mamrot, Wiesław Szymczak, Marek Zmyślony

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92), Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

There was a significant relation of some symptoms to measured power density of high-frequency electromagnetic fields; this was highest for headaches.

Pubmed Data : Occup Environ Med. 2006 May ;63(5):307-13. PMID: 16621850

Article Published Date : May 01, 2006

Authors : H-P Hutter, H Moshammer, P Wallner, M Kundi

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92)

Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

There was an association between headaches, migraines, and dizziness and proximity to radiofrequency-emitting military antennae.

Pubmed Data : Occup Environ Med. 2007 Jun ;64(6):402-8. Epub 2007 Jan 25. PMID: 17259164

Article Published Date : Jun 01, 2007

Authors : A W Preece, A G Georgiou, E J Dunn, S C Farrow

Study Type : Human Study
Additional Links
Diseases : Dizziness : CK(1) : AC(1) , Headache : CK(785) : AC(92) , Migraines : CK(20) : AC(2)
Additional Keywords : Migraines : CK(20) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

This study found a statistically significant association between calling time and number of calls per day and the prevalence of warmth behind/around or on the ear, headaches, and fatigue.

Pubmed Data : Occup Med (Lond). 2001 Feb ;51(1):25-35. PMID: 11235824

Article Published Date : Feb 01, 2001

Authors : M Sandström, J Wilen, G Oftedal, K Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Additional Keywords : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study found an association between mobile phone use and especially headache, concentration difficulties, fatigue, sleep disturbances and warming of the ear in a dose-response manner.

Pubmed Data : Environ Health. 2017 06 2 ;16(1):51. Epub 2017 Jun 2. PMID: 28577556

Article Published Date : Jan 02, 2017

Authors : Raika Durusoy, Hür Hassoy, Ahmet Özkurt, Ali Osman Karababa

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This study indicates that RF-EMF exposure may contribute to headaches.

Pubmed Data : Bioelectromagnetics. 2008 Apr ;29(3):185-96. PMID: 18044740

Article Published Date : Apr 01, 2008

Authors : Lena Hillert, Torbjörn Akerstedt, Arne Lowden, Clairy Wiholm, Niels Kuster, Sven Ebert, Clementine Boutry, Scott Douglas Moffat, Mats Berg, Bengt Birger Arnetz

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Headache: Migraine (AC 1) (CK 10)

Mobile phone use is significantly associated with headaches, migraines, and skin itches in children.

Pubmed Data : J Formos Med Assoc. 2015 Jul ;114(7):598-604. Epub 2014 Aug 10. PMID: 25115529

Article Published Date : Jul 01, 2015

Authors : Chang-Ta Chiu, Ya-Hui Chang, Chu-Chieh Chen, Ming-Chung Ko, Chung-Yi Li

Study Type : Human Study
Additional Links
Diseases : Headache: Migraine : CK(661) : AC(77) , Headaches : CK(10) : AC(1)
Additional Keywords : Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1), Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Headaches (AC 3) (CK 30)

Cell phone users experience subjective symptoms, like headaches and fatigue, associated with intensity of use.

Pubmed Data : Int J Occup Med Environ Health. 2014 Apr ;27(2):293-303. Epub 2014 Apr 1. PMID: 24692074

Article Published Date : Apr 01, 2014

Authors : Agata Szyjkowska, Elżbieta Gadzicka, Wiesław Szymczak, Alicja Bortkiewicz

Study Type : Human Study
Additional Links
Diseases : Fatigue : CK(312) : AC(49) , Headaches : CK(10) : AC(1)
Additional Keywords : Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Mobile phone use is significantly associated with headaches, migraines, and skin itches in children.

Pubmed Data : J Formos Med Assoc. 2015 Jul ;114(7):598-604. Epub 2014 Aug 10. PMID: 25115529

Article Published Date : Jul 01, 2015

Authors : Chang-Ta Chiu, Ya-Hui Chang, Chu-Chieh Chen, Ming-Chung Ko, Chung-Yi Li

Study Type : Human Study
Additional Links
Diseases : Headache: Migraine : CK(661) : AC(77) , Headaches : CK(10) : AC(1)
Additional Keywords : Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1), Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1) , Headaches : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Several factors related to mobile phone use are associated with tinnitus, depressed feelings, and

sleepiness at school in adolescents.

Pubmed Data : Environ Health. 2013 Oct 22 ;12:90. Epub 2013 Oct 22. PMID: 24148357

Article Published Date : Oct 22, 2013

Authors : Mary Redmayne, Euan Smith, Michael J Abramson

Study Type : Human Study
Additional Links
Diseases : Headaches : CK(10) : AC(1) , Tinnitus : CK(226) : AC(28)
Additional Keywords : Adolescent Development : CK(2) : AC(1) , Adolescent Development : CK(2) : AC(1), Adolescent Development : CK(2) : AC(1) , Adolescent Development : CK(2) : AC(1) , Adolescent Development : CK(2) : AC(1), Adolescent Development : CK(2) : AC(1) , Adolescent Development : CK(2) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Hearing Disorders (AC 9) (CK 74)

Long-term and intensive GSM and CDMA mobile phone use may cause damage to cochlea as well as the auditory cortex.

Pubmed Data : Otolaryngol Head Neck Surg. 2011 Apr ;144(4):581-5. Epub 2011 Feb 14. PMID: 21493239

Article Published Date : Apr 01, 2011

Authors : Naresh K Panda, Rahul Modi, Sanjay Munjal, Ramandeep S Virk

Study Type : Human Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Long-term and intensive mobile phone use may cause inner ear damage.

Pubmed Data : J Otolaryngol Head Neck Surg. 2010 Feb ;39(1):5-11. PMID: **20122338**

Article Published Date : Feb 01, 2010

Authors : Naresh K Panda, Rishabh Jain, Jaimanti Bakshi, Sanjay Munjal

Study Type : Human Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Microscopic analyses reveal cochlear apoptosis and necrosis associated with exposure to both 900 MHz and 1800 MHz electromagnetic fields in rats.

Pubmed Data : J Laryngol Otol. 2014 May ;128(5):400-5. Epub 2014 May 1. PMID: **24784924**

Article Published Date : May 01, 2014

Authors : E Seckin, F Suren Basar, S Atmaca, F F Kaymaz, A Suzer, A Akar, E Sunan, M Koyuncu

Study Type : Animal Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Necrotic : CK(5) : AC(3)

Mobile phone electromagnetic fields may impact auditory pathway transmission.

Pubmed Data : Indian J Otolaryngol Head Neck Surg. 2013 Dec ;65(Suppl 3):645-9. Epub 2013 Sep 7. PMID: **24427730**

Article Published Date : Dec 01, 2013

Authors : Shilpa Khullar, Archana Sood, Sanjay Sood

Study Type : Human Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Mobile phone use may be associated with the headaches, memory and cognitive impairment, fatigue, and sleeplessness experienced by medical students.

Pubmed Data : Int J Occup Med Environ Health. 2008 ;21(4):289-93. PMID: 19228576

Article Published Date : Jan 01, 2008

Authors : Muhammad Mujahid Khan

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Hearing Disorders : CK(1) : AC(1) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Radiofrequency exposure decreases brain-derived neurotrophic factor and glial-derived neurotrophic factor in the auditory system of rats.

Pubmed Data : Neurosci Lett. 2014 Apr 3 ;564:78-82. Epub 2014 Feb 16. PMID: 24548626

Article Published Date : Apr 03, 2014

Authors : Dhiraj Maskey, Myeung Ju Kim

Study Type : Animal Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The results of traditional audiometer indicated that radiofrequency promotes sensorineural hearing loss and affects cochlea parts related to 4000 Hz and 8000 Hz.

Pubmed Data : Arch Med Res. 2004 Nov-Dec;35(6):517-21. PMID: 15631877

Article Published Date : Nov 01, 2004

Authors : M Faruk Oktay, Suleyman Dasdag, Mesut Akdere, Sebahattin Cureoglu, Musa Cebe, Mehmet Yazicioglu, Ismail Topcu, Faruk Meric

Study Type : Human Study

Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)

This study showed an association between the use of mobile phones and hearing and vision complaints.

Pubmed Data : Int J Occup Med Environ Health. 2005 ;18(1):53-7. PMID: **16052891**

Article Published Date : Jan 01, 2005

Authors : Sultan A Meo, Abdul M Al-Drees

Study Type : Human Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1) , Vision Disorders : CK(71) : AC(8)
Additional Keywords : Vision Disorders : CK(71) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study shows that a higher degree of hearing loss is associated with long-term exposure to electromagnetic field generated by cellular phones.

Pubmed Data : Electromagn Biol Med. 2006 ;25(1):13-21. PMID: **16595330**

Article Published Date : Jan 01, 2006

Authors : M Faruk Oktay, Suleyman Dasdag

Study Type : Human Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Hearing Loss (AC 1) (CK 10)

Chronic mobile phone usage revealed high frequency hearing loss in the dominant ear compared to the non dominant ear.

Pubmed Data : Indian J Otolaryngol Head Neck Surg. 2014 Jan ;66(Suppl 1):169-72. Epub 2011 Dec 15. PMID: **24533378**

Article Published Date : Jan 01, 2014

Authors : P Velayutham, Gopala Krishnan Govindasamy, R Raman, N Prepageran, K H Ng

Study Type : Human Study
Additional Links
Diseases : Hearing Loss : CK(112) : AC(28)
Additional Keywords : Hearing Loss : CK(112) : AC(28)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

Heart Rate Variability: Increased (AC 1) (CK 10)

In this study, EMF has a seemingly weak interaction with heart rate variability parameters.

Pubmed Data : Bioelectromagnetics. 2007 Feb ;28(2):122-9. PMID: **17004239**

Article Published Date : Feb 01, 2007

Authors : Marta Parazzini, Paolo Ravazzani, Gabriella Tognola, György Thuróczy, Ferenc B Molnar, Alessio Sacchettini, Gianluca Ardesi, Luca Tommaso Mainardi

Study Type : Human Study
Additional Links
Diseases : Heart Rate Variability: Increased : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124)

Hypersalivation (AC 3) (CK 30)

A significantly higher saliva secretion rate was noticed in the dominant side of mobile phone use compared with that in the non-dominant side.

Pubmed Data : Oral Dis. 2010 Mar ;16(2):146-50. Epub 2009 Sep 8. PMID: 19744173

Article Published Date : Mar 01, 2010

Authors : O Goldwein, D J Aframian

Study Type : Human Study
Additional Links
Diseases : Hypersalivation : CK(30) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Heavy users of mobile phones demonstrated increased salivary flow rate, blood flow rate, and volume of parotid glands.

Pubmed Data : Oral Surg Oral Med Oral Pathol Oral Radiol. 2012 Aug ;114(2):200-6. PMID: 22769405

Article Published Date : Aug 01, 2012

Authors : Stuti Bhargava, Mukta Bhagwandas Motwani, Vinod Madan Patni

Study Type : Human Study
Additional Links
Diseases : Hypersalivation : CK(30) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Mobile phone use is associated with changes in salivary output in human subjects.

Pubmed Data : J Laryngol Otol. 2014 May ;128(5):454-62. Epub 2014 Apr 17. PMID: 24739140

Article Published Date : May 01, 2014

Authors : M S Hashemipour, M Yarbakht, A Gholamhosseinian, H Famori

Study Type : Human Study
Additional Links
Diseases : Hypersalivation : CK(30) : AC(3)
Additional Keywords : Hypersalivation : CK(30) : AC(3), Hypersalivation : CK(30) : AC(3), Hypersalivation : CK(30) : AC(3), Hypersalivation : CK(30) : AC(3), Hypersalivation : CK(30) : AC(3), Hypersalivation : CK(30) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Hypertension (AC 4) (CK 23)

Changes in the circulatory system were observed in subjects at exposure levels considerably lower than those set as admissible according to the ICNIRP standards.

Pubmed Data : Med Pr. 2003 ;54(3):291-7. PMID: 14669585

Article Published Date : Jan 01, 2003

Authors : Alicja Bortkiewicz, Elzbieta Gadzicka, Marek Zmyślony

Study Type : Human Study
Additional Links
Diseases : Hypertension : CK(4573) : AC(670)
Additional Keywords : Hypertension : CK(4573) : AC(670)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Significant alterations in arterial blood pressure were observed in rats exposed to electromagnetic pulses while heart rate was not altered.

Pubmed Data : Int J Radiat Biol. 2007 Jun ;83(6):421-9. PMID: 17487681

Article Published Date : Jun 01, 2007

Authors : Bao-Feng Li, Guo-Zhen Guo, Dong-Qing Ren, Jing-Li, Ruo-Bing Zhang

Study Type : Animal Study
Additional Links
Diseases : Hypertension : CK(4573) : AC(670), Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124)

These data show that the radiofrequency electromagnetic radiation contributes to adverse effects on the cardiovascular system.

Pubmed Data : Int J Hyg Environ Health. 2006 Mar ;209(2):133-8. Epub 2005 Nov 10. PMID: 16503299

Article Published Date : Mar 01, 2006

Authors : Katia Vangelova, Christo Deyanov, Mishel Israel

Study Type : Human Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Dyslipidemias : CK(638) : AC(150) , Hypertension : CK(4573) : AC(670)
Additional Keywords : Hypertension : CK(4573) : AC(670)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This review summarizes potential mechanisms of the biological effects on the human body.

Pubmed Data : Med Pr. 2001 ;52(2):101-6. PMID: 11761657

Article Published Date : Jan 01, 2001

Authors : A Bortkiewicz

Study Type : Review
Additional Links
Diseases : Hypertension : CK(4573) : AC(670)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Hypothyroidism (AC 5) (CK 18)

900 MHz EMF emitted by cellular telephones decrease serum TSH and T3-T4 levels in rats.

Pubmed Data : Toxicol Lett. 2005 Jul 4 ;157(3):257-62. Epub 2005 Apr 11. PMID: 15917150

Article Published Date : Jul 04, 2005

Authors : Ahmet Koyu, Gokhan Cesur, Fehmi Ozguner, Mehmet Akdogan, Hakan Mollaoglu, Sukru Ozen

Study Type : Animal Study
Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

Electromagnetic fields exposure induces hypothyroidism in rats.

Pubmed Data : Radiats Biol Radioecol. 2003 Sep-Oct;43(5):597-600. PMID: **14658297**

Article Published Date : Sep 01, 2003

Authors : O S Izmest'eva, E M Parshkov, L P Zhavoronkov, V I Izmest'ev, L V Litovkina, Ia V Voron'ko

Study Type : Animal Study
Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Long-term exposure to an electromagnetic field affects bone and thyroid metabolism and also increases oxidative stress index by increasing the total oxidant status and decreasing the antioxidant status.

Pubmed Data : Onco Targets Ther. 2016 ;9:745-54. Epub 2016 Feb 12. PMID: **26929645**

Article Published Date : Jan 01, 2016

Authors : Halil Kunt, İhsan Şentürk, Yücel Gönül, Mehmet Korkmaz, Ahmet Ahsen, Ömer Hazman, Ahmet Bal, Abdurrahman Genç, Ahmet Songur

Study Type : Human Study
Additional Links
Diseases : Bone Diseases : CK(18) : AC(6) , Hypothyroidism : CK(584) : AC(90) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21) , Oxidant : CK(122) : AC(48)

Low frequency electromagnetic fields alter the

morphology of the rat thyroid gland and induce hypothyroidism.

Pubmed Data : Med Pregl. 2001 Mar-Apr;54(3-4):119-27. PMID: 11759202

Article Published Date : Mar 01, 2001

Authors : V Rajković, M Matavulj, T Lukac, D Gledić, L Babić, B Lazetić

Study Type : Animal Study
Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

Pulse modulated 900 MHz radiation inhibits thyroid hormone secretion and stimulates thyroid cell apoptosis.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1106-16. Epub 2010 Sep 1. PMID: 20807179

Article Published Date : Dec 01, 2010

Authors : Meriç Arda Eşmekaya, Nesrin Seyhan, Suna Ömeroğlu

Study Type : Animal Study
Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Additional Keywords : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Endocrine Disruptor: Thyroid : CK(73) : AC(21), Thyroid Suppressive : CK(18) : AC(5)

Infant Neurological Development (AC 1) (CK 2)

10 GHz electromagnetic field radiation induces development delay and may affect fertility is Drosophilia melanogaster.

Pubmed Data : Int J Radiat Biol. 2006 Jun ;82(6):435-41. PMID: 16846978

Article Published Date : Jun 01, 2006

Authors : Emel Atli, Hacer Unlü

Study Type : Animal Study
Additional Links
Diseases : Infant Neurological Development : CK(58) : AC(9) , Infertility : CK(1359) : AC(316) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Infants: Low Birth Weight (AC 3) (CK 30)

Maternal residential proximity to sources of extremely low frequency electromagnetic fields and adverse birth outcomes in a UK cohort.

Pubmed Data : Bioelectromagnetics. 2014 Apr ;35(3):201-9. Epub 2014 Jan 31. PMID: 24482293

Article Published Date : Mar 31, 2014

Authors : Frank de Vocht, Kimberly Hannam, Philip Baker, Raymond Agius

Study Type : Human Study
Additional Links
Diseases : Infants: Low Birth Weight : CK(144) : AC(15)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Residential proximity to electromagnetic field sources and birth weight.

Pubmed Data : Environ Int. 2014 Aug ;69:51-7. Epub 2014 May 7. PMID: 24815339

Article Published Date : Jul 31, 2014

Authors : Frank de Vocht, Brian Lee

Study Type : Human Study
Additional Links
Diseases : Infants: Low Birth Weight : CK(144) : AC(15)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

The findings of this study suggest that shortwaves have potentially harmful effects on pregnancy outcome, specifically low birth weight.

Pubmed Data : Am J Ind Med. 2001 May ;39(5):499-504. PMID: 11333411

Article Published Date : May 01, 2001

Authors : Y Lerman, R Jacubovich, M S Green

Study Type : Human Study
Additional Links
Diseases : Infants: Low Birth Weight : CK(144) : AC(15)
Additional Keywords : Infants: Low Birth Weight : CK(144) : AC(15) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Infertility (AC 19) (CK 87)

10 GHz electromagnetic field radiation induces development delay and may affect fertility is Drosophilia melanogaster.

Pubmed Data : Int J Radiat Biol. 2006 Jun ;82(6):435-41. PMID: 16846978

Article Published Date : Jun 01, 2006

Authors : Emel Atli, Hacer Unlü

Study Type : Animal Study
Additional Links
Diseases : Infant Neurological Development : CK(58) : AC(9) , Infertility : CK(1359) : AC(316) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

1800 MHz increases oxidative stress and apoptosis in mouse-derived sperm cells, but N-acetyl cysteine and

autophagy prevented EMF-associated cell death.

Pubmed Data : Toxicol Lett. 2014 Aug 4 ;228(3):216-24. Epub 2014 May 9. PMID: 24813634

Article Published Date : Aug 04, 2014

Authors : Kaijun Liu, Guowei Zhang, Zhi Wang, Yong Liu, Jianyun Dong, Xiaomei Dong, Jinyi Liu, Jia Cao, Lin Ao, Shaoxiang Zhang

Study Type : In Vitro Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Additional Keywords : Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Dose-dependent DNA damage resulting from mobile phone radiation is attentuated by pretreatment with melatonin in vitro.

Pubmed Data : Int J Radiat Biol. 2013 Nov ;89(11):993-1001. Epub 2013 Sep 3. PMID: 23952262

Article Published Date : Nov 01, 2013

Authors : Chuan Liu, Peng Gao, Shang-Cheng Xu, Yuan Wang, Chun-Hai Chen, Min-Di He, Zheng-Ping Yu, Lei Zhang, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Genoprotective : CK(413) : AC(148) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Exposure to mobile signal jammers significantly reduces sperm motility in human sperm samples.

Pubmed Data : J Hum Reprod Sci. 2013 Apr ;6(2):124-8. PMID: 24082653

Article Published Date : Apr 01, 2013

Authors : Smj Mortazavi, Me Parsanezhad, M Kazempour, P Ghahramani, Ar Mortazavi, M Davari

Study Type : Human In Vitro
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Exposure to non-ionizing electromagnetic radiation of public risk prevention instruments threatens the quality of spermatozoids.

Pubmed Data : Reprod Domest Anim. 2018 Sep 7. Epub 2018 Sep 7. PMID: 30192989

Article Published Date : Sep 06, 2018

Authors : Filip Tirpak, Tomas Slanina, Marian Tomka, Radoslav Zidek, Marko Halo, Peter Ivanic, Agnieszka Gren, Grzegorz Formicki, Katarzyna Stachanczyk, Norbert Lukac, Peter Massanyi

Study Type : In Vitro Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Low Dose Ionizing Radiation : CK(52) : AC(24)

Extremely low-frequency magnetic field may be harmful to fertility recovery in males affected by reversible testicular damage.

Pubmed Data : Electromagn Biol Med. 2014 Jun ;33(2):139-46. Epub 2013 Jun 19. PMID: 23781997

Article Published Date : Jun 01, 2014

Authors : Bruno Mendes Tenorio, Moisés Bonifacio Alves Ferreira Filho, George Chaves Jimenez, Rosana Nogueira de Morais, Christina Alves Peixoto, Romildo de Albuquerque Nogueira, Valdemiro Amaro da Silva Junior

Study Type : Animal Study

Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

High-intensity electromagnetic radiation associated with cell phone exposure is very likely to induce the death of embryonic cells and decrease the chance of their implantation, thereby posing a high risk to pregnancy.

Pubmed Data : J Huazhong Univ Sci Technolog Med Sci. 2012 Oct ;32(5):755-9. Epub 2012 Oct 18. PMID: **23073809**

Article Published Date : Oct 01, 2012

Authors : Wenhui Liu, Xinmin Zheng, Zaiqing Qu, Ming Zhang, Chun Zhou, Ling Ma, Yuanzhen Zhang

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Prenatal Nutrition: Health of the Offspring : CK(246) : AC(35)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Microwave radiation exerts antiproliferative and apoptotic effects on a spermatocyte cell line in vitro.

Pubmed Data : Zhonghua Nan Ke Xue. 2014 Mar ;20(3):201-6. PMID: **24738454**

Article Published Date : Mar 01, 2014

Authors : Lei Xue, Shui-Ming Wang, Hao-Yu Chen, Rui-Yun Peng, Hong-Yan Zuo, Li-Feng Wang, Li Zhao, Shao-Xia Wang

Study Type : In Vitro Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Microwaves from mobile phone exposure induce morphological changes and apoptosis in rabbit

epididymis.

Pubmed Data : Andrologia. 2015 Aug ;47(6):700-5. Epub 2014 Jul 25. PMID: 25060044

Article Published Date : Aug 01, 2015

Authors : E Azadi Oskouyi, F Rajaei, A Safari Variani, M R Sarokhani, A Javadi

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194), Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Anti-Androgenic : CK(20) : AC(2), Apoptotic : CK(8) : AC(7)

Mid- and high-intensity electromagnetic radiation at 935 MHz can reduce the fertilization rate in mice.

Pubmed Data : Fetal Pediatr Pathol. 2017 Apr ;36(2):123-129. Epub 2016 Dec 16. PMID: 27983879

Article Published Date : Apr 01, 2017

Authors : Hong Chen, Zaiqing Qu, Wenhui Liu

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316)
Additional Keywords : Infertility : CK(1359) : AC(316)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Mobile phone radiation exposure has a significant effect on the proteome of rat testes.

Pubmed Data : Electrophoresis. 2014 Dec ;35(23):3331-8. Epub 2014 Oct 18. PMID: 25146694

Article Published Date : Dec 01, 2014

Authors : Masood Sepehrimanesh, Nasrin Kazemipour, Mehdi Saeb, Saeed Nazifi

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Role of mitochondria in the oxidative stress induced by electromagnetic fields: focus on reproductive systems.

Pubmed Data : Oxid Med Cell Longev. 2018 ;2018:5076271. Epub 2018 Nov 8. PMID: 30533171

Article Published Date : Dec 31, 2017

Authors : Silvano Junior Santini, Valeria Cordone, Stefano Falone, Mahmut Mijit, Carla Tatone, Fernanda Amicarelli, Giovanna Di Emidio

Study Type : Review
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Talking for more than one hour a day while charging a mobile device may be a risk factor for abnormal sperm concentration

Pubmed Data : Reprod Biomed Online. 2015 Sep ;31(3):421-6. Epub 2015 Jun 18. PMID: 26206279

Article Published Date : Sep 01, 2015

Authors : Ariel Zilberlicht, Zofnat Wiener-Megnazi, Yulia Sheinfeld, Bronislava Grach, Shirly Lahav-Baratz, Martha Dirnfeld

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Talking on the phone for more than four hours per day and pocketing mobile phones could be a risk factor for sperm DNA fragmentation.

Pubmed Data : J Endocrinol Invest. 2013 Dec ;36(11):970-4. Epub 2013 May 30. PMID: 23722985

Article Published Date : Dec 01, 2013

Authors : R Rago, P Salacone, L Caponecchia, A Sebastianelli, I Marcucci, A E Calogero, R Condorelli, E Vicari, G Morgia, V Favilla, S Cimino, A F Arcoria, S La Vignera

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The genomic effects of cell phone exposure on the reproductive system.

Pubmed Data : Environ Res. 2018 11 ;167:684-693. Epub 2018 Jun 5. PMID: 29884549

Article Published Date : Jan 10, 2018

Authors : Ahmad Yahyazadeh, Ömür Gülsüm Deniz, Arife Ahsen Kaplan, Gamze Altun, Kıymet Kübra Yurt, Devra Davis

Study Type : Review
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22) , Infertility : CK(1359) : AC(316)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

The proliferation of cellular antennas and other radiofrequency radiation (RFR) generating devices of the last decades has led to more and more concerns about the potential health effects from RFR exposure.

Pubmed Data : Int J Environ Res Public Health. 2019 Sep 12 ;16(18). Epub 2019 Sep 12. PMID: 31547363

Article Published Date : Sep 12, 2019

Authors : Andrea Vornoli, Laura Falcioni, Daniele Mandrioli, Luciano Bua, Fiorella Belpoggi

Study Type : Human Study
Additional Links
Diseases : Cancer : CK(4) : AC(3) , Infertility : CK(1359) : AC(316)
Additional Keywords : Infertility : CK(1359) : AC(316)

Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144)

The prolonged use of cell phones may have negative effects on the sperm motility characteristics.

Pubmed Data : Arch Androl. 2005 Sep-Oct;51(5):385-93. PMID: 16087567

Article Published Date : Sep 01, 2005

Authors : I Fejes, Z Závaczki, J Szöllosi, S Koloszár, J Daru, L Kovács, A Pál

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

There are significant linear trends with higher prevalence of involuntary childlessness with higher self-reported exposure to radiofrequency fields.

Pubmed Data : Eur J Epidemiol. 2008 ;23(5):369-77. PMID: 18415687

Article Published Date : Jan 01, 2008

Authors : Valborg Baste, Trond Riise, Bente E Moen

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

Use of cell phones decrease the semen quality in men and is dependent on the duration of daily exposure to cell phones and independent of the initial semen quality

Pubmed Data : Fertil Steril. 2008 Jan ;89(1):124-8. Epub 2007 May 4. PMID: 17482179

Article Published Date : Jan 01, 2008

Authors : Ashok Agarwal, Fnu Deepinder, Rakesh K Sharma, Geetha Ranga, Jianbo Li

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Infertility: Female (AC 9) (CK 25)

900 and 1800 MHz induces abnormal cell death in Drosophilia egg chambers.

Pubmed Data : Mutat Res. 2007 Jan 10 ;626(1-2):69-78. Epub 2006 Oct 11. PMID: 17045516

Article Published Date : Jan 10, 2007

Authors : Dimitris J Panagopoulos, Evangelia D Chavdoula, Ioannis P Nezis, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78)

Extremely low frequency magnetic fields induce alterations and oxidative stress at a cellular level in the uterus and ovaries of rats after long-term exposure.

Pubmed Data : Med Sci Monit. 2006 Jun ;12(6):BR215-20. Epub 2006 May 29. PMID: 16733479

Article Published Date : Jun 01, 2006

Authors : Feyzan Aksen, M Zulkuf Akdag, Aydin Ketani, Beran Yokus, Abdurrahman Kaya, Suleyman Dasdag

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

GSM 900 and 1800 MHz EMF impaired reproductive capacity by Drosophilia melanogaster that diminished with distance and decreasing intensities.

Pubmed Data : Int J Radiat Biol. 2010 May ;86(5):345-57. PMID: 20397839

Article Published Date : May 01, 2010

Authors : Dimitris J Panagopoulos, Evangelia D Chavdoula, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

GSM radiation destroys ovarian egg chambers in Drosophilia flies.

Pubmed Data : Cell Biochem Biophys. 2012 Jun ;63(2):121-32. PMID: 22367734

Article Published Date : Jun 01, 2012

Authors : Dimitris J Panagopoulos

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Mobile phone radiation induces oxidative stress and apoptosis in the rat endometrium and is ameliorated by vitamin C and E.

Pubmed Data : Adv Ther. 2006 Nov-Dec;23(6):957-73. PMID: 17276964

Article Published Date : Nov 01, 2006

Authors : Baha Oral, Mehmet Guney, Fehmi Ozguner, Nermin Karahan, Tamer Mungan, Selcuk Comlekci, Gokhan Cesur

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792) , Vitamin E : CK(2077) : AC(371)
Diseases : Infertility: Female : CK(281) : AC(51) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932) , Antioxidant : CK(9) : AC(4) ,

Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Mobile phone radiation may decrease the number of ovarian follicles in rats.

Pubmed Data : Arch Gynecol Obstet. 2009 Nov ;280(5):729-33. Epub 2009 Feb 25. PMID: 19241083

Article Published Date : Nov 01, 2009

Authors : Abdulaziz Gul, Hacer Celebi, Serdar Uğraş

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51) , Ovarian Diseases : CK(14) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

The studies included in this review indicate that oxidative stress from exposure to Wi-Fi and mobile phone-induced EMR is a significant mechanism affecting female and male reproductive systems.

Pubmed Data : J Membr Biol. 2013 Dec ;246(12):869-75. Epub 2013 Oct 9. PMID: 24105626

Article Published Date : Dec 01, 2013

Authors : Mustafa Nazıroğlu, Murat Yüksel, Seyit Ali Köse, Mehmet Okan Özkaya

Study Type : Review
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Women living within 500 meters of overhead power lines carried a higher risk of infertility compared with women living more than 1000 meters of the lines.

Pubmed Data : Int J Occup Environ Med. 2019 01 ;10(1):11-16. PMID: 30685773

Article Published Date : Dec 31, 2018

Authors : Sedigheh Esmailzadeh, Mouloud Agajani Delavar, Ashraf Aleyassin, Sayyed Asghar Gholamian, Amirmasoud Ahmadi

Study Type : Human Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Additional Keywords : Increased Risk : CK(1600) : AC(192)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Infertility: Male (AC 44) (CK 217)

1800 MHz increases oxidative stress and apoptosis in mouse-derived sperm cells, but N-acetyl cysteine and autophagy prevented EMF-associated cell death.

Pubmed Data : Toxicol Lett. 2014 Aug 4 ;228(3):216-24. Epub 2014 May 9. PMID: 24813634

Article Published Date : Aug 04, 2014

Authors : Kaijun Liu, Guowei Zhang, Zhi Wang, Yong Liu, Jianyun Dong, Xiaomei Dong, Jinyi Liu, Jia Cao, Lin Ao, Shaoxiang Zhang

Study Type : In Vitro Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)
Diseases : Infertility : CK(1359) : AC(316), Infertility: Male : CK(802) : AC(194), Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265), Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Additional Keywords : Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Oxidant : CK(122) : AC(48)

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900 MHz EMF induces morphological and biological that are possibly attributed to hormonal changes.

Pubmed Data : Saudi Med J. 2005 Mar ;26(3):405-10. PMID: 15806208

Article Published Date : Mar 01, 2005

Authors : Meltem Ozguner, Ahmet Koyu, Gokhan Cesur, Mehmet Ural, Fehmi Ozguner, Alpaslan Gokcimen, Namik Delibas

Study Type : Animal Study
Additional Links
Substances : Testosterone : CK(164) : AC(29)
Diseases : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

Altered mitochondrial membrane potential is associated with abnormal sperm parameters.

Pubmed Data : Fertil Steril. 2003 Sep ;80 Suppl 2:844-50. PMID: 14505763

Article Published Date : Sep 01, 2003

Authors : Xia Wang, Rakesh K Sharma, Akshay Gupta, Valal George, Anthony J Thomas, Tommaso Falcone, Ashok Agarwal

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Dose-dependent DNA damage resulting from mobile phone radiation is attentuated by pretreatment with melatonin in vitro.

Pubmed Data : Int J Radiat Biol. 2013 Nov ;89(11):993-1001. Epub 2013 Sep 3. PMID: 23952262

Article Published Date : Nov 01, 2013

Authors : Chuan Liu, Peng Gao, Shang-Cheng Xu, Yuan Wang, Chun-Hai Chen, Min-Di He, Zheng-Ping Yu, Lei Zhang, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Genoprotective : CK(413) : AC(148) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406),

Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Effect of electromagnetic waves from mobile phones on spermatogenesis in the era of 4G-LTE.

Pubmed Data : Biomed Res Int. 2018 ;2018:1801798. Epub 2018 Jan 29. PMID: 29789776

Article Published Date : Dec 31, 2017

Authors : Jong Jin Oh, Seok-Soo Byun, Sang Eun Lee, Gheeyoung Choe, Sung Kyu Hong

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Electromagnetic field affects spermatogenesis and causes to apoptosis due to the heat and other stress-related events in testis tissue.

Pubmed Data : Toxicol Ind Health. 2011 Jun ;27(5):455-63. Epub 2011 Feb 10. PMID: 21310776

Article Published Date : May 31, 2011

Authors : M Saygin, S Caliskan, N Karahan, A Koyu, N Gumral, Ac Uguz

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)

Electromagnetic radiation emitted by cellular phone influences human sperm motility.

Pubmed Data : Arch Med Res. 2006 Oct ;37(7):840-3. PMID: 16971222

Article Published Date : Oct 01, 2006

Authors : Osman Erogul, Emin Oztas, Ibrahim Yildirim, Tayfun Kir, Emin Aydur, Gokhan Komesli, Hasan Cem Irkilata, Mehmet Kemal Irmak, Ahmet Fuat Peker

Study Type : Human In Vitro
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)

Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Exposure to cell phone waves can decrease sperm viability and motility in rats.

Pubmed Data : Int J Fertil Steril. 2013 Apr ;7(1):21-8. Epub 2013 Mar 6. PMID: **24520459**

Article Published Date : Apr 01, 2013

Authors : Masoud Ghanbari, Seyed Bagher Mortazavi, Ali Khavanin, Mozafar Khazaei

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to mobile signal jammers significantly reduces sperm motility in human sperm samples.

Pubmed Data : J Hum Reprod Sci. 2013 Apr ;6(2):124-8. PMID: **24082653**

Article Published Date : Apr 01, 2013

Authors : Smj Mortazavi, Me Parsanezhad, M Kazempour, P Ghahramani, Ar Mortazavi, M Davari

Study Type : Human In Vitro
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Extremely low frequency-magnetic fields alters caspase activity in rat testes.

Pubmed Data : Int J Radiat Biol. 2013 Dec ;89(12):1053-60. Epub 2013 Jul 15. PMID: **23786626**

Article Published Date : Dec 01, 2013

Authors : Mehmet Zulkuf Akdag, Suleyman Dasdag, Ali Kemal Uzunlar, Engin Ulukaya, Arzu

Yilmaztepe Oral, Necla Çelik, Feyzan Akşen

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Extremely low-frequency magnetic field may be harmful to fertility recovery in males affected by reversible testicular damage.

Pubmed Data : Electromagn Biol Med. 2014 Jun ;33(2):139-46. Epub 2013 Jun 19. PMID: 23781997

Article Published Date : Jun 01, 2014

Authors : Bruno Mendes Tenorio, Moisés Bonifacio Alves Ferreira Filho, George Chaves Jimenez, Rosana Nogueira de Morais, Christina Alves Peixoto, Romildo de Albuquerque Nogueira, Valdemiro Amaro da Silva Junior

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

GSM mobile phone radiation increased the risk of sperm abnormalities in exposed animals.

Pubmed Data : Bull Environ Contam Toxicol. 2010 Jan ;84(1):51-4. Epub 2009 Oct 9. PMID: 19816647

Article Published Date : Jan 01, 2010

Authors : A A Otitoloju, I A Obe, O A Adewale, O A Otubanjo, V O Osunkalu

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Long-term exposure to low intensity microwave radiation evidently increased the sexual dysfunction rate and decreased natural pregnancy rate in men.

Pubmed Data : Zhonghua Nan Ke Xue. 2007 Apr ;13(4):306-8. PMID: 17491260

Article Published Date : Apr 01, 2007

Authors : Su-wen Yan, Ning Zhang, Jie Tang, Hai-ou Lu, Xi-liang Wang

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Long-term exposure to mobile phone radiation can cause hypospermatogenesis and maturation arrest in the spermatozoa in the testis of Wistar albino rats.

Pubmed Data : J Coll Physicians Surg Pak. 2011 May ;21(5):262-5. PMID: 21575531

Article Published Date : May 01, 2011

Authors : Sultan Ayoub Meo, Muhammad Arif, Shahzad Rashied, Muhammad Mujahid Khan, Muhammad Saeed Vohra, Adnan Mahmood Usmani, Muhammad Babar Imran, Abdul Majeed Al-Drees

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7)

Many lifestyle variables were confirmed to influence semen quality, including the recent suggestion that storage of mobile phones close to the testes can decrease semen quality.

Pubmed Data : Biol Lett. 2005 Sep 22 ;1(3):253-5. PMID: 17148180

Article Published Date : Sep 22, 2005

Authors : Sarah J Kilgallon, Leigh W Simmons

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Melatonin attentuates the spermatotoxic effects of radiofrequency radiation in mice.

Pubmed Data : Toxicol Ind Health. 2018 May ;34(5):315-327. Epub 2018 Mar 21. PMID: 29562845

Article Published Date : May 01, 2018

Authors : Neelam Pandey, Sarbani Giri

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Genoprotective : CK(413) : AC(148)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Men exposed to non-ionizing radiation presented with semi-clinical injury to sperm and poor semen quality. The authors note that this did not affect reproductive function.

Pubmed Data : Zhonghua Liu Xing Bing Xue Za Zhi. 2004 Jan ;25(1):40-3. PMID: 15061945

Article Published Date : Jan 01, 2004

Authors : Xiao-ping Ding, Su-wen Yan, Ning Zhang, Jie Tang, Hai-ou Lu, Xi-liang Wang, Yi Tang

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Microwave exposure could adversely affect male fertility through melatonin downregulation in the testis.

Pubmed Data : Electromagn Biol Med. 2012 Sep ;31(3):223-32. PMID: 22897403

Article Published Date : Sep 01, 2012

Authors : Sanjay Kumar, J Behari, Rashmi Sisodia

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Microwave radiation exerts antiproliferative and apoptotic effects on a spermatocyte cell line in vitro.

Pubmed Data : Zhonghua Nan Ke Xue. 2014 Mar ;20(3):201-6. PMID: **24738454**

Article Published Date : Mar 01, 2014

Authors : Lei Xue, Shui-Ming Wang, Hao-Yu Chen, Rui-Yun Peng, Hong-Yan Zuo, Li-Feng Wang, Li Zhao, Shao-Xia Wang

Study Type : In Vitro Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Microwave radiation has a significant effect on the reproductive system of rats.

Pubmed Data : Fertil Steril. 2011 Mar 15 ;95(4):1500-2. Epub 2010 Jun 18. PMID: **20723534**

Article Published Date : Mar 15, 2011

Authors : Sanjay Kumar, Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7)

Microwave radiation has a significant impact on the reproductive system of male rats.

Pubmed Data : Appl Biochem Biotechnol. 2010 Sep ;162(2):416-28. Epub 2009 Sep 19. PMID: **19768389**

Article Published Date : Sep 01, 2010

Authors : Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Radiotoxic : CK(22) : AC(4)

Microwaves from mobile phone exposure induce morphological changes and apoptosis in rabbit epididymis.

Pubmed Data : Andrologia. 2015 Aug ;47(6):700-5. Epub 2014 Jul 25. PMID: **25060044**

Article Published Date : Aug 01, 2015

Authors : E Azadi Oskouyi, F Rajaei, A Safari Variani, M R Sarokhani, A Javadi

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194), Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Anti-Androgenic : CK(20) : AC(2), Apoptotic : CK(8) : AC(7)

Mobile phone radiation exposure has a significant effect on the proteome of rat testes.

Pubmed Data : Electrophoresis. 2014 Dec ;35(23):3331-8. Epub 2014 Oct 18. PMID: **25146694**

Article Published Date : Dec 01, 2014

Authors : Masood Sepehrimanesh, Nasrin Kazemipour, Mehdi Saeb, Saeed Nazifi

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Mobile phone radiation induces oxidative stress in rat spermatozoa.

Pubmed Data : Appl Biochem Biotechnol. 2011 Jun ;164(4):546-59. Epub 2011 Jan 15. PMID: 21240569

Article Published Date : Jun 01, 2011

Authors : Kavindra Kumar Kesari, Sanjay Kumar, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Superoxide Dismutase Downregulation : CK(12) : AC(2)

Overproduction of reactive oxygen species as a result of mobile phone radiation negatively impacts the male rat reproductive system.

Pubmed Data : Electromagn Biol Med. 2012 Sep ;31(3):213-22. PMID: 22897402

Article Published Date : Sep 01, 2012

Authors : Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Oxidative stress-mediated alterations on sperm parameters in male Wistar rats exposed to 3G mobile phone radiation.

Pubmed Data : Andrologia. 2018 Nov 20:e13201. Epub 2018 Nov 20. PMID: 30461041

Article Published Date : Nov 19, 2018

Authors : Rohit Gautam, Kumari Vandana Singh, Jayprakash Nirala, Nina Nancy Murmu, Ramovatar Meena, Paulraj Rajamani

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Mobile Phone-Induced Oxidative Stress : CK(85) :

AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

RF-EMF may induce oxidative stress with an increased level of reactive oxygen species, which may lead to infertility.

Pubmed Data : Reprod Biol Endocrinol. 2018 Dec 9 ;16(1):118. Epub 2018 Dec 9. PMID: **30445985**

Article Published Date : Dec 08, 2018

Authors : Kavindra Kumar Kesari, Ashok Agarwal, Ralf Henkel

Study Type : Review
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

Radar radiation damages sperm quality, as shown in the reduction of sperm motility and elevation of sperm abnormality.

Pubmed Data : Zhonghua Nan Ke Xue. 2007 Sep ;13(9):801-3. PMID: **17929556**

Article Published Date : Sep 01, 2007

Authors : Ling-ling Ye, Yong-shan Suo, Wen-li Cao, Mei Chen

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Radiofrequency electromagnetic waves emitted from cell phones may lead to oxidative stress in human semen.

Pubmed Data : Fertil Steril. 2009 Oct ;92(4):1318-25. Epub 2008 Sep 20. PMID: **18804757**

Article Published Date : Oct 01, 2009

Authors : Ashok Agarwal, Nisarg R Desai, Kartikeya Makker, Alex Varghese, Rand Mouradi, Edmund Sabanegh, Rakesh Sharma

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194)

Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Sperm motility and mitochondrial membrane potential were significantly impaired after exposure to 900 MHz electromagnetic radiation at SAR 5.7 W/kg.

Pubmed Data : Bioelectromagnetics. 2008 May ;29(4):268-76. PMID: 18163440

Article Published Date : May 01, 2008

Authors : Nadia Falzone, Carin Huyser, Francois Fourie, Tim Toivo, Dariusz Leszczynski, Daniel Franken

Study Type : Human In Vitro
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Talking for more than one hour a day while charging a mobile device may be a risk factor for abnormal sperm concentration

Pubmed Data : Reprod Biomed Online. 2015 Sep ;31(3):421-6. Epub 2015 Jun 18. PMID: 26206279

Article Published Date : Sep 01, 2015

Authors : Ariel Zilberlicht, Zofnat Wiener-Megnazi, Yulia Sheinfeld, Bronislava Grach, Shirly Lahav-Baratz, Martha Dirnfeld

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Talking on the phone for more than four hours per day and pocketing mobile phones could be a risk factor for sperm DNA fragmentation.

Pubmed Data : J Endocrinol Invest. 2013 Dec ;36(11):970-4. Epub 2013 May 30. PMID: 23722985

Article Published Date : Dec 01, 2013

Authors : R Rago, P Salacone, L Caponecchia, A Sebastianelli, I Marcucci, A E Calogero, R Condorelli, E Vicari, G Morgia, V Favilla, S Cimino, A F Arcoria, S La Vignera

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The effects of radiofrequency electromagnetic radiation on sperm function.

Pubmed Data : Reproduction. 2016 12 ;152(6):R263-R276. Epub 2016 Sep 6. PMID: 27601711

Article Published Date : Jan 11, 2016

Authors : B J Houston, B Nixon, B V King, G N De Iuliis, R J Aitken

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

The prolonged use of cell phones may have negative effects on the sperm motility characteristics.

Pubmed Data : Arch Androl. 2005 Sep-Oct;51(5):385-93. PMID: 16087567

Article Published Date : Sep 01, 2005

Authors : I Fejes, Z Závaczki, J Szöllosi, S Koloszár, J Daru, L Kovács, A Pál

Study Type : Human Study
Additional Links

Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

The studies included in this review indicate that oxidative stress from exposure to Wi-Fi and mobile phone-induced EMR is a significant mechanism affecting female and male reproductive systems.

Pubmed Data : J Membr Biol. 2013 Dec ;246(12):869-75. Epub 2013 Oct 9. PMID: **24105626**

Article Published Date : Dec 01, 2013

Authors : Mustafa Nazıroğlu, Murat Yüksel, Seyit Ali Köse, Mehmet Okan Özkaya

Study Type : Review
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

There are significant linear trends with higher prevalence of involuntary childlessness with higher self-reported exposure to radiofrequency fields.

Pubmed Data : Eur J Epidemiol. 2008 ;23(5):369-77. PMID: **18415687**

Article Published Date : Jan 01, 2008

Authors : Valborg Baste, Trond Riise, Bente E Moen

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

These results suggest that reproductive hormone levels are disturbed as a result of RF-EMF exposure and it may

possibly affect reproductive functions.

Pubmed Data : Int J Biometeorol. 2014 Sep ;58(7):1657-63. Epub 2013 Dec 20. PMID: 24357488

Article Published Date : Sep 01, 2014

Authors : Masood Sepehrimanesh, Mehdi Saeb, Saeed Nazifi, Nasrin Kazemipour, Gholamali Jelodar, Saeedeh Saeb

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This meta-analyses suggests that mobile phone use may be deleterious to sperm.

Pubmed Data : F1000Res. 2013 ;2:40. Epub 2013 Feb 12. PMID: 24327874

Article Published Date : Jan 01, 2013

Authors : Madhukar Shivajirao Dama, M Narayana Bhat

Study Type : Meta Analysis
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This review proposes the possible mechanism of germ cell apoptosis in testes induced by extremely low frequency magnetic fields.

Pubmed Data : Biomed Res Int. 2014 ;2014:567183. Epub 2014 Jun 15. PMID: 25025060

Article Published Date : Jan 01, 2014

Authors : Sang-Kon Lee, Sungman Park, Yoon-Myoung Gimm, Yoon-Won Kim

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

This study demonstrates that radar radiation inflicts damage to male reproduction system and it is important to take protective measures.

Pubmed Data : Zhonghua Nan Ke Xue. 2003 Oct ;9(7):494-6, 500. PMID: 14628594

Article Published Date : Oct 01, 2003

Authors : Xin Liu, Su-Wen Yan, Xiao-Ping Ding, Ning Zhang, Hai-Ou Lu, Jie Tang

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This study shows a possible relationship between exposure to radiofrequency fields during work with radiofrequency equipment and radar and reduced fertility.

Pubmed Data : Bioelectromagnetics. 2008 Jul ;29(5):345-52. PMID: 18240289

Article Published Date : Jul 01, 2008

Authors : Ole J Møllerløkken, Bente E Moen

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Use of cell phones decrease the semen quality in men and is dependent on the duration of daily exposure to cell phones and independent of the initial semen quality

Pubmed Data : Fertil Steril. 2008 Jan ;89(1):124-8. Epub 2007 May 4. PMID: 17482179

Article Published Date : Jan 01, 2008

Authors : Ashok Agarwal, Fnu Deepinder, Rakesh K Sharma, Geetha Ranga, Jianbo Li

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)

Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation.

Pubmed Data : Fertil Steril. 2011 Nov 22. Epub 2011 Nov 22. PMID: 22112647

Article Published Date : Nov 22, 2011

Authors : Conrado Avendaño, Ariela Mata, César A Sanchez Sarmiento, Gustavo F Doncel

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Laptop Computer Use : CK(20) : AC(2), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Laptop computers : CK(20) : AC(2)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Wi-Fi radiation leads to DNA damage in rat testes.

Pubmed Data : J Pediatr Urol. 2013 Apr ;9(2):223-9. Epub 2012 Mar 30. PMID: 22465825

Article Published Date : Apr 01, 2013

Authors : Halil I Atasoy, Mehmet Y Gunal, Pinar Atasoy, Serenay Elgun, Guler Bugdayci

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Inflammation (AC 3) (CK 16)

1800 MHz radiofrequency fields stimulates pro-inflammatory responses in microglia and astrocytes in vitro.

Pubmed Data : PLoS One. 2014 ;9(9):e108318. Epub 2014 Oct 2. PMID: 25275372

Article Published Date : Jan 01, 2014

Authors : Yonghui Lu, Mindi He, Yang Zhang, Shangcheng Xu, Lei Zhang, Yue He, Chunhai Chen, Chuan Liu, Huifeng Pi, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation : CK(6531) : AC(1986)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cycloogenase-2 enzyme upregulation : CK(1) : AC(1) , Inflammatory : CK(312) : AC(92), Interleukin-1 up-regulation : CK(2) : AC(1) , Interleukin-6 up-regulation : CK(18) : AC(5), Prostaglandin E2 up-regulation : CK(2) : AC(1) , Tumor necrosis factorα (TNFα) up-regulation : CK(55) : AC(7)

ELF-EMF amplifies inflammatory responses through enhanced macrophage activation and can decrease the effectiveness of antioxidants.

Pubmed Data : Bioelectromagnetics. 2017 Jul ;38(5):374-385. Epub 2017 Mar 29. PMID: 28370033

Article Published Date : Jun 30, 2017

Authors : Soo Jeong Kim, Ye Won Jang, Kyung Eun Hyung, Da Kyoung Lee, Kee Hyeob Hyun, Seung Hwarn Jeong, Kyung Hoon Min, Wonku Kang, Ji Hoon Jeong, So-Young Park, Kwang Woo Hwang

Study Type : In Vitro Study
Additional Links
Diseases : Inflammation : CK(6531) : AC(1986) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Long-term exposure to ELF-EMFs probably affects immune responses, by stimulating the production of proinflammatory cytokines.

Pubmed Data : Int J Radiat Biol. 2019 Jul 22:1-23. Epub 2019 Jul 22. PMID: 31329007

Article Published Date : Jul 21, 2019

Authors : Majid Bagheri Hosseinabadi, Narges Khanjani, Ehsan Samaei, Freshteh Nazarkhani

Study Type : Human Study
Additional Links
Diseases : Inflammation : CK(6531) : AC(1986)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Inflammation: Brain (AC 1) (CK 2)

2.45 GHz EMF exposure can initiate the activation of rat microglia cells and STAT3 signalling involves in EMF-induced microglial activation.

Pubmed Data : Int J Radiat Biol. 2010 Jan ;86(1):27-36. PMID: 20070213

Article Published Date : Jan 01, 2010

Authors : Yutong Hao, Xuesen Yang, Chunhai Chen, Yuan-Wang, Xubu Wang, Maoquan Li, Zhengping Yu

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation: Brain : CK(8) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Neurotoxic : CK(1458) : AC(323)

Insomnia (AC 2) (CK 12)

Cell phone radiation exposure is associated with a broad range of brain protein changes which may explain the association between cell phone use and adverse health effects.

Pubmed Data : Electromagn Biol Med. 2012 Jan 20. Epub 2012 Jan 20. PMID: 22263702

Article Published Date : Jan 20, 2012

Authors : Adamantia F Fragopoulou, Athina Samara, Marianna H Antonelou, Anta Xanthopoulou, Aggeliki Papadopoulou, Konstantinos Vougas, Eugenia Koutsogiannopoulou, Ema Anastasiadou, Dimitrios J Stravopodis, George Th Tsangaris, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92) , Insomnia : CK(523) : AC(66) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Low-intensity very high frequency radiation exposure is associated with an increased incidence of headache, insomnia and amnesia.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2004 Aug ;22(4):267-9. PMID: 15355705

Article Published Date : Aug 01, 2004

Authors : Zheng-Quan Yuan, Feng Li, Deng-Gao Wang, Yong Wang, Ping Zhang

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92) , Insomnia : CK(523) : AC(66) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Insulin Resistance (AC 1) (CK 2)

Chronic exposure to mobile phone radiation raises fasting glucose and serum insulin in rats.

Pubmed Data : Int J Occup Med Environ Health. 2013 Apr ;26(2):235-41. Epub 2013 Jun 15. PMID: 23771861

Article Published Date : Apr 01, 2013

Authors : Sultan Ayoub Meo, Khalid Al Rubeaan

Study Type : Animal Study

Additional Links
Diseases : Insulin Resistance : CK(2804) : AC(602)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Interstitial Cystitis (AC 1) (CK 2)

Mobile phone electromagnetic fields may contribute to inflammation of bladder tissue.

Pubmed Data : Int Braz J Urol. 2014 Jul-Aug;40(4):520-5. PMID: 25251956

Article Published Date : Jul 01, 2014

Authors : Orhan Koca, Ali Murat Gokce, Mehmet Akyuz, Feriha Ercan, Necati Yurdakul, Muhammet Ihsan Karaman

Study Type : Animal Study
Additional Links
Diseases : Interstitial Cystitis : CK(146) : AC(18)
Additional Keywords : Interstitial Cystitis : CK(146) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92)

Iron Deficiency/Malabsorption (AC 1) (CK 1)

Radiofrequency radiation may impair uptake of iron by ferritin

Pubmed Data : Bioelectromagnetics. 2010 May ;31(4):311-7. PMID: 20082334

Article Published Date : May 01, 2010

Authors : Oscar Céspedes, Osamu Inomoto, Shoichi Kai, Yoshinori Nibu, Toshio Yamaguchi, Nobuyoshi Sakamoto, Tadahiro Akune, Masayoshi Inoue, Takanobu Kiss, Shoogo Ueno

Study Type : In Vitro Study
Additional Links
Diseases : Iron Deficiency/Malabsorption : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Kidney Damage (AC 5) (CK 10)

Cell phone exposure 8 hours a day for 20 days produces kidney tissue damage in rats.

Pubmed Data : Urol J. 2013 ;10(2):886-91. PMID: 23801472

Article Published Date : Jan 01, 2013

Authors : Orhan Koca, Ali Murat Gökçe, Metin Ishak Öztürk, Feriha Ercan, Necati Yurdakul, Muhammet Ihsan Karaman

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64)
Additional Keywords : Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Renotoxic : CK(26) : AC(9)

Exposure to a continuous 900-MHz EMF for 1 h daily during middle and late adolescence may cause changes in the female rat kidney at postnatal day 60.

Pubmed Data : Toxicol Ind Health. 2018 Oct ;34(10):693-702. Epub 2018 Jul 15. PMID: 30009691

Article Published Date : Sep 30, 2018

Authors : DeryaÖztürk Okatan, Ali Ertan Okatan, Hatice Hancı, Selim Demir, SerapÖzer Yaman, Serdar Çolakoğlu, Ersan Odacı

Study Type : Animal Study

Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Rats born to mothers exposed to Wi-Fi and cell phone electromagnetic fields exhibit elevated oxidative stress in kidneys and testes and may cause precocious puberty.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):221-9. Epub 2013 Oct 8. PMID: **24101576**

Article Published Date : Dec 01, 2013

Authors : Alper Özorak, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Derviş Özçelik, Mehmet Okan Özkaya, Hasan Çetin, Mehmet Cemal Kahya, Seyit Ali Kose

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436), Puberty: Precocious : CK(2) : AC(2)
Additional Keywords : Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats born to mothers who were exposed to 900 MHz electromagnetic fields during pregnancy exhibited kidney defects and apoptosis in kidney tissue.

Pubmed Data : Ren Fail. 2015 Mar ;37(2):305-9. Epub 2014 Nov 19. PMID: **25691088**

Article Published Date : Mar 01, 2015

Authors : Recep Bedir, Levent Tumkaya, İbrahim Şehitoğlu, Yıldıray Kalkan, Adnan Yilmaz, Osman Zikrullah Şahin

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64)
Additional Keywords : Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Renotoxic : CK(26) : AC(9)

Rats exposed to mobile phone radiation in utero exhibit pathological changes in kidney tissue attributed to oxidative stress and decreased antioxidant activity.

Pubmed Data : Biotech Histochem. 2015 Feb ;90(2):93-101. Epub 2014 Aug 27. PMID: 25158858

Article Published Date : Feb 01, 2015

Authors : E Odacı, D Ünal, T Mercantepe, Z Topal, H Hancı, S Türedi, H S Erol, S Mungan, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Learning disorders (AC 6) (CK 15)

Long-term, low-level microwave exposure may inhibit learning and memory by altering gene expression.

Pubmed Data : Biomed Environ Sci. 2015 Aug ;28(8):558-70. PMID: 26383594

Article Published Date : Aug 01, 2015

Authors : Ya Li Zhao, Ying Xian Li, Hong Bo Ma, Dong Li, Hai Liang Li, Rui Jiang, Guang Han Kan, Zhen Zhong Yang, Zeng Xin Huang

Study Type : Human In Vitro
Additional Links
Diseases : Learning disorders : CK(194) : AC(53) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Epigenetic Modification : CK(329) : AC(127)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)

Lotus seedpod procyanidins mitigate the oxidative effects and learning and memory damage caused by extremely low frequency electromagnetic fields on

Pubmed Data : Food Funct. 2013 Aug ;4(8):1252-62. PMID: 23764910

Article Published Date : Aug 01, 2013

Authors : Yuqing Duan, Zhigao Wang, Haihui Zhang, Yuanqing He, Rongzhu Lu, Rui Zhang, Guibo Sun, Xiaobo Sun

Study Type : Animal Study
Additional Links
Substances : Lotus : CK(153) : AC(108)
Diseases : Learning disorders : CK(194) : AC(53) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Plant Extracts : CK(11762) : AC(4236) , Proanthocyanidins : CK(203) : AC(54)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Male rats exposed to 9.4GHz microwave radiation in utero exhibit postnatal decreased learning and memory.

Pubmed Data : J Radiat Res. 2015 Mar ;56(2):261-8. Epub 2014 Oct 30. PMID: 25359903

Article Published Date : Mar 01, 2015

Authors : Yanchun Zhang, Zhihui Li, Yan Gao, Chenggang Zhang

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53)
Additional Keywords : Learning disorders : CK(194) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)

Prepubescent rats exposed to chronic radiofrequency electromagnetic radiation exhibit learning and memory dysfunction attributed to structural brain changes and decreased viable hippocampal cell count.

Pubmed Data : Metab Brain Dis. 2015 Oct ;30(5):1193-206. Epub 2015 Jun 3. PMID: 26033310

Article Published Date : Oct 01, 2015

Authors : Sareesh Naduvil Narayanan, Raju Suresh Kumar, Kalesh M Karun, Satheesha B Nayak, P Gopalakrishna Bhat

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53), Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Pulsed electromagnetic radiation alters levels of serotonin, dopamine, and norepinephrine in various areas of the rat brain.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2013 Jul ;17(13):1782-8. PMID: 23852905

Article Published Date : Jul 01, 2013

Authors : H S Aboul Ezz, Y A Khadrawy, N A Ahmed, N M Radwan, M M El Bakry

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Serotonin Down-Regulation : CK(2) : AC(1)

Rats born to mothers exposed to mobile phone radiation exhibit altered electrophysiological properties of CA1 pyramidal neurons, deleteriously impacting cognition.

Pubmed Data : Toxicol Ind Health. 2016 Jun ;32(6):968-79. Epub 2014 Mar 6. PMID: 24604340

Article Published Date : Jun 01, 2016

Authors : Moazamehosadat Razavinasab, Kasra Moazzami, Mohammad Shabani

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53)
Additional Keywords : Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Pregnancy : CK(10) :

AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Leukemia (AC 12) (CK 103)

ARIMMORA concludes that the relationship between ELF-MF and childhood leukemia remains consistent with possible carcinogenicity in humans.

Pubmed Data : Bioelectromagnetics. 2016 Mar 15. Epub 2016 Mar 15. PMID: 26991812

Article Published Date : Mar 14, 2016

Authors : Joachim Schüz, Clemens Dasenbrock, Paolo Ravazzani, Martin Röösli, Primo Schär, Patricia L Bounds, Friederike Erdmann, Arndt Borkhardt, César Cobaleda, Maren Fedrowitz, Yngve Hamnerius, Isidro Sanchez-Garcia, Rony Seger, Kjeld Schmiegelow, Gunde Ziegelberger, Myles Capstick, Melissa Manser, Meike Müller, Christoph D Schmid, David Schürmann, Benjamin Struchen, Niels Kuster

Study Type : Human Study
Additional Links
Diseases : Leukemia : CK(1284) : AC(586)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Among the 11 high-power Korean AM radio transmitter sites included in this study, there were significantly increased incidences of leukemia in 2 areas and of brain cancer in 1 area.

Pubmed Data : Arch Environ Health. 2003 Dec ;58(12):756-62. PMID: 15859510

Article Published Date : Dec 01, 2003

Authors : Mina Ha, Hyung-Jun Lim, Soo-Hun Cho, Hyung-Do Choi, Kwang-Yun Cho

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Children who lived within 2 km of the nearest AM radio transmitter were 2.15 times more likely to have any type of leukemia as compared to those who resided more than 20 km from it.

Pubmed Data : Am J Epidemiol. 2007 Aug 1 ;166(3):270-9. Epub 2007 Jun 7. PMID: 17556764

Article Published Date : Aug 01, 2007

Authors : Mina Ha, Hyoungjune Im, Mihye Lee, Hyun Joo Kim, Byung-Chan Kim, Yoon-Myoung Gimm, Jeong-Ki Pack

Study Type : Human Study
Additional Links
Diseases : Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Myeloid leukemia was associated with benzene, a nonspecific group of solvents, occupational pesticides, and working with or near powerlines.

Pubmed Data : Ann Hematol. 2009 Nov ;88(11):1079-88. Epub 2009 Mar 18. PMID: 19294385

Article Published Date : Nov 01, 2009

Authors : David W Kaufman, Theresa E Anderson, Surapol Issaragrisil

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Chronic Myeloid Leukemia : CK(31) : AC(16) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Problem Substances : Benzene : CK(142) : AC(24) , Pesticides : CK(827) : AC(95)

The surrogate markers used to estimate exposure to electromagnetic fields are notoriously inaccurate and may produce an underestimation of the true risk associated with electromagnetic fields.

Pubmed Data : Environ Health Perspect. 1991 Nov ;95:147-56. PMID: 1821368

Article Published Date : Nov 01, 1991

Authors : M N Bates

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Leukemia : CK(1284) : AC(586)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

There was an association between residential proximity to television towers and decreased survival among cases of childhood leukemia in this study.

Pubmed Data : Arch Environ Health. 2003 Sep ;58(9):560-4. PMID: 15369273

Article Published Date : Sep 01, 2003

Authors : Bruce Hocking, Ian Gordon

Study Type : Human Study
Additional Links
Diseases : Cancer: Childhood : CK(33) : AC(3) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This meta-analysis predicts that, If an association between electromagnetic fields and childhood leukemia exists, as many as 175-240 cases of childhood leukemia in the US may be due to magnetic field exposure.

Pubmed Data : Bioelectromagnetics. 2001 ;Suppl 5:S86-104. PMID: 11170120

Article Published Date : Jan 01, 2001

Authors : D Wartenberg

Study Type : Meta Analysis
Additional Links
Diseases : Leukemia : CK(1284) : AC(586) , Leukemia: Childhood : CK(10) : AC(1)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review analyzes potential bias in studies assessing risk of childhood leukemia associated with electromagnetic fields. The authors find that most data

suggest that, if a bias exists, it is a bias towards the lack of association.

Pubmed Data : Bioelectromagnetics. 2001 ;Suppl 5:S32-47. PMID: 11170116

Article Published Date : Jan 01, 2001

Authors : D Wartenberg

Study Type : Review
Additional Links
Diseases : Leukemia : CK(1284) : AC(586) , Leukemia: Childhood : CK(10) : AC(1)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review indicates that a causal relationship between electromagnetic fields and childhood leukemia cannot be dismissed due to a trend of a dose-response relationship is past exposure assessment studies.

Pubmed Data : Am J Prev Med. 1995 Jul-Aug;11(4):263-70. PMID: 7495604

Article Published Date : Jul 01, 1995

Authors : P Levallois

Study Type : Review
Additional Links
Diseases : Leukemia : CK(1284) : AC(586) , Leukemia: Childhood : CK(10) : AC(1) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study adds evidence of an excess of leukemia in a population living near high-power radio transmitters.

Pubmed Data : Am J Epidemiol. 2002 Jun 15 ;155(12):1096-103. PMID: 12048223

Article Published Date : Jun 15, 2002

Authors : Paola Michelozzi, Alessandra Capon, Ursula Kirchmayer, Francesco Forastiere, Annibale Biggeri, Alessandra Barca, Carlo A Perucci

Study Type : Human Study
Additional Links
Diseases : Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study found an association between increased childhood leukemia incidence and mortality and proximity to TV towers.

Pubmed Data : Med J Aust. 1996 Dec 2-16;165(11-12):601-5. PMID: 8985435

Article Published Date : Dec 02, 1996

Authors : B Hocking, I R Gordon, H L Grain, G E Hatfield

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study replicates the findings of a previous study demonstrating an increased risk of childhood leukemia associated with powerlines within a proximity of 600km.

Pubmed Data : Br J Cancer. 2014 Mar 4 ;110(5):1402-8. Epub 2014 Feb 6. PMID: 24504371

Article Published Date : Mar 04, 2014

Authors : K J Bunch, T J Keegan, J Swanson, T J Vincent, M F G Murphy

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Leukemia: Childhood (AC 7) (CK 72)

Proximity to power lines is associated with an elevated

risk of childhood leukemia. If the association is causal, an estimated 1% of childhood leukemia cases mat be attributable to these lines.

Pubmed Data : BMJ. 2005 Jun 4 ;330(7503):1290. PMID: 15933351

Article Published Date : Jun 04, 2005

Authors : Gerald Draper, Tim Vincent, Mary E Kroll, John Swanson

Study Type : Human Study
Additional Links
Diseases : Leukemia: Childhood : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The result in this meta-analysis indicated that magnetic field exposure level may be associated with childhood leukemia.

Pubmed Data : Leuk Res. 2014 Mar ;38(3):269-74. Epub 2013 Dec 15. PMID: 24388073

Article Published Date : Mar 01, 2014

Authors : Longyu Zhao, Xiaodong Liu, Chunpeng Wang, Kangkang Yan, Xuejun Lin, Shuang Li, Honghong Bao, Xin Liu

Study Type : Meta Analysis
Additional Links
Diseases : Leukemia: Childhood : CK(10) : AC(1) , Leukemias : CK(479) : AC(215)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

There is an apparent association between childhood lymphoblastic leukemia and and exposure to broadcast radiation.

Pubmed Data : Aust N Z J Public Health. 1998 ;22(3 Suppl):360-7. PMID: 9629823

Article Published Date : Jan 01, 1998

Authors : D R McKenzie, Y Yin, S Morrell

Study Type : Human Study
Additional Links
Diseases : Leukemia: Childhood : CK(10) : AC(1)
Additional Keywords : Leukemia: Childhood : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This meta-analysis predicts that, If an association between electromagnetic fields and childhood leukemia exists, as many as 175-240 cases of childhood leukemia in the US may be due to magnetic field exposure.

Pubmed Data : Bioelectromagnetics. 2001 ;Suppl 5:S86-104. PMID: 11170120

Article Published Date : Jan 01, 2001

Authors : D Wartenberg

Study Type : Meta Analysis
Additional Links
Diseases : Leukemia : CK(1284) : AC(586) , Leukemia: Childhood : CK(10) : AC(1)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This pooled analysis found an increased risk of childhood leukemia associated with proximity to power lines.

Pubmed Data : Br J Cancer. 2018 08 ;119(3):364-373. Epub 2018 May 29. PMID: 29808013

Article Published Date : Jan 01, 2018

Authors : Aryana T Amoon, Catherine M Crespi, Anders Ahlbom, Megha Bhatnagar, Isabelle Bray, Kathryn J Bunch, Jacqueline Clavel, Maria Feychting, Denis Hémon, Christoffer Johansen, Christian Kreis, Carlotta Malagoli, Fabienne Marquant, Camilla Pedersen, Ole Raaschou-Nielsen, Martin Röösli, Ben D Spycher, Madhuri Sudan, John Swanson, Andrea Tittarelli, Deirdre M Tuck, Tore Tynes, Ximena Vergara, Marco Vinceti, Victor Wünsch-Filho, Leeka Kheifets

Study Type : Human Study
Additional Links
Diseases : Leukemia: Childhood : CK(10) : AC(1) , Leukemias : CK(479) : AC(215)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review analyzes potential bias in studies assessing risk of childhood leukemia associated with electromagnetic fields. The authors find that most data suggest that, if a bias exists, it is a bias towards the lack of association.

Pubmed Data : Bioelectromagnetics. 2001 ;Suppl 5:S32-47. PMID: 11170116

Article Published Date : Jan 01, 2001

Authors : D Wartenberg

Study Type : Review
Additional Links
Diseases : Leukemia : CK(1284) : AC(586) , Leukemia: Childhood : CK(10) : AC(1)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review indicates that a causal relationship between electromagnetic fields and childhood leukemia cannot be dismissed due to a trend of a dose-response relationship is past exposure assessment studies.

Pubmed Data : Am J Prev Med. 1995 Jul-Aug;11(4):263-70. PMID: 7495604

Article Published Date : Jul 01, 1995

Authors : P Levallois

Study Type : Review
Additional Links
Diseases : Leukemia : CK(1284) : AC(586) , Leukemia: Childhood : CK(10) : AC(1) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Leukemias (AC 7) (CK 57)

2.45 GHz electromagnetic radiation exposure stimulates proliferation in human leukemia cancer cells via oxidative stress and calcium influx.

Pubmed Data : Int J Radiat Biol. 2012 Jun ;88(6):449-56. Epub 2012 May 2. PMID: 22489926

Article Published Date : Jun 01, 2012

Authors : Mustafa Nazıroğlu, Bilal Ciğ, Salih Doğan, Abdulhadi Cihangir Uğuz, Selin Dilek,

Dahdouh Faouzi

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48) , Proliferative : CK(17) : AC(6)

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900 MHz electromagnetic fields may confer survival benefits to T-lymophoblastoid leukemia cells.

Pubmed Data : J Cell Physiol. 2004 Feb ;198(2):324-32. PMID: 14603534

Article Published Date : Feb 01, 2004

Authors : F Marinelli, D La Sala, G Cicciotti, L Cattini, C Trimarchi, S Putti, A Zamparelli, L Giuliani, G Tomassetti, Caterina Cinti

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Extremely low frequency electromagnetic fields promote the differentiation of acute promyelocytic leukemia cells by all-trans retinoic acid.

Pubmed Data : Cell Physiol Biochem. 2018 ;46(1):389-400. Epub 2018 Mar 23. PMID: 29590658

Article Published Date : Jan 01, 2018

Authors : Alfredo Errico Provenzano, Stefano Amatori, Maria Gemma Nasoni, Giuseppe Persico, Sergio Russo, Anna Rita Mastrogiacomo, Alessandro Gambarara, Mirco Fanelli

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Proliferative : CK(17) : AC(6)

Occupational electromagnetic field exposure in electrical workers may increase the risk of leukemia.

Pubmed Data : Rev Epidemiol Sante Publique. 1992 ;40 Suppl 1:S55-62. PMID: **1626106**

Article Published Date : Jan 01, 1992

Authors : G Thériault

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Leukemias : CK(479) : AC(215)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The result in this meta-analysis indicated that magnetic field exposure level may be associated with childhood leukemia.

Pubmed Data : Leuk Res. 2014 Mar ;38(3):269-74. Epub 2013 Dec 15. PMID: **24388073**

Article Published Date : Mar 01, 2014

Authors : Longyu Zhao, Xiaodong Liu, Chunpeng Wang, Kangkang Yan, Xuejun Lin, Shuang Li, Honghong Bao, Xin Liu

Study Type : Meta Analysis
Additional Links
Diseases : Leukemia: Childhood : CK(10) : AC(1) , Leukemias : CK(479) : AC(215)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This pooled analysis found an increased risk of childhood leukemia associated with proximity to power lines.

Pubmed Data : Br J Cancer. 2018 08 ;119(3):364-373. Epub 2018 May 29. PMID: **29808013**

Article Published Date : Jan 01, 2018

Authors : Aryana T Amoon, Catherine M Crespi, Anders Ahlbom, Megha Bhatnagar, Isabelle Bray, Kathryn J Bunch, Jacqueline Clavel, Maria Feychting, Denis Hémon, Christoffer Johansen, Christian Kreis, Carlotta Malagoli, Fabienne Marquant, Camilla Pedersen, Ole Raaschou-Nielsen, Martin Röösli, Ben D Spycher, Madhuri Sudan, John Swanson, Andrea Tittarelli, Deirdre M Tuck, Tore Tynes, Ximena Vergara, Marco Vinceti, Victor Wünsch-Filho, Leeka Kheifets

Study Type : Human Study
Additional Links
Diseases : Leukemia: Childhood : CK(10) : AC(1) , Leukemias : CK(479) : AC(215)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This study examining mice exposed to extremely low

frequency magnetic fields demonstrated that lifetime exposure increases the risk for various types of cancers.

Pubmed Data : Int J Radiat Biol. 2016 ;92(4):202-14. Epub 2016 Feb 19. PMID: 26894944

Article Published Date : Jan 01, 2016

Authors : Morando Soffritti, Eva Tibaldi, Michela Padovani, David G Hoel, Livio Giuliani, Luciano Bua, Michelina Lauriola, Laura Falcioni, Marco Manservigi, Fabiana Manservisi, Simona Panzacchi, Fiorella Belpoggi

Study Type : Animal Study
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Leukemias : CK(479) : AC(215) , Lymphoma : CK(253) : AC(83), Schwannoma : CK(5) : AC(3)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Lipid Peroxidation (AC 43) (CK 106)

2.45 GHz electromagnetic radiation exposure stimulates proliferation in human leukemia cancer cells via oxidative stress and calcium influx.

Pubmed Data : Int J Radiat Biol. 2012 Jun ;88(6):449-56. Epub 2012 May 2. PMID: 22489926

Article Published Date : Jun 01, 2012

Authors : Mustafa Nazıroğlu, Bilal Ciğ, Salih Doğan, Abdulhadi Cihangir Uğuz, Selin Dilek, Dahdouh Faouzi

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48) , Proliferative : CK(17) : AC(6)

2.45 GHz microwave exposure increases lipid peroxidation

status in rats and is attentuated by vitamin C and vitamin E.

Pubmed Data : Niger Postgrad Med J. 2003 Dec ;10(4):243-6. PMID: 15045019

Article Published Date : Dec 01, 2003

Authors : M A Aweda, S Gbenebitse, R O Meidinyo

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792) , Vitamin E : CK(2077) : AC(371)
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

2.45GHz electromagnetic radiation may negatively impact implantation and pregnancy via oxidative stress.

Pubmed Data : Appl Biochem Biotechnol. 2013 Mar ;169(5):1727-51. Epub 2013 Jan 22. PMID: 23334843

Article Published Date : Mar 01, 2013

Authors : Saba Shahin, Vineet Prakash Singh, Ritesh K Shukla, Alok Dhawan, Ravi Kumar Gangwar, Surya Pal Singh, Chandra Mohini Chaturvedi

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Pregnancy : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)

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50 days of exposure to 3 MT electromagnetic field induces oxidative stress and lipid peroxidation in rats, which is attentuated by vitamin E.

Pubmed Data : Basic Clin Neurosci. 2016 Oct ;7(4):315-322. PMID: 27872692

Article Published Date : Oct 01, 2016

Authors : Ahmad Ali Ghanbari, Kobra Shabani, Daryoush Mohammad Nejad

Study Type : Animal Study
Additional Links
Substances : Vitamin E : CK(2077) : AC(371)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

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60 Hz electromagnetic field exposure may increase oxidative stress and lipid peroxidation in rats.

Pubmed Data : J Diabetes Metab Disord. 2014 ;13(1):85. Epub 2014 Aug 13. PMID: 25152870

Article Published Date : Jan 01, 2014

Authors : Soroush Seifirad, Shahrokh Farzampour, Mitra Nourbakhsh, Mahsa Mohammad Amoli, Maryam Razzaghy-Azar, Bagher Larijani

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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900 MHz pulse-modulated radiofrequency radiation induces oxidative stress in rat heart, lung, testis and liver tissues via lipid peroxidation, increased nitric oxide synthase, and antioxidant defense downregulation.

Pubmed Data : Gen Physiol Biophys. 2011 Mar ;30(1):84-9. PMID: 21460416

Article Published Date : Mar 01, 2011

Authors : Meric A Esmekaya, Cigdem Ozer, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

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900 MHz radiation induces oxidative stress in duckweed.

Pubmed Data : Sci Total Environ. 2007 Dec 15 ;388(1-3):78-89. Epub 2007 Sep 7. PMID: 17825879

Article Published Date : Dec 15, 2007

Authors : Mirta Tkalec, Kresimir Malarić, Branka Pevalek-Kozlina

Study Type : Plant Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Acute 60 Hz electromagnetic field exposure decreases superoxide dismutase and reduced glutathione activity in rats.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1088-94. Epub 2010 Aug 11. PMID: 20701462

Article Published Date : Dec 01, 2010

Authors : Jesús Martínez-Sámano, Patricia V Torres-Durán, Marco A Juárez-Oropeza, David Elías-Viñas, Leticia Verdugo-Díaz

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Alterations seen in visual evoked potentials by extremely low frequency electric fields, at least partly, could be explained by lipid peroxidation in the retina and brain.

Pubmed Data : Electromagn Biol Med. 2016 ;35(1):65-74. Epub 2014 Dec 11. PMID: 25496054

Article Published Date : Jan 01, 2016

Authors : Deniz Kantar Gok, Deniz Akpinar, Enis Hidisoglu, Sukru Ozen, Aysel Agar, Piraye Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

ELF-MF applied for 30 min/day for 10 days can affect free radical generation in the brain.

Pubmed Data : J Physiol Pharmacol. 2011 Dec ;62(6):657-61. PMID: 22314568

Article Published Date : Dec 01, 2011

Authors : Elzbieta Ciejka, P Kleniewska, B Skibska, A Goraca

Study Type : Animal Study
Additional Links

Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic field exposure increases oxidative stress and lipid peroxidation in the American cockroach.

Pubmed Data : J Comp Physiol A Neuroethol Sens Neural Behav Physiol. 2018 06 ;204(6):605-611. Epub 2018 May 2. PMID: 29721708

Article Published Date : Jan 01, 2018

Authors : Justyna Maliszewska, Patrycja Marciniak, Hanna Kletkiewicz, Joanna Wyszkowska, Anna Nowakowska, Justyna Rogalska

Study Type : Insect Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Electromagnetic fields induce lipid peroxidation in human blood platelets.

Pubmed Data : Rocz Akad Med Bialymst. 2005 ;50 Suppl 1:23-5. PMID: 16119619

Article Published Date : Jan 01, 2005

Authors : A Buczyński, K Pacholski, M Dziedziczak-Buczyńska, G Henrykowska, A Jerominko

Study Type : Human In Vitro
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields induce oxidative stress in aquatic organisms, suggesting a possible negative effect of transmission lines.

Pubmed Data : Int J Radiat Biol. 2017 08 ;93(8):818-830. Epub 2017 May 25. PMID: 28452248

Article Published Date : Jan 01, 2017

Authors : Marko Miliša, Domagoj Đikić, Tvrtko Mandić, Dino Grozić, Ivan Čolić, Ana Ostojić

Study Type : Animal Study, Environmental
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields induce oxidative stress in the brain of rats, leading to aberrant neuronal functions.

Pubmed Data : Gen Physiol Biophys. 2014 ;33(1):81-90. Epub 2013 Dec 13. PMID: 24334533

Article Published Date : Jan 01, 2014

Authors : Pavan K Manikonda, Pilankatta Rajendra, D Devendranath, B Gunasekaran, Channakeshava, Shivakumara R S Aradhya, Rao B Sashidhar, Chivukula Subramanyam

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Electronic equipment repairers, exposed to ELF-EMF, are at a risk of oxidative stress and sleep insufficiency, which could be explained by lower plasma melatonin levels and higher MDA levels.

Pubmed Data : Indian J Occup Environ Med. 2010 Sep ;14(3):66-70. PMID: 21461157

Article Published Date : Sep 01, 2010

Authors : Mohamed El-Helaly, E Abu-Hashem

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Exposure to an 1800 MHz electromagnetic field slightly increases malondialdehyde levels in the kidney, brain, and liver in healthy and inflamed rats.

Pubmed Data : Int J Occup Med Environ Health. 2015 ;28(4):751-9. PMID: 26216313

Article Published Date : Jan 01, 2015

Authors : Paweł Bodera, Wanda Stankiewicz, Bożena Antkowiak, Małgorzata Paluch, Jarosław

Kieliszek, Jaromir Sobiech, Marcin Niemcewicz

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Exposure to extremely low electromagnetic fields induces oxidative stress in the rat ovary and uterus.

Pubmed Data : Electromagn Biol Med. 2016 ;35(3):245-59. Epub 2016 Apr 12. PMID: 27070942

Article Published Date : Jan 01, 2016

Authors : Deniz Akpınar, Deniz Kantar Gok, Enis Hidisoglu, Mutay Aslan, Sukru Ozen, Aysel Agar, Piraye Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields induce lipid peroxidation in the brain and retina of rats.

Pubmed Data : Electromagn Biol Med. 2012 Dec ;31(4):436-48. Epub 2012 Oct 9. PMID: 23045992

Article Published Date : Dec 01, 2012

Authors : Deniz Akpinar, Nihal Ozturk, Sukru Ozen, Aysel Agar, Piraye Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency magnetic field induces lipid peroxidation and reactive oxygen species in mouse cerebellum.

Pubmed Data : Gen Physiol Biophys. 2011 Dec ;30(4):415-21. PMID: 22131325

Article Published Date : Dec 01, 2011

Authors : Li Y Chu, Jong H Lee, Yun S Nam, Yu J Lee, Won-Hee Park, Byung-Cheon Lee, Daejin Kim, Yoon H Chung, Ji H Jeong

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low-frequency electric fields at different intensities may induce lipid peroxidation.

Pubmed Data : Neuroscience. 2014 Jul 11 ;272:154-66. Epub 2014 May 6. PMID: 24811084

Article Published Date : Jul 11, 2014

Authors : D Kantar Gok, D Akpinar, P Yargicoglu, S Ozen, M Aslan, N Demir, N Derin, A Agar

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low-frequency electromagnetic fields induce oxidative stress in liver rat tissue.

Pubmed Data : Cell Biochem Biophys. 2011 Mar ;59(2):71-7. PMID: 20824388

Article Published Date : Mar 01, 2011

Authors : Mustafa Emre, Salih Cetiner, Sevil Zencir, Isa Unlukurt, Ibrahim Kahraman, Zeki Topcu

Study Type : In Vitro Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Oxidant : CK(122) : AC(48)

Higher levels of irreversible oxidative damage were observed in the major lymphoid organs of immature rats than in mature rats.

Pubmed Data : Arch Med Res. 2011 May ;42(4):261-7. PMID: 21820603

Article Published Date : May 01, 2011

Authors : Birsen Aydin, Aysegul Akar

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

L-carnitine and selenium seem to have protective effects on the 2.45 GHz-induced oxidative stress in the rat brain.

Pubmed Data : Int J Radiat Biol. 2009 Aug ;85(8):680-9. PMID: 19637079

Article Published Date : Aug 01, 2009

Authors : Mustafa Naziroğlu, Nurhan Gümral

Study Type : Animal Study
Additional Links
Substances : Carnitine : CK(441) : AC(70) , Selenium : CK(999) : AC(188)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Long-term exposure to cell phone radiation increases apoptosis and oxidative stress while depleting antioxidant activity in the brains of young and adult rats.

Pubmed Data : Cell Biochem Biophys. 2014 Nov ;70(2):845-55. PMID: 24801773

Article Published Date : Nov 01, 2014

Authors : Tarek K Motawi, Hebatallah A Darwish, Yasser M Moustafa, Mohammed M Labib

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Lotus seedpod procyanidins mitigate the oxidative effects and learning and memory damage caused by extremely low frequency electromagnetic fields on

Pubmed Data : Food Funct. 2013 Aug ;4(8):1252-62. PMID: 23764910

Article Published Date : Aug 01, 2013

Authors : Yuqing Duan, Zhigao Wang, Haihui Zhang, Yuanqing He, Rongzhu Lu, Rui Zhang, Guibo Sun, Xiaobo Sun

Study Type : Animal Study
Additional Links
Substances : Lotus : CK(153) : AC(108)
Diseases : Learning disorders : CK(194) : AC(53) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Plant Extracts : CK(11762) : AC(4236) , Proanthocyanidins : CK(203) : AC(54)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Melatonin confers protective effects to rat neurons following 2.45 GHz electromagnetic radiation exposure.

Pubmed Data : Physiol Behav. 2012 Feb 1 ;105(3):683-92. Epub 2011 Oct 12. PMID: 22019785

Article Published Date : Feb 01, 2012

Authors : M Nazıroğlu, Ö Çelik, C Özgül, B Çiğ, S Doğan, R Bal, N Gümral, A B Rodríguez, J A Pariente

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Calcium Channel Blockers : CK(87) : AC(23)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)

Melatonin prevents liver injury by microwave radiation in rats.

Pubmed Data : Bratisl Lek Listy. 2015 ;116(2):96-100. PMID: 25665474

Article Published Date : Jan 01, 2015

Authors : B Djordjevic, D Sokolovic, G Kocic, A Veljkovic, M Despotovic, J Basic, T Jevtovic-Stoimenov, D M Sokolovic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)

Additional Keywords : Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Microwaves can be either beneficial to health or be a factor of oxidative stress.

Pubmed Data : Vopr Kurortol Fizioter Lech Fiz Kult. 2005 Sep-Oct(5):17-20. PMID: 16318001

Article Published Date : Sep 01, 2005

Authors : A V Musaev, L F Ismailova, A M Gadzhiev

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Mobile phone exposure induces oxidative stress in the brain, kidneys, and liver and also increases liver enzyme activity.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):279-84. Epub 2014 Apr 8. PMID: 24712749

Article Published Date : Jan 01, 2015

Authors : Merhan Mamdouh Ragy

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , GGT : CK(63) : AC(9) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Mobile phone radiation exposure increases oxidative stress as evidenced by increased protein carbonyl and malondialdehyde, coupled with impaired cognition.

Pubmed Data : Indian J Biochem Biophys. 2013 Apr ;50(2):114-9. PMID: 23720885

Article Published Date : Apr 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Basu Dev Banerjee, Mahesh Pandurang Abegaonkar, Kanu Megha, Rafat Sultana Ahmed, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Oxidant : CK(122) : AC(48)

Plasma level of lipid peroxides was significantly increased after 1, 2 and 4 h of exposure to radiofrequency fields of the cellular phone in standby position in volunteers.

Pubmed Data : J Pharm Biomed Anal. 2001 Nov ;26(4):605-8. PMID: 11516912

Article Published Date : Nov 01, 2001

Authors : Y M Moustafa, R M Moustafa, A Belacy, S H Abou-El-Ela, F M Ali

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Radiofrequency and extremely low frequency electromagnetic fields increase oxidative stress in rat testis tissue and causes a decrease in antioxidant level with the effects being more distinctive in diabetic rats.

Pubmed Data : Bratisl Lek Listy. 2017 ;118(5):278-282. PMID: 28516790

Article Published Date : Jan 01, 2017

Authors : D Kuzay, C Ozer, B Sirav, A G Canseven, N Seyhan

Study Type : Animal Study
Additional Links

Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Rats born to mothers exposed to Wi-Fi and cell phone electromagnetic fields exhibit elevated oxidative stress in kidneys and testes and may cause precocious puberty.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):221-9. Epub 2013 Oct 8. PMID: **24101576**

Article Published Date : Dec 01, 2013

Authors : Alper Özorak, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Derviş Özçelik, Mehmet Okan Özkaya, Hasan Çetin, Mehmet Cemal Kahya, Seyit Ali Kose

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436), Puberty: Precocious : CK(2) : AC(2)
Additional Keywords : Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats exposed to mobile phone radiation present with higher oxidative stress, reduced antioxidant activity, and extensive neurodegeneration in the brain.

Pubmed Data : Neurol Res. 2014 Dec ;36(12):1072-9. Epub 2014 May 26. PMID: **24861496**

Article Published Date : Dec 01, 2014

Authors : Nidhi Saikhedkar, Maheep Bhatnagar, Ayushi Jain, Pooja Sukhwal, Chhavi Sharma, Neha Jaiswal

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Brain: Oxidative Stress : CK(79) : AC(46) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative

Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Sub-acute exposure to static magnetic fields induce oxidative stress in rats, which may be prevented by a pretreatment with selenium.

Pubmed Data : Toxicol Ind Health. 2011 Nov ;27(10):949-55. Epub 2011 Apr 19. PMID: 21505001

Article Published Date : Nov 01, 2011

Authors : Soumaya Ghodbane, Salem Amara, Josiane Arnaud, Catherine Garrel, Henri Faure, Alain Favier, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

The results of this study indicate that both intermittent and continuous magnetic field exposures affect various tissues in a distinct manner because of having different tissue antioxidant status and responses.

Pubmed Data : Neurochem Res. 2009 Feb ;34(2):238-43. Epub 2008 Jun 18. PMID: 18563561

Article Published Date : Feb 01, 2009

Authors : Sule Coşkun, Barbaros Balabanli, Ayşe Canseven, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Pharmacological Actions : Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

There is an apparent protective effect of melatonin on the Wi-Fi-induced oxidative stress in the laryngotracheal

mucosa of rats by inhibition of free radical formation and support of the glutathione peroxidase antioxidant system.

Pubmed Data : Eur Arch Otorhinolaryngol. 2013 May ;270(5):1695-700. Epub 2013 Mar 12. PMID: 23479077

Article Published Date : May 01, 2013

Authors : Giray Aynali, Mustafa Nazıroğlu, Ömer Çelik, Mustafa Doğan, Murat Yarıktaş, Hasan Yasan

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Additional Keywords : Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

These findings suggest that chronic exposure to ELF-EMF is similar to physiological stress, and induce changes on brain lipid profile.

Pubmed Data : BMC Neurosci. 2018 05 21 ;19(1):31. Epub 2018 May 21. PMID: 29783956

Article Published Date : Jan 20, 2018

Authors : Jesús Martínez-Sámano, Alan Flores-Poblano, Leticia Verdugo-Díaz, Marco Antonio Juárez-Oropeza, Patricia V Torres-Durán

Study Type : Animal Study
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22) , Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

These results suggest that direct chronic exposure to mobile phone caused severe biochemical and histopathological changes in the rat brain.

Pubmed Data : J Chem Neuroanat. 2016 12 ;78:10-19. Epub 2016 Jul 26. PMID: 27474378

Article Published Date : Jan 12, 2016

Authors : Shaymaa Hussein, Abdel-Aleem El-Saba, Mona K Galal

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Cyclooxygenase 2 Inhibitors : CK(1114) : AC(645) , Malondialdehyde

Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Inflammatory : CK(312) : AC(92) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Neurotoxic : CK(1458) : AC(323) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

ZInc attentuates oxidative stress related to electromagnetic field exposure in the rat brain.

Pubmed Data : Tohoku J Exp Med. 2006 Feb ;208(2):133-40. PMID: 16434836

Article Published Date : Feb 01, 2006

Authors : Cem Seref Bediz, Abdulkerim Kasim Baltaci, Rasim Mogulkoc, Esma Oztekin

Study Type : Animal Study
Additional Links
Substances : Zinc : CK(1067) : AC(165)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Lipopolysaccharide-Induced Toxicity (AC 1) (CK 5)

50 Hz magnetic fields and lipopolysaccharides synergistically reduce cell viability in vitro.

Pubmed Data : Int J Radiat Biol. 2016 10 ;92(10):583-9. Epub 2016 Jul 19. PMID: 27430265

Article Published Date : Jan 10, 2016

Authors : Maresuke Nakayama, Aya Nakamura, Tsuyoshi Hondou, Hidetake Miyata

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Lipopolysaccharide-Induced Toxicity : CK(1105) : AC(650), Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Liver Damage (AC 1) (CK 2)

It was determined that 2600 MHz EMF exposure caused damage to the liver.

Pubmed Data : Bratisl Lek Listy. 2018 ;119(8):481-489. PMID: 30160155

Article Published Date : Dec 31, 2017

Authors : I Postaci, O Coskun, N Senol, R Aslankoc, S Comlekci

Study Type : Animal Study
Additional Links
Diseases : Liver Damage : CK(1644) : AC(708)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Lymphoma (AC 3) (CK 14)

Long-term intermittent exposure to radiofrequency fields can enhance the probability that mice carrying a lymphomagenic oncogene will develop lymphomas.

Pubmed Data : Radiat Res. 1997 May ;147(5):631-40. PMID: 9146709

Article Published Date : May 01, 1997

Authors : M H Repacholi, A Basten, V Gebski, D Noonan, J Finnie, A W Harris

Study Type : Animal Study
Additional Links
Diseases : Lymphoma : CK(253) : AC(83) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study concludes that exposure of professional military personnel to anti-aircraft radars that existed in Western Europe from the 1960s until the 1990s may have

resulted in an increase in the incidence of hemolymphatic cancers.

Pubmed Data : Int J Cancer. 2009 Feb 15 ;124(4):945-51. PMID: 19035449

Article Published Date : Feb 15, 2009

Authors : Etienne Degrave, Ben Meeusen, André-Robert Grivegnée, Mathieu Boniol, Philippe Autier

Study Type : Human Study
Additional Links
Diseases : Lymphoma : CK(253) : AC(83)
Additional Keywords : Lymphoma : CK(253) : AC(83) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Cooking : CK(49) : AC(28)

This study examining mice exposed to extremely low frequency magnetic fields demonstrated that lifetime exposure increases the risk for various types of cancers.

Pubmed Data : Int J Radiat Biol. 2016 ;92(4):202-14. Epub 2016 Feb 19. PMID: 26894944

Article Published Date : Jan 01, 2016

Authors : Morando Soffritti, Eva Tibaldi, Michela Padovani, David G Hoel, Livio Giuliani, Luciano Bua, Michelina Lauriola, Laura Falcioni, Marco Manservigi, Fabiana Manservisi, Simona Panzacchi, Fiorella Belpoggi

Study Type : Animal Study
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Leukemias : CK(479) : AC(215) , Lymphoma : CK(253) : AC(83), Schwannoma : CK(5) : AC(3)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Lymphoma: Follicular (AC 1) (CK 10)

This large cohort study indicates an increased risk of acute myeloid leukemia and follicular lymphoma among men with extremely-low frequency electromagnetic field

exposure.

Pubmed Data : Cancer Causes Control. 2014 Feb ;25(2):203-14. Epub 2013 Nov 16. PMID: 24241907

Article Published Date : Feb 01, 2014

Authors : Tom Koeman, Piet A van den Brandt, Pauline Slottje, Leo J Schouten, R Alexandra Goldbohm, Hans Kromhout, Roel Vermeulen

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Lymphoma: Follicular : CK(10) : AC(1)
Additional Keywords : Lymphoma: Follicular : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Lymphoma: Non-Hodgkin (AC 1) (CK 10)

There is a risk excess of Non-Hodgkin's lymphoma observed in telecommunication and transport workers which could be explained by electromagnetic radiation exposure.

Pubmed Data : Int Arch Occup Environ Health. 2001 Aug ;74(6):443-9. PMID: 11563608

Article Published Date : Aug 01, 2001

Authors : M I Cano, M Pollán

Study Type : Human Study
Additional Links
Diseases : Lymphoma: Non-Hodgkin : CK(363) : AC(79), Non-Hodgkin Lymphoma : CK(373) : AC(80)
Additional Keywords : Non-Hodgkin Lymphoma : CK(373) : AC(80)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Mast Cell: Over-Active (AC 2) (CK 11)

This article proposes a hypothesis that mast cell activation by electromagnetic fields may underpin the negative effects of electromagnetic radiation.

Pubmed Data : Med Hypotheses. 2000 Apr ;54(4):663-71. PMID: 10859662

Article Published Date : Apr 01, 2000

Authors : S Gangi, O Johansson

Study Type : Review
Additional Links
Diseases : Mast Cell: Over-Active : CK(6) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Mast cell degranulation stimulator : CK(2) : AC(1)

This study demonstrates that mast cells may degranulate as a result of exposure to TV and PC screens.

Pubmed Data : J Cutan Pathol. 2001 Nov ;28(10):513-9. PMID: 11737520

Article Published Date : Nov 01, 2001

Authors : O Johansson, S Gangi, Y Liang, K Yoshimura, C Jing, P Y Liu

Study Type : Human Study
Additional Links
Diseases : Mast Cell: Over-Active : CK(6) : AC(4)
Additional Keywords : Mast Cell: Over-Active : CK(6) : AC(4) , Mast Cell: Over-Active : CK(6) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Mast cell degranulation stimulator : CK(2) : AC(1)

Melanoma (AC 1) (CK 10)

The authors of this study concluded that melanoma is associated with exposure to FM broadcasting.

Pubmed Data : Arch Environ Health. 2002 Jan-Feb;57(1):32-40. PMID: 12071358

Article Published Date : Jan 01, 2002

Authors : Orjan Hallberg, Olle Johansson

Study Type : Human Study
Additional Links
Diseases : Melanoma : CK(584) : AC(306) , Skin Cancer : CK(1175) : AC(495)
Additional Keywords : Skin Cancer : CK(1175) : AC(495) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Melanoma: Uveal (AC 1) (CK 10)

This study demonstrated a possible association of exposure to radiofrequency radiation with uveal melanoma.

Pubmed Data : Epidemiology. 2001 Jan ;12(1):7-12. PMID: **11138823**

Article Published Date : Jan 01, 2001

Authors : A Stang, G Anastassiou, W Ahrens, K Bromen, N Bornfeld, K H Jöckel

Study Type : Human Study
Additional Links
Diseases : Melanoma: Uveal : CK(1) : AC(1)
Additional Keywords : Melanoma: Uveal : CK(1) : AC(1), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Memory Disorders (AC 17) (CK 93)

916 MHz electromagnetic fields influence learning and memory in rats to some extent in a period during exposure.

Pubmed Data : Neurol Sci. 2013 Feb ;34(2):157-64. Epub 2012 Feb 24. PMID: 22362331

Article Published Date : Feb 01, 2013

Authors : Dongmei Hao, Lei Yang, Su Chen, Jun Tong, Yonghao Tian, Benhang Su, Shuicai Wu, Yanjun Zeng

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Acute low-level exposure to microwaves modulated at 7 Hz can affect cognitive processes such as attention and short-term memory in humans.

Pubmed Data : Int J Radiat Biol. 2002 Oct ;78(10):937-44. PMID: 12465659

Article Published Date : Oct 01, 2002

Authors : J Lass, V Tuulik, R Ferenets, R Riisalo, H Hinrikus

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Aluminum and ELF-MF may impact on learning memory and potentiate oxidative stress in mice.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):243-52. Epub 2013 Oct 26. PMID: 24158621

Article Published Date : Dec 01, 2013

Authors : Yuanxin Deng, Yanwen Zhang, Shujie Jia, Junkang Liu, Yanxia Liu, Weiwei Xu, Lei Liu

Study Type : Animal Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Aluminum : CK(533) : AC(185)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Cell phone radiation exposure is associated with a broad

range of brain protein changes which may explain the association between cell phone use and adverse health effects.

Pubmed Data : Electromagn Biol Med. 2012 Jan 20. Epub 2012 Jan 20. PMID: 22263702

Article Published Date : Jan 20, 2012

Authors : Adamantia F Fragopoulou, Athina Samara, Marianna H Antonelou, Anta Xanthopoulou, Aggeliki Papadopoulou, Konstantinos Vougas, Eugenia Koutsogiannopoulou, Ema Anastasiadou, Dimitrios J Stravopodis, George Th Tsangaris, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92) , Insomnia : CK(523) : AC(66) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Electrohypersensitive persons in this study were suffering not only from their symptoms, but also from economical and social problems.

Pubmed Data : Pathophysiology. 2012 Apr ;19(2):95-100. Epub 2012 Mar 27. PMID: 22458999

Article Published Date : Apr 01, 2012

Authors : Yasuko Kato, Olle Johansson

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Electromagnetic field exposure impacts spatial memory in mice.

Pubmed Data : Pathophysiology. 2010 Jun ;17(3):179-87. Epub 2009 Dec 1. PMID: 19954937

Article Published Date : Jun 01, 2010

Authors : A F Fragopoulou, P Miltiadous, A Stamatakis, F Stylianopoulou, S L Koussoulakos, L H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Exposure to cell phone electromagnetic fields modifies the brain's responses significantly during a memory task.

Pubmed Data : Neuroreport. 2000 Mar 20 ;11(4):761-4. PMID: 10757515

Article Published Date : Mar 20, 2000

Authors : C M Krause, L Sillanmäki, M Koivisto, A Häggqvist, C Saarela, A Revonsuo, M Laine, H Hämäläinen

Study Type : Human Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Long-term 1.8 GHZ RF-EMF induces memory impairments in rats that persist 2 weeks after radiation.

Pubmed Data : Electromagn Biol Med. 2013 Mar ;32(1):95-120. Epub 2013 Jan 15. PMID: 23320614

Article Published Date : Mar 01, 2013

Authors : Maria P Ntzouni, Aikaterini Skouroliakou, Nikolaos Kostomitsopoulos, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Long-term, low-level microwave exposure may inhibit learning and memory by altering gene expression.

Pubmed Data : Biomed Environ Sci. 2015 Aug ;28(8):558-70. PMID: 26383594

Article Published Date : Aug 01, 2015

Authors : Ya Li Zhao, Ying Xian Li, Hong Bo Ma, Dong Li, Hai Liang Li, Rui Jiang, Guang Han Kan, Zhen Zhong Yang, Zeng Xin Huang

Study Type : Human In Vitro
Additional Links
Diseases : Learning disorders : CK(194) : AC(53) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Epigenetic Modification : CK(329) : AC(127)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Low-intensity very high frequency radiation exposure is associated with an increased incidence of headache, insomnia and amnesia.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2004 Aug ;22(4):267-9. PMID: **15355705**

Article Published Date : Aug 01, 2004

Authors : Zheng-Quan Yuan, Feng Li, Deng-Gao Wang, Yong Wang, Ping Zhang

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92) , Insomnia : CK(523) : AC(66) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Microwave exposure reduces phosphorylated synapsin I leading to impaired GABA release and cognitive dysfunction.

Pubmed Data : PLoS One. 2014 ;9(4):e95503. Epub 2014 Apr 17. PMID: **24743689**

Article Published Date : Jan 01, 2014

Authors : Simo Qiao, Ruiyun Peng, Haitao Yan, Yabing Gao, Changzhen Wang, Shuiming Wang, Yong Zou, Xinping Xu, Li Zhao, Ji Dong, Zhentao Su, Xinxin Feng, Lifeng Wang, Xiangjun Hu

Study Type : Animal Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotransmitter Interference : CK(14) : AC(3) , Phosphorylated synapsin I (Ser-553) Downregulation : CK(4) : AC(2)

Mobile phone use may be associated with the headaches, memory and cognitive impairment, fatigue, and sleeplessness experienced by medical students.

Pubmed Data : Int J Occup Med Environ Health. 2008 ;21(4):289-93. PMID: 19228576

Article Published Date : Jan 01, 2008

Authors : Muhammad Mujahid Khan

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Fatigue : CK(312) : AC(49) , Headache : CK(785) : AC(92), Hearing Disorders : CK(1) : AC(1) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Prepubescent rats exposed to chronic radiofrequency electromagnetic radiation exhibit learning and memory dysfunction attributed to structural brain changes and decreased viable hippocampal cell count.

Pubmed Data : Metab Brain Dis. 2015 Oct ;30(5):1193-206. Epub 2015 Jun 3. PMID: 26033310

Article Published Date : Oct 01, 2015

Authors : Sareesh Naduvil Narayanan, Raju Suresh Kumar, Kalesh M Karun, Satheesha B Nayak, P Gopalakrishna Bhat

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53), Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Reduced hippocampal glucose uptake may be associated with cognitive impairment caused by microwave exposure.

Pubmed Data : Physiol Behav. 2012 Jul 16 ;106(5):631-7. Epub 2012 Apr 28. PMID: 22564535

Article Published Date : Jul 16, 2012

Authors : Yonghui Lu, Shangcheng Xu, Mindi He, Chunhai Chen, Lei Zhang, Chuan Liu, Fang Chu, Zhengping Yu, Zhou Zhou, Min Zhong

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

There was a a correlation between subjective symptoms and distance from base station in this study.

Pubmed Data : Int J Occup Med Environ Health. 2012 Mar ;25(1):31-40. Epub 2012 Jan 5. PMID: 22219055

Article Published Date : Mar 01, 2012

Authors : Alicja Bortkiewicz, Elżbieta Gadzicka, Agata Szyjkowska, Piotr Politański, Paweł Mamrot, Wiesław Szymczak, Marek Zmyślony

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This prospective cohort study in adolescents indicates that RF-EMF exposure may affect memory performance.

Pubmed Data : Environ Int. 2015 Dec ;85:343-51. Epub 2015 Oct 30. PMID: 26474271

Article Published Date : Dec 01, 2015

Authors : Anna Schoeni, Katharina Roser, Martin Röösli

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

Meningioma (AC 4) (CK 40)

There is an increased risk of glioma and meningioma from cumulative exposure to radiofrequency electromagnetic fields.

Pubmed Data : Environ Int. 2018 10 ;119:353-365. Epub 2018 Jul 8. PMID: 29996112

Article Published Date : Jan 10, 2018

Authors : Javier Vila, Michelle C Turner, Esther Gracia-Lavedan, Jordi Figuerola, Joseph D Bowman, Laurel Kincl, Lesley Richardson, Geza Benke, Martine Hours, Daniel Krewski, Dave McLean, Marie-Elise Parent, Siegal Sadetzki, Klaus Schlaefer, Brigitte Schlehofer, Joachim Schüz, Jack Siemiatycki, Martie van Tongeren, Elisabeth Cardis,

Study Type : Human Study
Additional Links
Diseases : Glioma : CK(333) : AC(169) , Meningioma : CK(26) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

These data suggest that occupational or residential exposure to ELF may play a role in the occurrence of meningioma.

Pubmed Data : Int J Cancer. 2011 Sep 15 ;129(6):1477-84. Epub 2011 Jan 12. PMID: 21792884

Article Published Date : Sep 14, 2011

Authors : Isabelle Baldi, Gaëlle Coureau, Anne Jaffré, Anne Gruber, Stéphane Ducamp, Dorothée Provost, Pierre Lebailly, Anne Vital, Hugues Loiseau, Roger Salamon

Study Type : Human Study
Additional Links
Diseases : Meningioma : CK(26) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

This pooled analysis of case-control studies showed an increased risk of meningioma among heavy users of mobile and cordless phones.

Pubmed Data : Oncol Rep. 2015 Jun ;33(6):3093-8. Epub 2015 Apr 27. PMID: 25963528

Article Published Date : Jun 01, 2015

Authors : Michael Carlberg, Lennart Hardell

Study Type : Human Study

Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Meningioma : CK(26) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This study confirmed previous results of an association between mobile and cordless phone use and malignant brain tumours. These findings provide support for the hypothesis that RF-EMFs play a role in carcinogenesis.

Pubmed Data : Int J Oncol. 2013 Dec ;43(6):1833-45. Epub 2013 Sep 24. PMID: 24064953

Article Published Date : Dec 01, 2013

Authors : Lennart Hardell, Michael Carlberg, Fredrik Söderqvist, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Meningioma : CK(26) : AC(8)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Mercury Poisoning (AC 2) (CK 2)

Maternal exposure to EM fields in mothers with dental amalgam fillings may cause elevated levels of mercury and trigger the increase in autism rates.

Pubmed Data : J Biomed Phys Eng. 2016 Mar ;6(1):41-6. Epub 2016 Mar 1. PMID: 27026954

Article Published Date : Feb 29, 2016

Authors : Gh Mortazavi, M Haghani, N Rastegarian, S Zarei, S M J Mortazavi

Study Type : Commentary
Additional Links
Diseases : Autism Spectrum Disorders : CK(2789) : AC(399) , Mercury Poisoning : CK(390) : AC(111)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Dental Amalgams : CK(20) : AC(1)

Women with dental amalgam fillings should limit their exposure to electromagnetic fields to prevent toxic effects of mercury in their fetuses.

Pubmed Data : Rev Environ Health. 2015 ;30(4):287-92. PMID: 26544100

Article Published Date : Dec 31, 2014

Authors : Ghazal Mortazavi, S M J Mortazavi

Study Type : Review
Additional Links
Diseases : Mercury Poisoning : CK(390) : AC(111)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Dental Amalgams : CK(20) : AC(1)

Metabolic Diseases (AC 1) (CK 1)

Extremely low frequency electromagnetic fields alter glucose metabolism in budding yeast, providing a possible mechanism by which they may exert their biological effects.

Pubmed Data : Front Microbiol. 2016 ;7:1378. Epub 2016 Aug 31. PMID: 27630630

Article Published Date : Jan 01, 2016

Authors : Kang-Wei Lin, Chuan-Jun Yang, Hui-Yong Lian, Peng Cai

Study Type : In Vitro Study
Additional Links
Diseases : Metabolic Diseases : CK(411) : AC(75)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Migraines (AC 1) (CK 10)

There was an association between headaches, migraines, and dizziness and proximity to radiofrequency-emitting military antennae.

Pubmed Data : Occup Environ Med. 2007 Jun ;64(6):402-8. Epub 2007 Jan 25. PMID: 17259164

Article Published Date : Jun 01, 2007

Authors : A W Preece, A G Georgiou, E J Dunn, S C Farrow

Study Type : Human Study
Additional Links
Diseases : Dizziness : CK(1) : AC(1) , Headache : CK(785) : AC(92) , Migraines : CK(20) : AC(2)
Additional Keywords : Migraines : CK(20) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Miscarriage (AC 1) (CK 2)

The results of this study indicate that radiofrequency radiation or methanol on day 9 increased the incidence of resorbed fetuses.

Pubmed Data : Int J Toxicol. 2001 Mar-Apr;20(2):89-100. PMID: 11354470

Article Published Date : Mar 01, 2001

Authors : B K Nelson, D L Snyder, P B Shaw

Study Type : Animal Study
Additional Links
Diseases : Miscarriage : CK(323) : AC(37)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3)

Mitochondrial Dysfunction (AC 7) (CK

26)

1950 MHz induces mitochondrial damage and apoptosis in astrocytes.

Pubmed Data : PLoS One. 2012 ;7(8):e42332. Epub 2012 Aug 1. PMID: 22870319

Article Published Date : Jan 01, 2012

Authors : Yu-xiao Liu, Jun-li Tai, Guo-qing Li, Zhi-wen Zhang, Jing-hui Xue, Hong-sheng Liu, Heng Zhu, Ji-de Cheng, Yuan-Ling Liu, An-ming Li, Yi Zhang

Study Type : Human In Vitro
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

2.1 GHz microwave radiation decreases cell viability, reduces mitochondrial membrane potential, and results in cell death in breast fibroblast cells in vitro.

Pubmed Data : Cell Biochem Biophys. 2013 ;67(3):1371-8. PMID: 23723005

Article Published Date : Jan 01, 2013

Authors : Meric Arda Esmekaya, Nesrin Seyhan, Handan Kayhan, Mehmet Zahid Tuysuz, Ayşe Canseven Kurşun, Münci Yağcı

Study Type : Human In Vitro
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53)

3G cell phone exposure impacts brain function by inducing oxidative stress, DNA fragmentation, and apoptosis through the p38 MAPK pathway.

Pubmed Data : Cell Biochem Biophys. 2014 Mar ;68(2):347-58. PMID: 23949848

Article Published Date : Mar 01, 2014

Authors : Kavindra Kumar Kesari, Ramovatar Meena, Jayprakash Nirala, Jitender Kumar, H N

Verma

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136), Neurologic Disorders : CK(66) : AC(30) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Low intensity static magnetic fields increase cellular free radical content and decrease mitochondrial membrane potential.

Pubmed Data : Bioelectromagnetics. 2013 Dec ;34(8):618-29. Epub 2013 Sep 25. PMID: 24217848

Article Published Date : Dec 01, 2013

Authors : Emanuele Calabrò, Salvatore Condello, Monica Currò, Nadia Ferlazzo, Daniela Caccamo, Salvatore Magazù, Riccardo Ientile

Study Type : Human In Vitro
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Microwave exposure decreases mitochondrial membrane potential, increases DNA fragmentation, and induces apoptosis via a caspase-3-dependent pathway in vitro.

Pubmed Data : Int J Med Sci. 2014 ;11(5):426-35. Epub 2014 Mar 9. PMID: 24688304

Article Published Date : Jan 01, 2014

Authors : Hongyan Zuo, Tao Lin, Dewen Wang, Ruiyun Peng, Shuiming Wang, Yabing Gao, Xinping Xu, Yang Li, Shaoxia Wang, Li Zhao, Lifeng Wang, Hongmei Zhou

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Mitochondria : CK(3) : AC(3), Mitochondria : CK(3) : AC(3)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Neurotoxic : CK(1458) : AC(323)

Radiofrequency-induced stress can damage mitochondria and induce elimination of damaged organelles via autophagy.

Pubmed Data : Cancer. 2014 Nov 1 ;120(21):3418-25. Epub 2014 Jul 1. PMID: **24986120**

Article Published Date : Nov 01, 2014

Authors : Steven A Curley, Flavio Palalon, Xiaolin Lu, Nadezhda V Koshkina

Study Type : Human In Vitro
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondria : CK(3) : AC(3) , Mitochondria : CK(3) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Ultra-high frequency electromagnetic radiation influences mitochondrial function through superoxide generation, formation of iron-nitrosyl complexes, and induction of cellular hypoxia as a result of electron transport chain abnormalities.

Pubmed Data : Int J Radiat Biol. 2014 May ;90(5):357-62. PMID: **24597749**

Article Published Date : May 01, 2014

Authors : Anatoly Burlaka, Marina Selyuk, Marat Gafurov, Sergei Lukin, Viktoria Potaskalova, Evgeny Sidorik

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondria : CK(3) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hypoxia : CK(3) : AC(2) , Oxidant : CK(122) : AC(48)

Mobile Phone-Induced Oxidative Stress (AC 16) (CK 61)

30 Minutes Exposure To 4G Cell Phone Radiation Affects Brain Activity.

Pubmed Data : Clin Neurophysiol. 2013 Sep 4. Epub 2013 Sep 4. PMID: 24012322

Article Published Date : Sep 04, 2013

Authors : Bin Lv, Zhiye Chen, Tongning Wu, Qing Shao, Duo Yan, Lin Ma, Ke Lu, Yi Xie

Study Type : Human Study
Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

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916 MHz microwave radiation induces neoplastic transformation in cells.

Pubmed Data : Cell Mol Neurobiol. 2012 Mar 7. Epub 2012 Mar 7. PMID: 22395787

Article Published Date : Mar 07, 2012

Authors : Lei Yang, Dongmei Hao, Minglian Wang, Yi Zeng, Shuicai Wu, Yanjun Zeng

Study Type : In Vitro Study
Additional Links
Diseases : Cell-Phone and Computer Screen Radiotoxicity : CK(116) : AC(20) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144)

Effects of electromagnetic fields exposure on the antioxidant defense system.

Pubmed Data : J Microsc Ultrastruct. 2017 Oct-Dec;5(4):167-176. Epub 2017 Aug 2. PMID: 30023251

Article Published Date : Sep 30, 2017

Authors : Elfide Gizem Kıvrak, Kıymet Kübra Yurt, Arife Ahsen Kaplan, Işınsu Alkan, Gamze Altun

Study Type : Review

Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Evidence of oxidative stress after continuous exposure to Wi-Fi radiation in rat model.

Pubmed Data : Environ Sci Pollut Res Int. 2018 Dec ;25(35):35396-35403. Epub 2018 Oct 21. PMID: 30343375

Article Published Date : Nov 30, 2018

Authors : Kasra Kamali, Ali Taravati, Shayan Sayyadi, Fatemeh Zahra Gharib, Houman Maftoon

Study Type : Animal Study
Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

Exposure to a continuous 900-MHz EMF for 1 h daily during middle and late adolescence may cause changes in the female rat kidney at postnatal day 60.

Pubmed Data : Toxicol Ind Health. 2018 Oct ;34(10):693-702. Epub 2018 Jul 15. PMID: 30009691

Article Published Date : Sep 30, 2018

Authors : DeryaÖztürk Okatan, Ali Ertan Okatan, Hatice Hancı, Selim Demir, SerapÖzer Yaman, Serdar Çolakoğlu, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Exposure to microwave radiation from cellular phones during pregnancy has certain harm on fetal rat brains.

Pubmed Data : Electromagn Biol Med. 2012 Jan 23. Epub 2012 Jan 23. PMID: 22268709

Article Published Date : Jan 23, 2012

Authors : Ji Jing, Zhang Yuhua, Yang Xiao-Qian, Jiang Rongping, Guo Dong-Mei, Cui Xi

Study Type : Animal Study
Additional Links

Diseases : Cell Phone Induced Disease : CK(16) : AC(4) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Prenatal Radiation Exposure : CK(16) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Liver antioxidant stores protect the brain from oxidative damage as a result of exposure to 900 MHz and 1800 MHz electromagnetic fields.

Pubmed Data : J Matern Fetal Neonatal Med. 2014 Dec ;27(18):1915-21. Epub 2014 Apr 9. PMID: 24580725

Article Published Date : Dec 01, 2014

Authors : Hasan Çetin, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Nural Pastacı, Mehmet Okan Özkaya

Study Type : Animal Study
Additional Links
Substances : Glutathione : CK(63) : AC(17) , Selenium : CK(999) : AC(188) , Vitamin A : CK(678) : AC(102), Vitamin E : CK(2077) : AC(371)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Neuroprotective Agents : CK(6374) : AC(2801)
Additional Keywords : Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Mobile phone electromagnetic radiation affects amyloid precursor protein and α-synuclein metabolism in SH-SY5Y cells.

Pubmed Data : Pathophysiology. 2019 Mar 1. Epub 2019 Mar 1. PMID: 30850244

Article Published Date : Feb 28, 2019

Authors : Aikaterina L Stefi, Lukas H Margaritis, Aikaterini S Skouroliakou, Dido Vassilacopoulou

Study Type : In Vitro Study
Additional Links
Diseases : Alzheimer's Disease : CK(2442) : AC(871) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Parkinson's Disease : CK(1155) : AC(411)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Mobile phone-like emissions affect the electroencephalogram of human subjects during non-REM sleep.

Pubmed Data : Bioelectromagnetics. 2011 Aug 3. Epub 2011 Aug 3. PMID: 21812009

Article Published Date : Aug 03, 2011

Authors : Sarah P Loughran, Raymond J McKenzie, Melinda L Jackson, Mark E Howard, Rodney J Croft

Study Type : Human Study
Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Oxidative stress-mediated alterations on sperm parameters in male Wistar rats exposed to 3G mobile phone radiation.

Pubmed Data : Andrologia. 2018 Nov 20:e13201. Epub 2018 Nov 20. PMID: 30461041

Article Published Date : Nov 19, 2018

Authors : Rohit Gautam, Kumari Vandana Singh, Jayprakash Nirala, Nina Nancy Murmu, Ramovatar Meena, Paulraj Rajamani

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Role of mitochondria in the oxidative stress induced by electromagnetic fields: focus on reproductive systems.

Pubmed Data : Oxid Med Cell Longev. 2018 ;2018:5076271. Epub 2018 Nov 8. PMID: 30533171

Article Published Date : Dec 31, 2017

Authors : Silvano Junior Santini, Valeria Cordone, Stefano Falone, Mahmut Mijit, Carla Tatone, Fernanda Amicarelli, Giovanna Di Emidio

Study Type : Review
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

The effects of radiofrequency electromagnetic radiation on sperm function.

Pubmed Data : Reproduction. 2016 12 ;152(6):R263-R276. Epub 2016 Sep 6. PMID: 27601711

Article Published Date : Jan 11, 2016

Authors : B J Houston, B Nixon, B V King, G N De Iuliis, R J Aitken

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

The impact of exposure of diabetic rats to 900 MHz electromagnetic radiation emitted from mobile phone antenna on hepatic oxidative stress.

Pubmed Data : Electromagn Biol Med. 2019 Jul 13:1-10. Epub 2019 Jul 13. PMID: 31304806

Article Published Date : Jul 12, 2019

Authors : Lina A Ismaiil, Wissam H Joumaa, Mohamed E Moustafa

Study Type : Animal Study
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(6029) : AC(1167) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

There is a significant increase in brain lipid and protein oxidation after electromagnetic radiation (EMR) exposure and that garlic has a protective effect against this oxidative stress.

Pubmed Data : Electromagn Biol Med. 2013 Jan 9. Epub 2013 Jan 9. PMID: 23301880

Article Published Date : Jan 09, 2013

Authors : Birsen Bilgici, Aysegul Akar, Bahattin Avci, Ozgur Korhan Tuncel

Study Type : Animal Study
Additional Links
Substances : Garlic : CK(1099) : AC(367)
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

There is an an almost doubling of the risk of head tumours induced by long-term mobile phone use or latency.

Pubmed Data : Environ Health. 2011 Jun 17;10(1):59. Epub 2011 Jun 17. PMID: 21679472

Article Published Date : Jun 17, 2011

Authors : Angelo G Levis, Nadia Minicuci, Paolo Ricci, Valerio Gennaro, Spiridione Garbisa

Study Type : Meta Analysis
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

This study attempts to explain the mechanisms behind non-thermal damage induced by electromagnetic radiation and points out clear flaws in our current model of measuring damage associated with electromagnetic field exposure.

Pubmed Data : PLoS One. 2014 ;9(3):e93065. Epub 2014 Mar 28. PMID: 24681944

Article Published Date : Jan 01, 2014

Authors : Robert J Usselman, Iain Hill, David J Singel, Carlos F Martino

Study Type : In Vitro Study
Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1), Laptop Computer Use : CK(20) : AC(2), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Motor Neuron Disease (AC 1) (CK 1)

The findings of this study add evidence to an association between magnetic field exposure and dementia.

Pubmed Data : Soz Praventivmed. 2006 ;51(4):210-20. PMID: 17193783

Article Published Date : Jan 01, 2006

Authors : Kerstin Hug, Martin Röösli, Regula Rapp

Study Type : Review
Additional Links
Diseases : Motor Neuron Disease : CK(506) : AC(111) , Neurodegenerative Diseases : CK(6185) : AC(1785)
Additional Keywords : Neurodegenerative Diseases : CK(6185) : AC(1785)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Multiple Chemical Sensitivity (AC 1) (CK 1)

This review outlines the overlooked mechanisms of electromagnetic field damage and the critical role Earth's natural electromagnetic signaling plays in the biology of the human body.

Pubmed Data : Rev Environ Health. 2015 ;30(4):293-303. PMID: 26368042

Article Published Date : Jan 01, 2015

Authors : Cindy Sage

Study Type : Review
Additional Links
Diseases : Circadian Dysregulation : CK(165) : AC(34) , Electrosensitivity : CK(11) : AC(2) , Multiple Chemical Sensitivity : CK(34) : AC(5)
Additional Keywords : Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4) , Circadian Rhythm : CK(23) : AC(4), Circadian Rhythm : CK(23) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Myocardial Ischemia (AC 1) (CK 2)

The effects of broad band EMF on HSP70 appear to be biphasic, and HSP70 overexpression might not be directly related to improved protection against ischemia-reperfusion.

Pubmed Data : Life Sci. 2004 Sep 3 ;75(16):1925-36. PMID: 15306160

Article Published Date : Sep 03, 2004

Authors : Raffaella Ronchi, Lidia Marano, Paola Braidotti, Paola Bianciardi, Mario Calamia, Cesare Fiorentini, Michele Samaja

Study Type : Animal Study
Additional Links
Diseases : Myocardial Ischemia : CK(370) : AC(164)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Neuroblastoma (AC 4) (CK 20)

50-MHz magnetic field exposure induces micronuclei formation and superoxide production in a seemingly dose-dependent way.

Pubmed Data : J R Soc Interface. 2016 Jan ;13(114):20150995. PMID: 26791000

Article Published Date : Jan 01, 2016

Authors : Kavindra Kumar Kesari, Jukka Juutilainen, Jukka Luukkonen, Jonne Naarala

Study Type : Human In Vitro
Additional Links
Diseases : Neuroblastoma : CK(86) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields may promote more aggressive behavior in neuroblastoma cells.

Pubmed Data : Sci Rep. 2017 09 13 ;7(1):11470. Epub 2017 Sep 13. PMID: 28904402

Article Published Date : Jan 13, 2017

Authors : S Falone, S Santini, V Cordone, P Cesare, A Bonfigli, M Grannonico, G Di Emidio, C Tatone, M Cacchio, F Amicarelli

Study Type : Human In Vitro
Additional Links
Diseases : Neuroblastoma : CK(86) : AC(53) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Microwave radiation alters cell cycle progression in neuroblastoma.

Pubmed Data : Cell Biochem Biophys. 2016 Jun ;74(2):99-107. Epub 2016 Jun 3. PMID: 27260669

Article Published Date : Jun 01, 2016

Authors : Handan Kayhan, Meric Arda Esmekaya, Atiye Seda Yar Saglam, Mehmed Zahid Tuysuz, Ayşe Gulnihal Canseven, Abdullah Munci Yagci, Nesrin Seyhan

Study Type : Human In Vitro
Additional Links
Diseases : Neuroblastoma : CK(86) : AC(53)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Neurodegenerative Diseases (AC 9) (CK 15)

900 MHz electromagnetic field exposure exacerbates the neurotoxic effect of hydrogen peroxide in rat primary cortical neurons.

Pubmed Data : Bioelectromagnetics. 2009 Oct ;30(7):564-72. PMID: 19479910

Article Published Date : Oct 01, 2009

Authors : Giovanna Del Vecchio, Alessandro Giuliani, Mercedes Fernandez, Pietro Mesirca, Ferdinando Bersani, Rosanna Pinto, Lucia Ardoino, Giorgio A Lovisolo, Luciana Giardino, Laura Calzà

Study Type : In Vitro Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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900 MHz radiation emitted from mobile/cellular phones can be an agent to alter some biomolecules such as brain protein.

Pubmed Data : Electromagn Biol Med. 2012 Jan 23. Epub 2012 Jan 23. PMID: 22268730

Article Published Date : Jan 23, 2012

Authors : Suleyman Dasdag, Mehmet Zulkuf Akdag, Goksel Kizil, Murat Kizil, Dilek Ulker Cakir, Beran Yokus

Study Type : Animal Study
Additional Links
Diseases : Cell Phone Induced Disease : CK(16) : AC(4) , Neurodegenerative Diseases : CK(6185) : AC(1785)
Additional Keywords : Undefined : CK(14) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

ELF-MFs alter the expression of the α-synuclein, which is specifically stimulated upon ELF-MFs exposure via both direct miR-34 targeting and oxidative stress.

Pubmed Data : Mol Neurobiol. 2018 Jul ;55(7):5698-5714. Epub 2017 Oct 16. PMID: 29039021

Article Published Date : Jul 01, 2018

Authors : Claudia Consales, Claudia Cirotti, Giuseppe Filomeni, Martina Panatta, Alessio Butera, Caterina Merla, Vanni Lopresto, Rosanna Pinto, Carmela Marino, Barbara Benassi

Study Type : In Vitro Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Electromagnetic fields may induce oxidative stress in human neuronal cells.

Pubmed Data : PLoS One. 2014 ;9(8):e104973. Epub 2014 Aug 15. PMID: **25127118**

Article Published Date : Jan 01, 2014

Authors : Marcella Reale, Mohammad A Kamal, Antonia Patruno, Erica Costantini, Chiara D'Angelo, Miko Pesce, Nigel H Greig

Study Type : Human In Vitro
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Rats exposed to mobile phone radiation present with higher oxidative stress, reduced antioxidant activity, and extensive neurodegeneration in the brain.

Pubmed Data : Neurol Res. 2014 Dec ;36(12):1072-9. Epub 2014 May 26. PMID: **24861496**

Article Published Date : Dec 01, 2014

Authors : Nidhi Saikhedkar, Maheep Bhatnagar, Ayushi Jain, Pooja Sukhwal, Chhavi Sharma, Neha Jaiswal

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Brain: Oxidative Stress : CK(79) : AC(46) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

The findings of this study add evidence to an association between magnetic field exposure and dementia.

Pubmed Data : Soz Praventivmed. 2006 ;51(4):210-20. PMID: **17193783**

Article Published Date : Jan 01, 2006

Authors : Kerstin Hug, Martin Röösli, Regula Rapp

Study Type : Review
Additional Links
Diseases : Motor Neuron Disease : CK(506) : AC(111) , Neurodegenerative Diseases : CK(6185) : AC(1785)
Additional Keywords : Neurodegenerative Diseases : CK(6185) : AC(1785)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The most promising arena for EMF research appears to be neurological effects, according to this analysis.

Pubmed Data : Front Public Health. 2016 ;4:193. Epub 2016 Sep 7. PMID: 27656641

Article Published Date : Jan 01, 2016

Authors : Fred Parham, Christopher J Portier, Xiaoqing Chang, Meike Mevissen

Study Type : Review
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785)
Additional Keywords : Neurodegenerative Diseases : CK(6185) : AC(1785)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This review examines in vitro and in vivo and epidemiological works that gave a new insight about the effect of radio frequency exposure, relating to intracellular molecular pathways that lead to biological and functional outcomes.

Pubmed Data : Int J Mol Sci. 2014 Mar 27 ;15(4):5366-87. Epub 2014 Mar 27. PMID: 24681584

Article Published Date : Mar 27, 2014

Authors : Lisa Gherardini, Gastone Ciuti, Selene Tognarelli, Caterina Cinti

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review summarizes the research on electromagnetic

fields, oxidative stress, and its link to neurodegeneration.

Pubmed Data : Int J Cell Biol. 2012 ;2012:683897. Epub 2012 Sep 9. PMID: 22991514

Article Published Date : Jan 01, 2012

Authors : Claudia Consales, Caterina Merla, Carmela Marino, Barbara Benassi

Study Type : Review
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Neurologic Disorders (AC 2) (CK 5)

3G cell phone exposure impacts brain function by inducing oxidative stress, DNA fragmentation, and apoptosis through the p38 MAPK pathway.

Pubmed Data : Cell Biochem Biophys. 2014 Mar ;68(2):347-58. PMID: 23949848

Article Published Date : Mar 01, 2014

Authors : Kavindra Kumar Kesari, Ramovatar Meena, Jayprakash Nirala, Jitender Kumar, H N Verma

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136), Neurologic Disorders : CK(66) : AC(30) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

This case report demonstrates a neurological abnormality in a patient after prolonged use of a mobile phone.

Pubmed Data : Occup Med (Lond). 2000 Jul ;50(5):366-8. PMID: 10975136

Article Published Date : Jul 01, 2000

Authors : B Hocking, R Westerman

Study Type : Human: Case Report
Additional Links
Diseases : Neurologic Disorders : CK(66) : AC(30)
Additional Keywords : Neurologic Disorders : CK(66) : AC(30)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Nickel Poisoning (AC 1) (CK 1)

Exposure to RF-EMFs emitted from mobile phones can lead to human exposure to higher levels of nickel in saliva in patients with orthodontic appliances.

Pubmed Data : Int Orthod. 2018 Jul 11. Epub 2018 Jul 11. PMID: 30007574

Article Published Date : Jul 10, 2018

Authors : Seyed Mohammad Javad Mortazavi, Maryam Paknahad, Iman Khaleghi, Mahsa Eghlidospour

Study Type : In Vitro Study
Additional Links
Diseases : Nickel Poisoning : CK(13) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Non-Hodgkin Lymphoma (AC 2) (CK 20)

There is a risk excess of Non-Hodgkin's lymphoma

observed in telecommunication and transport workers which could be explained by electromagnetic radiation exposure.

Pubmed Data : Int Arch Occup Environ Health. 2001 Aug ;74(6):443-9. PMID: 11563608

Article Published Date : Aug 01, 2001

Authors : M I Cano, M Pollán

Study Type : Human Study
Additional Links
Diseases : Lymphoma: Non-Hodgkin : CK(363) : AC(79), Non-Hodgkin Lymphoma : CK(373) : AC(80)
Additional Keywords : Non-Hodgkin Lymphoma : CK(373) : AC(80)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

These results indicate an association between T-cell Non-Hodgkin's lymphoma and the use of cellular and cordless telephones.

Pubmed Data : Int Arch Occup Environ Health. 2005 Sep ;78(8):625-32. Epub 2005 Oct 12. PMID: 16001209

Article Published Date : Sep 01, 2005

Authors : Lennart Hardell, Mikael Eriksson, Michael Carlberg, Christer Sundström, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Non-Hodgkin Lymphoma : CK(373) : AC(80)
Additional Keywords : Non-Hodgkin Lymphoma : CK(373) : AC(80), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Nonlymphocytic Leukemia (AC 1) (CK 10)

Nonlymphocytic leukemia was significantly elevated among Korean navy war technicians in occupations with high exposure to radar.

Pubmed Data : Am J Epidemiol. 2002 May 1 ;155(9):810-8. PMID: 11978584

Article Published Date : May 01, 2002

Authors : Frank D Groves, William F Page, Gloria Gridley, Laure Lisimaque, Patricia A Stewart, Robert E Tarone, Mitchell H Gail, John D Boice, Gilbert W Beebe

Study Type : Human Study
Additional Links
Diseases : Nonlymphocytic Leukemia : CK(10) : AC(1)
Additional Keywords : Nonlymphocytic Leukemia : CK(10) : AC(1) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Ocular Inflammation (AC 1) (CK 2)

Acute high intensity microwave exposure temporarily stimulates inflammation in rabbit eyes.

Pubmed Data : Bioelectromagnetics. 2004 Apr ;25(3):228-33. PMID: 15042632

Article Published Date : Apr 01, 2004

Authors : Masami Kojima, Ikuho Hata, Kanako Wake, So-ichi Watanabe, Yukio Yamanaka, Yoshitsugu Kamimura, Masao Taki, Kazuyuki Sasaki

Study Type : Animal Study
Additional Links
Diseases : Ocular Inflammation : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Ovarian Diseases (AC 1) (CK 2)

Mobile phone radiation may decrease the number of ovarian follicles in rats.

Pubmed Data : Arch Gynecol Obstet. 2009 Nov ;280(5):729-33. Epub 2009 Feb 25. PMID: 19241083

Article Published Date : Nov 01, 2009

Authors : Abdulaziz Gul, Hacer Celebi, Serdar Uğraş

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51) , Ovarian Diseases : CK(14) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Oxidative Stress (AC 164) (CK 432)

0.1 mT magnetic field increases free radical production by phorbol 12-myristate 13- acetate oxidative burst.

Pubmed Data : FEBS Lett. 1995 Dec 4 ;376(3):164-6. PMID: 7498533

Article Published Date : Dec 04, 1995

Authors : S Roy, Y Noda, V Eckert, M G Traber, A Mori, R Liburdy, L Packer

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

1800 MHz RF-EMF fields result in cell type-dependent DNA damage and a significant increase in reactive oxygen species level, however researchers conclude it doesn't contribute to cell dysfunction.

Pubmed Data : PLoS One. 2013 ;8(1):e54906. Epub 2013 Jan 23. PMID: 23355902

Article Published Date : Jan 01, 2013

Authors : Shanshan Xu, Guangdi Chen, Chunjing Chen, Chuan Sun, Danying Zhang, Manuel

Murbach, Niels Kuster, Qunli Zeng, Zhengping Xu

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

1800 MHz exposure results in significant increase in cellular reactive oxygen species in vitro.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):381-6. Epub 2015 Aug 28. PMID: **25119294**

Article Published Date : Jan 01, 2015

Authors : Ana Marija Marjanovic, Ivan Pavicic, Ivancica Trosic

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Cooking : CK(49) : AC(28)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

1800 MHz increases oxidative stress and apoptosis in mouse-derived sperm cells, but N-acetyl cysteine and autophagy prevented EMF-associated cell death.

Pubmed Data : Toxicol Lett. 2014 Aug 4 ;228(3):216-24. Epub 2014 May 9. PMID: **24813634**

Article Published Date : Aug 04, 2014

Authors : Kaijun Liu, Guowei Zhang, Zhi Wang, Yong Liu, Jianyun Dong, Xiaomei Dong, Jinyi Liu, Jia Cao, Lin Ao, Shaoxiang Zhang

Study Type : In Vitro Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)

Additional Keywords : Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Oxidant : CK(122) : AC(48)

2.4 GHz electromagnetic field exposure increases DNA oxidation in brain and plasma and plasma protein oxidation in rats. Garlic reduces biomarkers of both DNA and protein oxidation, suggesting it protects against the adverse effects of EMF radiation.

Pubmed Data : Int J Radiat Biol. 2014 Oct ;90(10):892-6. Epub 2014 Jun 25. PMID: **24844368**

Article Published Date : Oct 01, 2014

Authors : HaticeŞ Gürler, Birşen Bilgici, Ayşegül K Akar, Leman Tomak, Abdülkerim Bedir

Study Type : Animal Study
Additional Links
Substances : Garlic : CK(1099) : AC(367)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4), Genoprotective : CK(413) : AC(148), Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Plant Extracts : CK(11762) : AC(4236), Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

2.45 GHz electromagnetic radiation exposure stimulates proliferation in human leukemia cancer cells via oxidative stress and calcium influx.

Pubmed Data : Int J Radiat Biol. 2012 Jun ;88(6):449-56. Epub 2012 May 2. PMID: **22489926**

Article Published Date : Jun 01, 2012

Authors : Mustafa Nazıroğlu, Bilal Ciğ, Salih Doğan, Abdulhadi Cihangir Uğuz, Selin Dilek, Dahdouh Faouzi

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215), Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress :

CK(6519) : AC(2436)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48) , Proliferative : CK(17) : AC(6)

2.45GHz electromagnetic radiation may negatively impact implantation and pregnancy via oxidative stress.

Pubmed Data : Appl Biochem Biotechnol. 2013 Mar ;169(5):1727-51. Epub 2013 Jan 22. PMID: 23334843

Article Published Date : Mar 01, 2013

Authors : Saba Shahin, Vineet Prakash Singh, Ritesh K Shukla, Alok Dhawan, Ravi Kumar Gangwar, Surya Pal Singh, Chandra Mohini Chaturvedi

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Pregnancy : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)

3G cell phone exposure impacts brain function by inducing oxidative stress, DNA fragmentation, and apoptosis through the p38 MAPK pathway.

Pubmed Data : Cell Biochem Biophys. 2014 Mar ;68(2):347-58. PMID: 23949848

Article Published Date : Mar 01, 2014

Authors : Kavindra Kumar Kesari, Ramovatar Meena, Jayprakash Nirala, Jitender Kumar, H N Verma

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136), Neurologic Disorders : CK(66) : AC(30) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 GHz microwave radiation exposure at a specific absorption rate of 0.014 W/kg induces oxidative and genotoxic stress in rats.

Pubmed Data : Indian J Exp Biol. 2010 Jun ;48(6):586-92. PMID: 20882761

Article Published Date : Jun 01, 2010

Authors : Sanjay Kumar, Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 Hz electromagnetic fields induce genomic instability in exposed cells.

Pubmed Data : Mutat Res. 2014 Feb ;760:33-41. Epub 2013 Dec 26. PMID: 24374227

Article Published Date : Feb 01, 2014

Authors : Jukka Luukkonen, Anu Liimatainen, Jukka Juutilainen, Jonne Naarala

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 Hz electromagnetic fields stimulate superoxide radical anion formation in human K562 cells which is attentuated by melatonin.

Pubmed Data : Radiat Environ Biophys. 2010 Nov ;49(4):731-41. Epub 2010 Jun 26. PMID: 20582429

Article Published Date : Nov 01, 2010

Authors : Ann-Christine Mannerling, Myrtill Simkó, Kjell Hansson Mild, Mats-Olof Mattsson

Study Type : Human In Vitro
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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50 Hz magnetic fields and lipopolysaccharides synergistically reduce cell viability in vitro.

Pubmed Data : Int J Radiat Biol. 2016 10 ;92(10):583-9. Epub 2016 Jul 19. PMID: 27430265

Article Published Date : Jan 10, 2016

Authors : Maresuke Nakayama, Aya Nakamura, Tsuyoshi Hondou, Hidetake Miyata

Study Type : Human In Vitro

Additional Links

Diseases : DNA damage : CK(1482) : AC(545) , Lipopolysaccharide-Induced Toxicity : CK(1105) : AC(650), Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

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50 days of exposure to 3 MT electromagnetic field induces oxidative stress and lipid peroxidation in rats, which is attentuated by vitamin E.

Pubmed Data : Basic Clin Neurosci. 2016 Oct ;7(4):315-322. PMID: 27872692

Article Published Date : Oct 01, 2016

Authors : Ahmad Ali Ghanbari, Kobra Shabani, Daryoush Mohammad Nejad

Study Type : Animal Study

Additional Links

Substances : Vitamin E : CK(2077) : AC(371)

Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)

Pharmacological Actions : Antioxidant : CK(9) : AC(4)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

50-Hz magnetic field increases intracellular reactive oxygen species in amniotic epithelial cells.

Pubmed Data : Int J Radiat Biol. 2016 ;92(3):148-55. Epub 2016 Feb 5. PMID: 26850078

Article Published Date : Jan 01, 2016

Authors : Baihuan Feng, Liping Qiu, Chunmei Ye, Liangjing Chen, Yiti Fu, Wenjun Sun

Study Type : Human In Vitro

Additional Links

Diseases : Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

50-Hz magnetic fields are able to potentiate cellular damage induced in vitro by oxidizing agents.

Pubmed Data : Bioelectromagnetics. 1997 ;18(2):125-31. PMID: **9084863**

Article Published Date : Jan 01, 1997

Authors : M Fiorani, B Biagiarelli, F Vetrano, G Guidi, M Dachà, V Stocchi

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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60 Hz electromagnetic field exposure may increase oxidative stress and lipid peroxidation in rats.

Pubmed Data : J Diabetes Metab Disord. 2014 ;13(1):85. Epub 2014 Aug 13. PMID: **25152870**

Article Published Date : Jan 01, 2014

Authors : Soroush Seifirad, Shahrokh Farzampour, Mitra Nourbakhsh, Mahsa Mohammad Amoli, Maryam Razzaghy-Azar, Bagher Larijani

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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60 Hz electromagnetic fields deteriorate the antioxidant defensive system by reactive oxygen species.

Pubmed Data : J Photochem Photobiol B. 2004 Jan 23 ;73(1-2):43-8. PMID: **14732250**

Article Published Date : Jan 23, 2004

Authors : Byung-Cheon Lee, Hyeon-Min Johng, Jae-Kwan Lim, Ji Hoon Jeong, Ku Youn Baik, Tae Jeong Nam, Jung Ho Lee, Jungdae Kim, Uy Dong Sohn, Gilwon Yoon, Sanghoon Shin, Kwang-Sup Soh

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

60 Hz electromagnetic fields potentiate superoxide dismutase release by polymorphonuclear leukocytes in response to phorbol 12-myristate 13-acetate.

Pubmed Data : Biochim Biophys Acta. 1999 Oct 18 ;1472(1-2):359-67. PMID: **10572957**

Article Published Date : Oct 18, 1999

Authors : R Khadir, J L Morgan, J J Murray

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

60 Hz sinusoidal magnetic field induces single and double-strand DNA breaks through the involvement of free radicals.

Pubmed Data : Environ Health Perspect. 2004 May ;112(6):687-94. PMID: **15121512**

Article Published Date : May 01, 2004

Authors : Henry Lai, Narendra P Singh

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

9.17 GHz electromagnetic fields increase intracellular free radical production by Saccharomyces cerivisiae.

Pubmed Data : Pathol Biol (Paris). 2009 May ;57(3):245-51. Epub 2008 Mar 5. PMID: **18321660**

Article Published Date : May 01, 2009

Authors : D Crouzier, A Perrin, G Torres, V Dabouis, J-C Debouzy

Study Type : Bacterial
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Saccharomyces Cerevisiae : CK(6) : AC(6)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

900 MHz electromagnetic field exposure exacerbates the neurotoxic effect of hydrogen peroxide in rat primary cortical neurons.

Pubmed Data : Bioelectromagnetics. 2009 Oct ;30(7):564-72. PMID: 19479910

Article Published Date : Oct 01, 2009

Authors : Giovanna Del Vecchio, Alessandro Giuliani, Mercedes Fernandez, Pietro Mesirca, Ferdinando Bersani, Rosanna Pinto, Lucia Ardoino, Giorgio A Lovisolo, Luciana Giardino, Laura Calzà

Study Type : In Vitro Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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900 MHz pulse-modulated radiofrequency radiation induces oxidative stress in rat heart, lung, testis and liver tissues via lipid peroxidation, increased nitric oxide synthase, and antioxidant defense downregulation.

Pubmed Data : Gen Physiol Biophys. 2011 Mar ;30(1):84-9. PMID: 21460416

Article Published Date : Mar 01, 2011

Authors : Meric A Esmekaya, Cigdem Ozer, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

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900 MHz radiation induces oxidative stress in duckweed.

Pubmed Data : Sci Total Environ. 2007 Dec 15 ;388(1-3):78-89. Epub 2007 Sep 7. PMID: 17825879

Article Published Date : Dec 15, 2007

Authors : Mirta Tkalec, Kresimir Malarić, Branka Pevalek-Kozlina

Study Type : Plant Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

A Traditional Chinese Medicine herbal formulation, Liu Wei Di Huang Wan, improves cell phone radiation-induced oxidative damage and cell apoptosis in rat testes.

Pubmed Data : Zhonghua Nan Ke Xue. 2015 Aug ;21(8):737-41. PMID: 26442304

Article Published Date : Aug 01, 2015

Authors : Hui-rong Ma, Xiao-hui Cao, Xue-lian Ma, Jin-jin Chen, Jing-wei Chen, Hui Yang, Yun-xiao Liu

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Testicular Diseases : CK(46) : AC(19)
Additional Keywords : Testicular Diseases : CK(46) : AC(19) , Chinese Herbs : CK(6) : AC(2) , Chinese Traditional Medicine : CK(1) : AC(1), Phytotherapy : CK(2309) : AC(597) , Traditional Chinese Medicine : CK(22) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Acute 60 Hz electromagnetic field exposure decreases superoxide dismutase and reduced glutathione activity in rats.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1088-94. Epub 2010 Aug 11. PMID: 20701462

Article Published Date : Dec 01, 2010

Authors : Jesús Martínez-Sámano, Patricia V Torres-Durán, Marco A Juárez-Oropeza, David Elías-Viñas, Leticia Verdugo-Díaz

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Acute doses of electromagnetic radiation produced by mobile phones on the rat's antioxidant status is significantly higher than those of fractionated doses of the same type of radiation.

Pubmed Data : Pak J Biol Sci. 2007 Dec 1 ;10(23):4271-4. PMID: 19086584

Article Published Date : Dec 01, 2007

Authors : M A Elhag, Ghada M Nabil, Atef M M Attia

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Acute exposure to static magnetic fields induces oxidative stress while simultaneously upregulating the efficiency of antioxidant enzymes.

Pubmed Data : Int J Occup Med Environ Health. 2010 ;23(4):377-84. PMID: 21306983##

Article Published Date : Jan 01, 2010

Authors : Piotr Politański, Elżbieta Rajkowska, Małgorzata Pawlaczyk-Łuszczyńska, Adam Dudarewicz, Aneta Wiktorek-Smagur, Mariola Sliwińska-Kowalska, Marek Zmyślony

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Altered mitochondrial membrane potential is associated with abnormal sperm parameters.

Pubmed Data : Fertil Steril. 2003 Sep ;80 Suppl 2:844-50. PMID: 14505763

Article Published Date : Sep 01, 2003

Authors : Xia Wang, Rakesh K Sharma, Akshay Gupta, Valal George, Anthony J Thomas, Tommaso Falcone, Ashok Agarwal

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Aluminum and ELF-MF may impact on learning memory and potentiate oxidative stress in mice.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):243-52. Epub 2013 Oct 26. PMID: 24158621

Article Published Date : Dec 01, 2013

Authors : Yuanxin Deng, Yanwen Zhang, Shujie Jia, Junkang Liu, Yanxia Liu, Weiwei Xu, Lei Liu

Study Type : Animal Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Aluminum : CK(533) : AC(185)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Animals exposed to 1.8 GHz radiofrequency field exhibit decreases in glutathione peroxidase, superoxide dismutase, and melatonin.

Pubmed Data : Int J Environ Res Public Health. 2015 Feb 12 ;12(2):2071-87. Epub 2015 Feb 12. PMID: 25685954

Article Published Date : Feb 12, 2015

Authors : Honglong Cao, Fenju Qin, Xueguan Liu, Jiajun Wang, Yi Cao, Jian Tong, Heming Zhao

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Oxidant : CK(122) : AC(48)

Both extremely low-frequency electromagnetic fields and radiofrequency electromagnetic fields induce DNA damage in vitro, but in different ways.

Pubmed Data : Radiat Res. 2015 Mar ;183(3):305-14. Epub 2015 Feb 17. PMID: 25688995

Article Published Date : Mar 01, 2015

Authors : Weixia Duan, Chuan Liu, Lei Zhang, Mindi He, Shangcheng Xu, Chunhai Chen, Huifeng Pi, Peng Gao, Yanwen Zhang, Min Zhong, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Cell-specific redox may explain the differential effects of electromagnetic fields.

Pubmed Data : Curr Med Chem. 2007 ;14(10):1141-52. PMID: 17456027

Article Published Date : Jan 01, 2007

Authors : Myrtill Simkó

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

Cordyceps supplementation prevents adverse effects of electromagnetic pulse irradiation on sperm quality.

Pubmed Data : OMICS. 2017 02 ;21(2):81-89. PMID: 28186865

Article Published Date : Jan 01, 2017

Authors : Xia Miao, Yafeng Wang, Haiyang Lang, Yanyun Lin, Qiyan Guo, Mingjuan Yang, Juan Guo, Yanjun Zhang, Jie Zhang, Junye Liu, Yaning Liu, Lihua Zeng, Guozhen Guo

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932), Antioxidant : CK(9) : AC(4) , Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

ELF-EMF amplifies inflammatory responses through enhanced macrophage activation and can decrease the effectiveness of antioxidants.

Pubmed Data : Bioelectromagnetics. 2017 Jul ;38(5):374-385. Epub 2017 Mar 29. PMID: 28370033

Article Published Date : Jun 30, 2017

Authors : Soo Jeong Kim, Ye Won Jang, Kyung Eun Hyung, Da Kyoung Lee, Kee Hyeob Hyun, Seung Hwarn Jeong, Kyung Hoon Min, Wonku Kang, Ji Hoon Jeong, So-Young Park, Kwang Woo Hwang

Study Type : In Vitro Study
Additional Links
Diseases : Inflammation : CK(6531) : AC(1986) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

ELF-MF applied for 30 min/day for 10 days can affect free radical generation in the brain.

Pubmed Data : J Physiol Pharmacol. 2011 Dec ;62(6):657-61. PMID: 22314568

Article Published Date : Dec 01, 2011

Authors : Elzbieta Ciejka, P Kleniewska, B Skibska, A Goraca

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

ELF-MFs alter the expression of the α-synuclein, which is specifically stimulated upon ELF-MFs exposure via both direct miR-34 targeting and oxidative stress.

Pubmed Data : Mol Neurobiol. 2018 Jul ;55(7):5698-5714. Epub 2017 Oct 16. PMID: 29039021

Article Published Date : Jul 01, 2018

Authors : Claudia Consales, Claudia Cirotti, Giuseppe Filomeni, Martina Panatta, Alessio Butera, Caterina Merla, Vanni Lopresto, Rosanna Pinto, Carmela Marino, Barbara Benassi

Study Type : In Vitro Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

ELF-MFs may evoke the changesin the levels of biogenic amines, amino acids, and nitric oxide in the rat brain.

Pubmed Data : Korean J Physiol Pharmacol. 2015 Jan ;19(1):15-20. Epub 2014 Dec 31. PMID: 25605992

Article Published Date : Jan 01, 2015

Authors : Yoon Hee Chung, Young Joo Lee, Ho Sung Lee, Su Jin Chung, Cheol Hee Lim, Keon Woong Oh, Uy Dong Sohn, Eon Sub Park, Ji Hoon Jeong

Study Type : Animal Study

Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Effects of electromagnetic fields exposure on the antioxidant defense system.

Pubmed Data : J Microsc Ultrastruct. 2017 Oct-Dec;5(4):167-176. Epub 2017 Aug 2. PMID: 30023251

Article Published Date : Sep 30, 2017

Authors : Elfide Gizem Kıvrak, Kıymet Kübra Yurt, Arife Ahsen Kaplan, Işınsu Alkan, Gamze Altun

Study Type : Review
Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic field exposure increases oxidative stress and lipid peroxidation in the American cockroach.

Pubmed Data : J Comp Physiol A Neuroethol Sens Neural Behav Physiol. 2018 06 ;204(6):605-611. Epub 2018 May 2. PMID: 29721708

Article Published Date : Jan 01, 2018

Authors : Justyna Maliszewska, Patrycja Marciniak, Hanna Kletkiewicz, Joanna Wyszkowska, Anna Nowakowska, Justyna Rogalska

Study Type : Insect Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Electromagnetic field exposure induces oxidative stress in human cells but is overcome by stable antioxidant enzyme function.

Pubmed Data : Photochem Photobiol Sci. 2014 Jul ;13(7):1082-92. Epub 2014 Jun 2. PMID: 24886806

Article Published Date : Jul 01, 2014

Authors : Yahya Sefidbakht, Ali Akbar Moosavi-Movahedi, Saman Hosseinkhani, Fariba

Khodagholi, Masoud Torkzadeh-Mahani, Forough Foolad, Reza Faraji-Dana

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields are a mild stressor that alter oxidative stress balance in the brain of rats.

Pubmed Data : Arch Med Res. 2012 Apr ;43(3):183-9. Epub 2012 May 3. PMID: 22560984

Article Published Date : Apr 01, 2012

Authors : Jesús Martínez-Sámano, Patricia V Torres-Durán, Marco Antonio Juárez-Oropeza, Leticia Verdugo-Díaz

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields directly activate macrophages, stimulating elevated levels of free radical production. This may lead to downstream carcinogenic, genotoxic, and melatonin-depleting effects.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):83-92. PMID: 15352165

Article Published Date : Sep 01, 2004

Authors : Myrtill Simkó, Mats-Olof Mattsson

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogen : CK(61) : AC(12) , Genotoxic : CK(201) : AC(78) , Immunotoxic : CK(338) : AC(66) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Electromagnetic fields emitted from mobile phones induce oxidative damage in guinea pig brains.

Pubmed Data : Brain Res. 2007 Sep 12 ;1169:120-4. Epub 2007 Jul 17. PMID: 17674954

Article Published Date : Sep 12, 2007

Authors : Ismail Meral, Handan Mert, Nihat Mert, Yeter Deger, Ibrahim Yoruk, Ayşen Yetkin, Siddik Keskin

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields induce oxidative stress in Sitobion avenae, with potential effects that extend to future generations.

Pubmed Data : Bioelectromagnetics. 2019 Jan ;40(1):52-61. Epub 2018 Nov 22. PMID: 30466197

Article Published Date : Jan 01, 2019

Authors : Kun Luo, Chen Luo, Guangyu Li, Xinjian Yao, Rui Gao, Zuqing Hu, Gaisheng Zhang, Huiyan Zhao

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Electromagnetic fields induce oxidative stress in aquatic organisms, suggesting a possible negative effect of transmission lines.

Pubmed Data : Int J Radiat Biol. 2017 08 ;93(8):818-830. Epub 2017 May 25. PMID: 28452248

Article Published Date : Jan 01, 2017

Authors : Marko Miliša, Domagoj Đikić, Tvrtko Mandić, Dino Grozić, Ivan Čolić, Ana Ostojić

Study Type : Animal Study, Environmental
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields induce oxidative stress in the brain of rats, leading to aberrant neuronal functions.

Pubmed Data : Gen Physiol Biophys. 2014 ;33(1):81-90. Epub 2013 Dec 13. PMID: 24334533

Article Published Date : Jan 01, 2014

Authors : Pavan K Manikonda, Pilankatta Rajendra, D Devendranath, B Gunasekaran, Channakeshava, Shivakumara R S Aradhya, Rao B Sashidhar, Chivukula Subramanyam

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Electromagnetic fields may induce oxidative stress in human neuronal cells.

Pubmed Data : PLoS One. 2014 ;9(8):e104973. Epub 2014 Aug 15. PMID: 25127118

Article Published Date : Jan 01, 2014

Authors : Marcella Reale, Mohammad A Kamal, Antonia Patruno, Erica Costantini, Chiara D'Angelo, Miko Pesce, Nigel H Greig

Study Type : Human In Vitro
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields may interact with cryptochrome to promote carcinogenesis.

Pubmed Data : Proc Biol Sci. 2018 05 30 ;285(1879). PMID: 29794049

Article Published Date : Jan 30, 2018

Authors : Jukka Juutilainen, Mikko Herrala, Jukka Luukkonen, Jonne Naarala, P J Hore

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Oxidant : CK(122) : AC(48)

Electromagnetic fields may interact with mammalian cryptochrome to alter redox balance in cells.

Pubmed Data : PLoS Biol. 2018 10 ;16(10):e3000018. Epub 2018 Oct 2. PMID: 30278038

Article Published Date : Jan 10, 2018

Authors : Lukas Landler, David A Keays

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Oxidant : CK(122) : AC(48)

Electromagnetic hypersensitive patients present with biomarkers for oxidative stress.

Pubmed Data : Int J Mol Med. 2018 Oct ;42(4):1885-1898. Epub 2018 Jul 12. PMID: 30015864

Article Published Date : Oct 01, 2018

Authors : Philippe Irigaray, Daniela Caccamo, Dominique Belpomme

Study Type : Human Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Electromagnetic pulse radiation induces oxidative stress and apoptosis, leading to brain damage in rats.

Pubmed Data : PLoS One. 2014 ;9(3):e91019. Epub 2014 Mar 10. PMID: 24614080

Article Published Date : Jan 01, 2014

Authors : Bin Deng, Hao Xu, Jin Zhang, Jin Wang, Li-Chun Han, Li-Ya Li, Guang-Li Wu, Yan-Ning Hou, Guo-Zhen Guo, Qiang Wang, Han-Fei Sang, Li-Xian Xu

Study Type : Animal Study
Additional Links
Diseases : Brain Damage : CK(93) : AC(44) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation exacerbates free radical production in iron-treated cells in vitro.

Pubmed Data : Bioelectromagnetics. 2004 Jul ;25(5):324-8. PMID: 15197754

Article Published Date : Jul 01, 2004

Authors : Marek Zmyślony, Piotr Politanski, Elzbieta Rajkowska, Wieslaw Szymczak, Jolanta Jajte

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic radiation from Wi-Fi or cell phones placed within 10cm of cell cultures results in increased oxidative stress and apoptosis.

Pubmed Data : Biochim Biophys Acta. 2015 Oct ;1848(10 Pt B):2756-65. Epub 2015 Feb 19. PMID: 25703814

Article Published Date : Oct 01, 2015

Authors : Bilal Çiğ, Mustafa Nazıroğlu

Study Type : Human In Vitro
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation induces oxidative stress and DNA damage in the earthworm.

Pubmed Data : Ecotoxicol Environ Saf. 2013 Apr ;90:7-12. Epub 2013 Jan 24. PMID: 23352129

Article Published Date : Apr 01, 2013

Authors : Mirta Tkalec, Anamaria Stambuk, Maja Srut, Krešimir Malarić, Göran I V Klobučar

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation induces structural changes in the brains of rats and impacts redox and inflammatory systems.

Pubmed Data : Turk Neurosurg. 2013 ;23(6):707-15. PMID: **24310452**

Article Published Date : Jan 01, 2013

Authors : Olcay Eser, Ahmet Songur, Cevat Aktas, Ergun Karavelioglu, Veli Caglar, Firdevs Aylak, Fehmi Ozguner, Mehmet Kanter

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Interleukin-1 beta downregulation : CK(1743) : AC(868)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Inflammatory : CK(312) : AC(92), Oxidant : CK(122) : AC(48)

Electronic equipment repairers, exposed to ELF-EMF, are at a risk of oxidative stress and sleep insufficiency, which could be explained by lower plasma melatonin levels and higher MDA levels.

Pubmed Data : Indian J Occup Environ Med. 2010 Sep ;14(3):66-70. PMID: **21461157**

Article Published Date : Sep 01, 2010

Authors : Mohamed El-Helaly, E Abu-Hashem

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Exposure of quail embryos to 900 MHz results in an overproduction of free radicals and DNA damage.

Pubmed Data : Exp Oncol. 2013 Sep ;35(3):219-25. PMID: 24084462

Article Published Date : Sep 01, 2013

Authors : A Burlaka, O Tsybulin, E Sidorik, S Lukin, V Polishuk, S Tsehmistrenko, I Yakymenko

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

Exposure to 2400 MHz induces oxidative stress in the brains and ovaries of female rats. Exposure, especially in the prenatal period, results in delayed puberty and postnatal growth restriction.

Pubmed Data : Electromagn Biol Med. 2015 Mar ;34(1):63-71. Epub 2014 Jan 24. PMID: 24460416

Article Published Date : Mar 01, 2015

Authors : Ozlem Sangun, Bumin Dundar, Hakan Darici, Selcuk Comlekci, Duygu Kumbul Doguc, Suheyla Celik

Study Type : Animal Study
Additional Links
Diseases : , Oxidative Stress : CK(6519) : AC(2436) , Puberty: Delayed : CK(2) : AC(1)
Additional Keywords : Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1), Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1), Puberty: Delayed : CK(2) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to ELF-MFs may act as a risk factor for the occurrence of oxidative stress-based nervous system pathologies associated with ageing.

Pubmed Data : Int J Biochem Cell Biol. 2008 ;40(12):2762-70. Epub 2008 Jun 10. PMID: 18585472

Article Published Date : Jan 01, 2008

Authors : Stefano Falone, Alessandro Mirabilio, Maria Cristina Carbone, Vincenzo Zimmitti, Silvia

Di Loreto, Maria Addolorata Mariggiò, Rosa Mancinelli, Carmine Di Ilio, Fernanda Amicarelli

Study Type : Animal Study
Additional Links
Diseases : Aging : CK(2716) : AC(676) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to an 1800 MHz electromagnetic field slightly increases malondialdehyde levels in the kidney, brain, and liver in healthy and inflamed rats.

Pubmed Data : Int J Occup Med Environ Health. 2015 ;28(4):751-9. PMID: 26216313

Article Published Date : Jan 01, 2015

Authors : Paweł Bodera, Wanda Stankiewicz, Bożena Antkowiak, Małgorzata Paluch, Jarosław Kieliszek, Jaromir Sobiech, Marcin Niemcewicz

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Exposure to electromagnetic fields far below current exposure limits results in increased biomarkers oxidative stress in rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(3):177-88. PMID: 16954120

Article Published Date : Jan 01, 2006

Authors : Ali Ihsan Yurekli, Mehmed Ozkan, Tunaya Kalkan, Hale Saybasili, Handan Tuncel, Pinar Atukeren, Koray Gumustas, Selim Seker

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Exposure to extremely low electromagnetic fields induces oxidative stress in the rat ovary and uterus.

Pubmed Data : Electromagn Biol Med. 2016 ;35(3):245-59. Epub 2016 Apr 12. PMID: 27070942

Article Published Date : Jan 01, 2016

Authors : Deniz Akpınar, Deniz Kantar Gok, Enis Hidisoglu, Mutay Aslan, Sukru Ozen, Aysel Agar, Piraye Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to low magnetic field at 40 Hz, 7 mT for 30 min/day and 60 min/day for 2 weeks significantly increased the total glutathione levels in the skeletal muscle compared to controls.

Pubmed Data : Med Pr. 2014 ;65(3):343-9. PMID: 25230563

Article Published Date : Jan 01, 2014

Authors : Elzbieta Ciejka, Ewa Jakubowska, Paulina Zelechowska, Halina Huk-Kolega, Agata Kowalczyk, Anna Goraca

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to static magnetic field causes accumulation of reactive oxygen species in Vicia faba L. and natural radioactivity of soil exaggerates oxidative stress.

Pubmed Data : Mutat Res. 2012 Jan 24 ;741(1-2):116-21. Epub 2011 Nov 16. PMID: 22108253

Article Published Date : Jan 24, 2012

Authors : Fatemeh Javani Jouni, Parviz Abdolmaleki, Faezeh Ghanati

Study Type : Plant Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to static magnetic fields induced hepatocyte apoptosis through a caspase-independent pathway involving mitochondrial apoptosis-inducing factor but not in the brain.

Pubmed Data : Environ Sci Pollut Res Int. 2015 Oct ;22(20):16060-6. Epub 2015 Jun 12. PMID: 26062464

Article Published Date : Oct 01, 2015

Authors : Soumaya Ghodbane, Mohamed Ammari, Aida Lahbib, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Exposure to static magnetic fields induced oxidative stress in rat kidneys that can be prevented by treatment with selenium or vitamin E.

Pubmed Data : Gen Physiol Biophys. 2015 Jan ;34(1):23-32. Epub 2014 Nov 14. PMID: 25395602

Article Published Date : Jan 01, 2015

Authors : Soumaya Ghodbane, Aida Lahbib, Mohamed Ammari, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188) , Vitamin E : CK(2077) : AC(371)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Nephrotoxic : CK(179) : AC(43) , Oxidant : CK(122) : AC(48)

Exposures to extremely low frequency magnetic field induces serious oxidative stress in the hippocampus and

striatum and impaired hippocampal-dependent spatial learning and striatum-dependent habit learning in rats.

Pubmed Data : PLoS One. 2012 ;7(5):e32196. Epub 2012 May 3. PMID: 22570685

Article Published Date : Jan 01, 2012

Authors : Yonghua Cui, Zhiqiang Ge, Joshua Dominic Rizak, Chao Zhai, Zhu Zhou, Songjie Gong, Yi Che

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Extremely low electromagnetic fields potentiate hydrogen peroxide-induced cell death.

Pubmed Data : Int J Radiat Biol. 2004 Apr ;80(4):317-24. PMID: 15204708

Article Published Date : Apr 01, 2004

Authors : G-R Ding, T Nakahara, H Hirose, S Koyama, Y Takashima, J Miyakoshi

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Extremely low frequency electromagnetic field induces anxiety-like behavior which is mediated by oxidative stress.

Pubmed Data : Environ Sci Pollut Res Int. 2017 Sep ;24(27):21693-21699. Epub 2017 Jul 29. PMID: 28756602

Article Published Date : Sep 01, 2017

Authors : Natasa Z Djordjevic, Milica G Paunović, Aleksandar S Peulić

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Anxiogenic : CK(6) : AC(3) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields increase oxidative stress and induces apoptosis. Incubation with N-acetylcysteine and glutathione reduces oxidative damage and prevents cell death.

Pubmed Data : Mol Neurobiol. 2016 08 ;53(6):4247-4260. Epub 2015 Jul 30. PMID: 26223801

Article Published Date : Jan 01, 2016

Authors : Barbara Benassi, Giuseppe Filomeni, Costanza Montagna, Caterina Merla, Vanni Lopresto, Rosanna Pinto, Carmela Marino, Claudia Consales

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields induce lipid peroxidation in the brain and retina of rats.

Pubmed Data : Electromagn Biol Med. 2012 Dec ;31(4):436-48. Epub 2012 Oct 9. PMID: 23045992

Article Published Date : Dec 01, 2012

Authors : Deniz Akpinar, Nihal Ozturk, Sukru Ozen, Aysel Agar, Piraye Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields induce reactive oxygen species generation by a different pathway than traditional oxidants.

Pubmed Data : Toxicol Lett. 2010 Feb 15 ;192(3):330-6. Epub 2009 Nov 12. PMID: 19913603

Article Published Date : Feb 15, 2010

Authors : Jana Frahm, Mats-Olof Mattsson, Myrtill Simkó

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Heat Shock Protein Inducer : CK(83) : AC(30)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields may alter the redox status of muscle cells.

Pubmed Data : Free Radic Biol Med. 2010 Feb 15 ;48(4):579-89. Epub 2009 Dec 11. PMID: 20005945

Article Published Date : Feb 15, 2010

Authors : Caterina Morabito, Francesca Rovetta, Mariano Bizzarri, Giovanna Mazzoleni, Giorgio Fanò, Maria A Mariggiò

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields may induce anxiety-like behavior and oxidative stress.

Pubmed Data : Behav Brain Res. 2019 02 1 ;359:630-638. Epub 2018 Oct 2. PMID: 30290199

Article Published Date : Jan 01, 2019

Authors : Seyed Asaad Karimi, Iraj Salehi, Teimor Shykhi, Samad Zare, Alireza Komaki

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Anxiogenic : CK(6) : AC(3) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields may promote more aggressive behavior in neuroblastoma cells.

Pubmed Data : Sci Rep. 2017 09 13 ;7(1):11470. Epub 2017 Sep 13. PMID: 28904402

Article Published Date : Jan 13, 2017

Authors : S Falone, S Santini, V Cordone, P Cesare, A Bonfigli, M Grannonico, G Di Emidio, C Tatone, M Cacchio, F Amicarelli

Study Type : Human In Vitro
Additional Links
Diseases : Neuroblastoma : CK(86) : AC(53) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)

Extremely low frequency magnetic field induces lipid peroxidation and reactive oxygen species in mouse cerebellum.

Pubmed Data : Gen Physiol Biophys. 2011 Dec ;30(4):415-21. PMID: 22131325

Article Published Date : Dec 01, 2011

Authors : Li Y Chu, Jong H Lee, Yun S Nam, Yu J Lee, Won-Hee Park, Byung-Cheon Lee, Daejin Kim, Yoon H Chung, Ji H Jeong

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low-frequency electromagnetic fields induce oxidative stress in liver rat tissue.

Pubmed Data : Cell Biochem Biophys. 2011 Mar ;59(2):71-7. PMID: 20824388

Article Published Date : Mar 01, 2011

Authors : Mustafa Emre, Salih Cetiner, Sevil Zencir, Isa Unlukurt, Ibrahim Kahraman, Zeki Topcu

Study Type : In Vitro Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Oxidant : CK(122) : AC(48)

Extremely low-frequency magnetic field exposure induces oxidative stress in the rat brain.

Pubmed Data : Biol Trace Elem Res. 2010 Dec ;138(1-3):238-49. Epub 2010 Feb 23. PMID: 20177816

Article Published Date : Dec 01, 2010

Authors : Mehmet Zulkuf Akdag, Suleyman Dasdag, Engin Ulukaya, Ali Kemal Uzunlar, Mustafa Ayberk Kurt, Abdullah Taşkin

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Findings from this study indicate the possible role of increased oxidative stress in the pathophysiology of adverse effects of electromagnetic radiation.

Pubmed Data : Cell Biochem Funct. 2002 Dec ;20(4):279-83. PMID: 12415560

Article Published Date : Dec 01, 2002

Authors : M Kemal Irmak, Ersin Fadillioğlu, Mukaddes Güleç, Hasan Erdoğan, Murat Yağmurca, Omer Akyol

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Free radical concentration increase within the cell caused by radiofrequency/microwave radiation seems to be a biologically relevant hypothesis to give clear insight into the RF/MW action at non-thermal level of radiation.

Pubmed Data : Arh Hig Rada Toksikol. 2012 Sep ;63(3):407-16. PMID: 23152390

Article Published Date : Sep 01, 2012

Authors : Ana Marija Marjanović, Ivan Pavičić, Ivančica Trošić

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Gadolinium induces DNA damage which is enhanced by extremely low frequency electromagnetic fields.

Pubmed Data : Drug Chem Toxicol. 2014 Oct ;37(4):440-7. Epub 2014 Jan 30. PMID: 24479558

Article Published Date : Oct 01, 2014

Authors : Seunghyun Cho, Younghyun Lee, Sunyeong Lee, Young Joo Choi, Hai Won Chung

Study Type : Human In Vitro
Additional Links

Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Gadolinium : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Genetic polymorphisms affect superoxide dismutase activity may potentiate the negative effects of magnetic fields.

Pubmed Data : Environ Sci Pollut Res Int. 2017 Feb ;24(5):5078-5088. Epub 2016 Dec 21. PMID: 28004364

Article Published Date : Feb 01, 2017

Authors : Eduardo B Dornelles, Bayard D Goncalves, Karen Lilian Schott, Fernanda Barbisan, Tais C Unfer, Werner G Glanzner, Alencar K Machado, Francine C Cadona, Veronica Farina Azzolin, Marco Aurélio Echart Montano, John Griner, Ivana B M da Cruz

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Apoptotic : CK(5217) : AC(3846) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

High glucose induces beta cell oxidative stress, which may underpin the development of type 2 diabetes.

Pubmed Data : Microvasc Res. 2010 Dec ;80(3):332-8. Epub 2010 May 21. PMID: 20471990

Article Published Date : Dec 01, 2010

Authors : Francesca Felice, Daniela Lucchesi, Rossella di Stefano, Maria Chiara Barsotti, Eugenia Storti, Giuseppe Penno, Alberto Balbarini, Stefano Del Prato, Laura Pucci

Study Type : Review
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(6029) : AC(1167) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Higher levels of irreversible oxidative damage were observed in the major lymphoid organs of immature rats than in mature rats.

Pubmed Data : Arch Med Res. 2011 May ;42(4):261-7. PMID: 21820603

Article Published Date : May 01, 2011

Authors : Birsen Aydin, Aysegul Akar

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

In most studies, magnetic fields increase ROS in mammalian tissues.

Pubmed Data : Int J Mol Sci. 2017 Oct 18 ;18(10). Epub 2017 Oct 18. PMID: 29057846

Article Published Date : Oct 18, 2017

Authors : Huizhen Wang, Xin Zhang

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

L-carnitine and selenium seem to have protective effects on the 2.45 GHz-induced oxidative stress in the rat brain.

Pubmed Data : Int J Radiat Biol. 2009 Aug ;85(8):680-9. PMID: 19637079

Article Published Date : Aug 01, 2009

Authors : Mustafa Naziroğlu, Nurhan Gümral

Study Type : Animal Study
Additional Links
Substances : Carnitine : CK(441) : AC(70) , Selenium : CK(999) : AC(188)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Liver antioxidant stores protect the brain from oxidative damage as a result of exposure to 900 MHz and 1800 MHz electromagnetic fields.

Pubmed Data : J Matern Fetal Neonatal Med. 2014 Dec ;27(18):1915-21. Epub 2014 Apr 9. PMID: 24580725

Article Published Date : Dec 01, 2014

Authors : Hasan Çetin, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Nural Pastacı, Mehmet Okan Özkaya

Study Type : Animal Study
Additional Links
Substances : Glutathione : CK(63) : AC(17) , Selenium : CK(999) : AC(188) , Vitamin A : CK(678) : AC(102), Vitamin E : CK(2077) : AC(371)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Neuroprotective Agents : CK(6374) : AC(2801)
Additional Keywords : Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Long-term ELF-MF exposure may enhance the oxidative/nitrosative stress in liver tissue of the female rats.

Pubmed Data : J Radiat Res. 2008 Mar ;49(2):181-7. PMID: **18367817**

Article Published Date : Mar 01, 2008

Authors : Nurten Erdal, Serkan Gürgül, Lülüfer Tamer, Lokman Ayaz

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Oxidant : CK(122) : AC(48)

Long-term EMF exposure may be linked to higher levels of oxidative stress.

Pubmed Data : Environ Res. 2001 Jun ;86(2):198-207. PMID: **11437466**

Article Published Date : Jun 01, 2001

Authors : K J Fernie, D M Bird

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Long-term exposure to an electromagnetic field affects bone and thyroid metabolism and also increases oxidative stress index by increasing the total oxidant status and decreasing the antioxidant status.

Pubmed Data : Onco Targets Ther. 2016 ;9:745-54. Epub 2016 Feb 12. PMID: 26929645

Article Published Date : Jan 01, 2016

Authors : Halil Kunt, İhsan Şentürk, Yücel Gönül, Mehmet Korkmaz, Ahmet Ahsen, Ömer Hazman, Ahmet Bal, Abdurrahman Genç, Ahmet Songur

Study Type : Human Study
Additional Links
Diseases : Bone Diseases : CK(18) : AC(6) , Hypothyroidism : CK(584) : AC(90) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21) , Oxidant : CK(122) : AC(48)

Long-term exposure to cell phone radiation increases apoptosis and oxidative stress while depleting antioxidant activity in the brains of young and adult rats.

Pubmed Data : Cell Biochem Biophys. 2014 Nov ;70(2):845-55. PMID: 24801773

Article Published Date : Nov 01, 2014

Authors : Tarek K Motawi, Hebatallah A Darwish, Yasser M Moustafa, Mohammed M Labib

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Long-term green tea polyphenol supplementation could be an efficient protection against the health issues

induced by high-voltage power lines.

Pubmed Data : Environ Toxicol Pharmacol. 2016 Sep ;46:183-7. Epub 2016 Jul 26. PMID: 27490209

Article Published Date : Aug 31, 2016

Authors : Yang Zhang, Dan Zhang, Baoyu Zhu, He Zhang, Ye Sun, Chengxun Sun

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(2720) : AC(822) , Polyphenols : CK(1353) : AC(489)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Risk Reduction : CK(11700) : AC(1273)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Lotus seed procyanidins prevent oxidative stress by extremely low frequency electromagnetic fields in mice.

Pubmed Data : Biomed Pharmacother. 2016 Aug ;82:640-8. Epub 2016 Jun 13. PMID: 27470407

Article Published Date : Aug 01, 2016

Authors : Xiaoping Luo, Meng Chen, Yuqing Duan, Wenyi Duan, Haihui Zhang, Yuanqing He, Chunchun Yin, Guibo Sun, Xiaobo Sun

Study Type : Animal Study
Additional Links
Substances : Lotus : CK(153) : AC(108), Proanthocyanidins : CK(24) : AC(12)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Chemoprotective Agents : CK(356) : AC(146), Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Lotus seedpod procyanidins mitigate the oxidative effects and learning and memory damage caused by extremely low frequency electromagnetic fields on

Pubmed Data : Food Funct. 2013 Aug ;4(8):1252-62. PMID: 23764910

Article Published Date : Aug 01, 2013

Authors : Yuqing Duan, Zhigao Wang, Haihui Zhang, Yuanqing He, Rongzhu Lu, Rui Zhang, Guibo Sun, Xiaobo Sun

Study Type : Animal Study
Additional Links
Substances : Lotus : CK(153) : AC(108)
Diseases : Learning disorders : CK(194) : AC(53) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)

Additional Keywords : Plant Extracts : CK(11762) : AC(4236) , Proanthocyanidins : CK(203) : AC(54)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Low magnetic field used in magnetotherapy causes the significant changes of the generating the reactive forms of oxygen in the muscles which depend on the parameters of low magnetic field.

Pubmed Data : Pol Merkur Lekarski. 2010 Dec ;29(174):361-4. PMID: 21298985

Article Published Date : Dec 01, 2010

Authors : Elzbieta Ciejka, Beata Skibska, Paulina Kleniewska, Anna Goraca

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Melatonin attentuates the spermatotoxic effects of radiofrequency radiation in mice.

Pubmed Data : Toxicol Ind Health. 2018 May ;34(5):315-327. Epub 2018 Mar 21. PMID: 29562845

Article Published Date : May 01, 2018

Authors : Neelam Pandey, Sarbani Giri

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Genoprotective : CK(413) : AC(148)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Melatonin can help protect against Wi-Fi-induced oxidative stress in the lens of rats.

Pubmed Data : Indian J Ophthalmol. 2014 Jan ;62(1):12-5. PMID: 24492496

Article Published Date : Dec 31, 2013

Authors : Levent Tök, Mustafa Nazıroğlu, Salih Doğan, Mehmet Cemal Kahya, Ozlem Tök

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Wi-Fi Radiation : CK(43) : AC(14)

Melatonin confers protective effects to rat neurons following 2.45 GHz electromagnetic radiation exposure.

Pubmed Data : Physiol Behav. 2012 Feb 1 ;105(3):683-92. Epub 2011 Oct 12. PMID: 22019785

Article Published Date : Feb 01, 2012

Authors : M Nazıroğlu, Ö Çelik, C Özgül, B Çiğ, S Doğan, R Bal, N Gümral, A B Rodríguez, J A Pariente

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Calcium Channel Blockers : CK(87) : AC(23)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)

Melatonin confers radioprotective effects against mobil phone-induced oxidative stress in the rat brain.

Pubmed Data : J Radiat Res. 2008 Nov ;49(6):579-86. Epub 2008 Sep 29. PMID: 18827438

Article Published Date : Nov 01, 2008

Authors : Dusan Sokolovic, Boris Djindjic, Jelenka Nikolic, Gordana Bjelakovic, Dusica Pavlovic, Gordana Kocic, Dejan Krstic, Tatjana Cvetkovic, Voja Pavlovic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Melatonin prevents liver injury by microwave radiation in rats.

Pubmed Data : Bratisl Lek Listy. 2015 ;116(2):96-100. PMID: 25665474

Article Published Date : Jan 01, 2015

Authors : B Djordjevic, D Sokolovic, G Kocic, A Veljkovic, M Despotovic, J Basic, T Jevtovic-Stoimenov, D M Sokolovic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Additional Keywords : Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Melatonin supplementation prevented oxidative damage induced by electromagnetic radiation in rat testis.

Pubmed Data : Andrologia. 2014 Feb ;46(1):65-72. Epub 2012 Nov 12. PMID: **23145464**

Article Published Date : Feb 01, 2014

Authors : T Oksay, M Naziroğlu, S Doğan, A Güzel, N Gümral, P A Koşar

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Mice exposed to intermediate-frequency magnetic fields exhibit alterations of memory function-related genes and an increase in inflammatory mediators and oxidative stress.

Pubmed Data : Int J Environ Res Public Health. 2015 Apr 22 ;12(4):4406-21. Epub 2015 Apr 22. PMID: **25913185**

Article Published Date : Apr 22, 2015

Authors : Tin-Tin Win-Shwe, Shin Ohtani, Akira Ushiyama, Naoki Kunugita

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Microwave exposure adversely affects male fertility, whereas pulsed electromagnetic field therapy is a non-invasive, simple technique that can be used as a scavenger agent to combat oxidative stress.

Pubmed Data : Clinics (Sao Paulo). 2011 ;66(7):1237-45. PMID: 21876981

Article Published Date : Jan 01, 2011

Authors : Sanjay Kumar, Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Microwave exposure could adversely affect male fertility through melatonin downregulation in the testis.

Pubmed Data : Electromagn Biol Med. 2012 Sep ;31(3):223-32. PMID: 22897403

Article Published Date : Sep 01, 2012

Authors : Sanjay Kumar, J Behari, Rashmi Sisodia

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Microwave radiation induces apoptosis in rat myocardial cells through redox and metabolic mechanisms.

Pubmed Data : Can J Physiol Pharmacol. 2016 Aug ;94(8):849-57. Epub 2016 Mar 6. PMID: 27203380

Article Published Date : Aug 01, 2016

Authors : Wenhe Zhu, Yan Cui, Xianmin Feng, Yan Li, Wei Zhang, Junjie Xu, Huiyan Wang, Shijie Lv

Study Type : In Vitro Study
Additional Links

Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Oxidant : CK(122) : AC(48)

Microwaves are cytotoxic and genotoxic to the rat thymus and its effects are attentuated by melatonin.

Pubmed Data : Gen Physiol Biophys. 2013 Mar ;32(1):79-90. PMID: 23531837

Article Published Date : Mar 01, 2013

Authors : Dusan Sokolovic, Branka Djordjevic, Gordana Kocic, Andrej Veljkovic, Milena Marinkovic, Jelena Basic, Tatjana Jevtovic-Stoimenov, Zoran Stanojkovic, Danka M Sokolovic, Voja Pavlovic, Boris Djindjic, Dejan Krstic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , DNA Repair Up-regulation : CK(67) : AC(16)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Mobile phone exposure induces oxidative stress in the brain, kidneys, and liver and also increases liver enzyme activity.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):279-84. Epub 2014 Apr 8. PMID: 24712749

Article Published Date : Jan 01, 2015

Authors : Merhan Mamdouh Ragy

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , GGT : CK(63) : AC(9) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Mobile phone radiation exposure increases oxidative stress as evidenced by increased protein carbonyl and malondialdehyde, coupled with impaired cognition.

Pubmed Data : Indian J Biochem Biophys. 2013 Apr ;50(2):114-9. PMID: 23720885

Article Published Date : Apr 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Basu Dev Banerjee, Mahesh Pandurang Abegaonkar, Kanu Megha, Rafat Sultana Ahmed, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Oxidant : CK(122) : AC(48)

Mobile phone radiation induces oxidative stress and apoptosis in the rat endometrium and is ameliorated by vitamin C and E.

Pubmed Data : Adv Ther. 2006 Nov-Dec;23(6):957-73. PMID: 17276964

Article Published Date : Nov 01, 2006

Authors : Baha Oral, Mehmet Guney, Fehmi Ozguner, Nermin Karahan, Tamer Mungan, Selcuk Comlekci, Gokhan Cesur

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792) , Vitamin E : CK(2077) : AC(371)
Diseases : Infertility: Female : CK(281) : AC(51) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932) , Antioxidant : CK(9) : AC(4) , Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Mobile phone radiation induces oxidative stress in rat spermatozoa.

Pubmed Data : Appl Biochem Biotechnol. 2011 Jun ;164(4):546-59. Epub 2011 Jan 15. PMID: 21240569

Article Published Date : Jun 01, 2011

Authors : Kavindra Kumar Kesari, Sanjay Kumar, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Superoxide Dismutase Downregulation : CK(12) : AC(2)

Mobile phone radiation overwhelms the antioxidant systems of mung bean root cells.

Pubmed Data : Sci Total Environ. 2009 Oct 15 ;407(21):5543-7. Epub 2009 Aug 13. PMID: 19682728

Article Published Date : Oct 15, 2009

Authors : Ved Parkash Sharma, Harminder Pal Singh, Ravinder Kumar Kohli, Daizy Rani Batish

Study Type : Plant Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Myrtus communis extract enhances the ability of erythrocytes and plasma to deal with oxidative conditions during exposure to ELFMF.

Pubmed Data : Int J Radiat Biol. 2018 Nov 29:1-22. Epub 2018 Nov 29. PMID: 30496018

Article Published Date : Nov 28, 2018

Authors : Fatemeh Seif, Mohamad Reza Bayatiani, Hadi Ansarihadipour, Ghasem Habibi, Samira Sadelaji

Study Type : Animal Study
Additional Links
Substances : Myrtle : CK(11) : AC(2)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Nanosecond pulsed electric field induces the formation of both intra- and extracellular hydrogen peroxide.

Pubmed Data : Arch Biochem Biophys. 2012 Nov 1 ;527(1):55-64. Epub 2012 Aug 15. PMID: 22910297

Article Published Date : Nov 01, 2012

Authors : Olga N Pakhomova, Vera A Khorokhorina, Angela M Bowman, Raminta Rodaitė-Riševičienė, Gintautas Saulis, Shu Xiao, Andrei G Pakhomov

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Olive leaf extract reduces oxidative stress and oxidative stress-related glucose metabolism disruption induced by 2.45 GHz Wi-Fi signals.

Pubmed Data : Environ Toxicol Pharmacol. 2013 Nov ;36(3):826-34. Epub 2013 Aug 3. PMID: 23994945

Article Published Date : Nov 01, 2013

Authors : Myriam Ben Salah, Hafedh Abdelmelek, Manef Abderraba

Study Type : Animal Study
Additional Links
Substances : Olive leaf extract : CK(189) : AC(85)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Glutathione Peroxidase 1 (GPx1) Up-Regulation : CK(3) : AC(2), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Superoxide Dismutase Up-regulation : CK(1039) : AC(415) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415), Superoxide Dismutase Up-regulation : CK(1039) : AC(415), Superoxide Dismutase Up-regulation : CK(1039) : AC(415) , Plant Extracts : CK(11762) : AC(4236), Plant Extracts : CK(11762) : AC(4236) , Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

One month of mobile phone radiation induces oxidative stress in the rat brain as demonstrated by elevated TBARS, reduced glutathione activity, and down-regulated

antioxidant activity overall.

Pubmed Data : Bratisl Lek Listy. 2014 ;115(5):260-6. PMID: 25174055

Article Published Date : Jan 01, 2014

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Oxidant : CK(122) : AC(48)

Oxidative stress and hydrogen peroxide work synergistically to stimulate apoptosis.

Pubmed Data : Acta Biol Hung. 2010 Jun ;61(2):158-67. PMID: 20519170

Article Published Date : Jun 01, 2010

Authors : Ayse Inhan Garip, Z Akan

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Plasma level of lipid peroxides was significantly increased after 1, 2 and 4 h of exposure to radiofrequency fields of the cellular phone in standby position in volunteers.

Pubmed Data : J Pharm Biomed Anal. 2001 Nov ;26(4):605-8. PMID: 11516912

Article Published Date : Nov 01, 2001

Authors : Y M Moustafa, R M Moustafa, A Belacy, S H Abou-El-Ela, F M Ali

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Prenatal cell phone radiation exposure leads to elevated thymus and spleen malondialdehyde levels in 21-day-old male rats.

Pubmed Data : Biotech Histochem. 2015 ;90(7):535-43. Epub 2015 May 19. PMID: 25985826

Article Published Date : Jan 01, 2015

Authors : H Hancı, S Türedi, Z Topal, T Mercantepe, I Bozkurt, H Kaya, Ş Ersöz, B Ünal, E Odacı

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

RF-EMF may induce oxidative stress with an increased level of reactive oxygen species, which may lead to infertility.

Pubmed Data : Reprod Biol Endocrinol. 2018 Dec 9 ;16(1):118. Epub 2018 Dec 9. PMID: 30445985

Article Published Date : Dec 08, 2018

Authors : Kavindra Kumar Kesari, Ashok Agarwal, Ralf Henkel

Study Type : Review
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

Radiofrequency and extremely low frequency electromagnetic fields increase oxidative stress in rat testis tissue and causes a decrease in antioxidant level with the effects being more distinctive in diabetic rats.

Pubmed Data : Bratisl Lek Listy. 2017 ;118(5):278-282. PMID: 28516790

Article Published Date : Jan 01, 2017

Authors : D Kuzay, C Ozer, B Sirav, A G Canseven, N Seyhan

Study Type : Animal Study

Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Radiofrequency electromagnetic radiation induces apoptosis and oxidative stress in Zebrafish embryo by a non-thermal mechanism

Pubmed Data : Ecotoxicol Environ Saf. 2018 Jun 15 ;154:268-279. Epub 2018 Feb 22. PMID: 29477917

Article Published Date : Jun 15, 2018

Authors : Chiara Carla Piccinetti, Alfredo De Leo, Gloria Cosoli, Lorenzo Scalise, Basilio Randazzo, Graziano Cerri, Ike Olivotto

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Rats born to mothers exposed to Wi-Fi and cell phone electromagnetic fields exhibit elevated oxidative stress in kidneys and testes and may cause precocious puberty.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):221-9. Epub 2013 Oct 8. PMID: 24101576

Article Published Date : Dec 01, 2013

Authors : Alper Özorak, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Derviş Özçelik, Mehmet Okan Özkaya, Hasan Çetin, Mehmet Cemal Kahya, Seyit Ali Kose

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436), Puberty: Precocious : CK(2) : AC(2)
Additional Keywords : Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats exposed to 900, 1800, and 2450 MHz electromagnetic fields exhibit DNA damage in brain tissue.

Pubmed Data : Toxicol Int. 2013 Jan ;20(1):19-24. PMID: 23833433

Article Published Date : Jan 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Sudhir Chandna, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Rats exposed to mobile phone radiation in utero exhibit pathological changes in kidney tissue attributed to oxidative stress and decreased antioxidant activity.

Pubmed Data : Biotech Histochem. 2015 Feb ;90(2):93-101. Epub 2014 Aug 27. PMID: 25158858

Article Published Date : Feb 01, 2015

Authors : E Odacı, D Ünal, T Mercantepe, Z Topal, H Hancı, S Türedi, H S Erol, S Mungan, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats exposed to mobile phone radiation in utero have elevated biomarkers of oxidative stress and histopathological changes in heart tissue.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):390-7. Epub 2014 Aug 28. PMID: **25166431**

Article Published Date : Jan 01, 2015

Authors : Sibel Türedi, Hatice Hancı, Zehra Topal, Deniz Ünal, Tolga Mercantepe, İlyas Bozkurt, Haydar Kaya, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Rats exposed to mobile phone radiation present with higher oxidative stress, reduced antioxidant activity, and extensive neurodegeneration in the brain.

Pubmed Data : Neurol Res. 2014 Dec ;36(12):1072-9. Epub 2014 May 26. PMID: **24861496**

Article Published Date : Dec 01, 2014

Authors : Nidhi Saikhedkar, Maheep Bhatnagar, Ayushi Jain, Pooja Sukhwal, Chhavi Sharma, Neha Jaiswal

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Brain: Oxidative Stress : CK(79) : AC(46) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Reduced glutathione could play an important role in the antioxidant defense towards the ELF-MF-induced redox challenge.

Pubmed Data : J Cell Physiol. 2009 May ;219(2):334-43. PMID: 19115234

Article Published Date : May 01, 2009

Authors : Silvia Di Loreto, Stefano Falone, Valentina Caracciolo, Pierluigi Sebastiani, Antonella D'Alessandro, Alessandro Mirabilio, Vincenzo Zimmitti, Fernanda Amicarelli

Study Type : Animal Study
Additional Links
Substances : Glutathione : CK(63) : AC(17)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Resveratrol may reverse the effects of long-term occupational exposure to electromagnetic fields on workers of a power plant.

Pubmed Data : Oncotarget. 2017 Jul 18 ;8(29):47497-47506. PMID: 28537898

Article Published Date : Jul 17, 2017

Authors : Dan Zhang, Yang Zhang, Baoyu Zhu, He Zhang, Ye Sun, Chengxun Sun

Study Type : Human Study
Additional Links
Substances : Resveratrol : CK(1649) : AC(947)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Inflammatory Agents : CK(12461) : AC(4729) , Antioxidants : CK(14410) : AC(5758), Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Rosmarinic acid as food additive can be effective for supporting people living under EMF environmental pollution.

Pubmed Data : Afr J Tradit Complement Altern Med. 2013 ;10(6):477-80. Epub 2013 Oct 3. PMID: 24311872

Article Published Date : Dec 31, 2012

Authors : Laleh Hajhosseini, Arash Khaki, Ehsan Merat, Nava Ainehchi

Study Type : Animal Study
Additional Links
Substances : Rosemaric Acid : CK(12) : AC(8)

Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932), Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Selenium and L-carnitine protect against the oxidative effects of 2.45 GHz wireless devices in the rat heart.

Pubmed Data : Biol Trace Elem Res. 2011 Dec ;143(3):1640-50. Epub 2011 Mar 1. PMID: 21360060

Article Published Date : Dec 01, 2011

Authors : Yasin Türker, Mustafa Nazıroğlu, Nurhan Gümral, Omer Celik, Mustafa Saygın, Selçuk Cömlekçi, Manuel Flores-Arce

Study Type : Animal Study
Additional Links
Substances : Carnitine : CK(441) : AC(70), Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4), Cardioprotective : CK(3412) : AC(1032), Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Selenium prevents oxidative stress and apoptosis associated with mobile phone exposure.

Pubmed Data : Biol Trace Elem Res. 2014 Aug ;160(2):285-93. Epub 2014 Jun 27. PMID: 24965080

Article Published Date : Aug 01, 2014

Authors : Mehmet Cemal Kahya, Mustafa Nazıroğlu, Bilal Çiğ

Study Type : Human In Vitro
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932), Antioxidant : CK(9) : AC(4), Cytoprotective : CK(190) : AC(94)
Additional Keywords : Cytoprotective : CK(190) : AC(94), Cytoprotective : CK(190) : AC(94), Cytoprotective : CK(190) : AC(94), Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Cytotoxic : CK(89) : AC(53), Oxidant : CK(122) : AC(48)

Static magnetic fields alter the redox balance of human

neutrophils in vitro.

Pubmed Data : Electromagn Biol Med. 2013 Dec ;32(4):560-8. Epub 2013 Apr 30. PMID: 23631724

Article Published Date : Dec 01, 2013

Authors : Barbara Poniedziałek, Piotr Rzymski, Jacek Karczewski, Feliks Jaroszyk, Krzysztof Wiktorowicz

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Static magnetic fields induce oxidative stress depending on the direction of the fields.

Pubmed Data : Biomed Res Int. 2017 ;2017:5675086. Epub 2017 Apr 12. PMID: 28497056

Article Published Date : Jan 01, 2017

Authors : Jonne Naarala, Kavindra Kumar Kesari, Ian McClure, Cristina Chavarriaga, Jukka Juutilainen, Carlos F Martino

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Sub-acute exposure to static magnetic fields alters the antioxidant response by decreasing the level of total selenium in kidney, muscle, and brain of exposed rats.

Pubmed Data : Environ Toxicol Pharmacol. 2011 Jan ;31(1):100-6. Epub 2010 Sep 29. PMID: 21787674

Article Published Date : Jan 01, 2011

Authors : Soumaya Ghodbane, Salem Amara, Catherine Garrel, Josiane Arnaud, Véronique Ducros, Alain Favier, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Sub-acute exposure to static magnetic fields induce oxidative stress in rats, which may be prevented by a pretreatment with selenium.

Pubmed Data : Toxicol Ind Health. 2011 Nov ;27(10):949-55. Epub 2011 Apr 19. PMID: 21505001

Article Published Date : Nov 01, 2011

Authors : Soumaya Ghodbane, Salem Amara, Josiane Arnaud, Catherine Garrel, Henri Faure, Alain Favier, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

The adverse effects of electromagnetic fields may be mediated by activation of voltage-gated calcium channels.

Pubmed Data : J Cell Mol Med. 2013 Aug ;17(8):958-65. Epub 2013 Jun 26. PMID: 23802593

Article Published Date : Aug 01, 2013

Authors : Martin L Pall

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48) , Voltage-Gated Calcium Channel Activation : CK(1) : AC(1)

The combined exposure to pulsed magnetic field and oxidative stress lead to significant decrease of DNA methylation levels at different CpG sites.

Pubmed Data : Radiat Environ Biophys. 2017 05 ;56(2):193-200. Epub 2017 Mar 3. PMID:

28258386

Article Published Date : Jan 01, 2017

Authors : Gianfranco Giorgi, Chiara Pirazzini, Maria Giulia Bacalini, Cristina Giuliani, Paolo Garagnani, Miriam Capri, Ferdinando Bersani, Brunella Del Re

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The effects of radiation from commercial GSM 900 MHz cell phone on developing quail embryos signify a possibility for non-thermal impact of microwave on embryogenesis.

Pubmed Data : Electromagn Biol Med. 2012 Mar ;31(1):75-86. Epub 2012 Jan 23. PMID: 22268787

Article Published Date : Mar 01, 2012

Authors : Olexandr Tsybulin, Evgeniy Sidorik, Sergiy Kyrylenko, Diane Henshel, Igor Yakymenko

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

The low frequency electromagnetic fields generated by car electronics, physiotherapy equipment and LCD monitors may be a cause of oxidative stress in the human body

Pubmed Data : Adv Clin Exp Med. 2015 Jan-Feb;24(1):31-5. PMID: 25923084

Article Published Date : Jan 01, 2015

Authors : Małgorzata Lewicka, Gabriela A Henrykowska, Krzysztof Pacholski, Artur Szczęsny, Maria Dziedziczak-Buczyńska, Andrzej Buczyński

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) ,

Oxidant : CK(122) : AC(48)

The results of this study concluded that the melatonin has strong antioxidative potential against microwave-induced oxidative stress-mediated DNA damage in testicular cells.

Pubmed Data : Electromagn Biol Med. 2014 Jun ;33(2):81-91. Epub 2013 May 15. PMID: 23676079

Article Published Date : Jun 01, 2014

Authors : Ramovatar Meena, Kajal Kumari, Jitendra Kumar, Paulraj Rajamani, H N Verma, Kavindra Kumar Kesari

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Malondialdehyde Down-regulation : CK(1452) : AC(466) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

The studies included in this review indicate that oxidative stress from exposure to Wi-Fi and mobile phone-induced EMR is a significant mechanism affecting female and male reproductive systems.

Pubmed Data : J Membr Biol. 2013 Dec ;246(12):869-75. Epub 2013 Oct 9. PMID: 24105626

Article Published Date : Dec 01, 2013

Authors : Mustafa Nazıroğlu, Murat Yüksel, Seyit Ali Köse, Mehmet Okan Özkaya

Study Type : Review
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

There is an apparent protective effect of melatonin on the Wi-Fi-induced oxidative stress in the laryngotracheal mucosa of rats by inhibition of free radical formation and

support of the glutathione peroxidase antioxidant system.

Pubmed Data : Eur Arch Otorhinolaryngol. 2013 May ;270(5):1695-700. Epub 2013 Mar 12. PMID: 23479077

Article Published Date : May 01, 2013

Authors : Giray Aynali, Mustafa Nazıroğlu, Ömer Çelik, Mustafa Doğan, Murat Yarıktaş, Hasan Yasan

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Additional Keywords : Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

These findings suggest occupational exposure to pulsed microwaves could cause genetic and cell alterations and that oxidative stress may be one of the possible mechanisms of DNA and cell damage.

Pubmed Data : Int J Hyg Environ Health. 2011 Jan ;214(1):59-65. Epub 2010 Sep 15. PMID: 20833106

Article Published Date : Jan 01, 2011

Authors : Vera Garaj-Vrhovac, Goran Gajski, Senijo Pažanin, Antonio Sarolić, Ana-Marija Domijan, Dubravka Flajs, Maja Peraica

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

These findings suggest that EMF exposure may be harmful in young adults by impairing the antioxidant defenses directed at preventing iron-induced oxidative stress.

Pubmed Data : Neuroscience. 2011 Jul 14 ;186:39-47. Epub 2011 Apr 12. PMID: **21497179**

Article Published Date : Jul 14, 2011

Authors : K Maaroufi, E Save, B Poucet, M Sakly, H Abdelmelek, L Had-Aissouni

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

These findings suggest that oxidative stress occurs in many organs during 35 GHz microwave heating.

Pubmed Data : Shock. 2000 Jan ;13(1):52-9. PMID: **10638670**

Article Published Date : Jan 01, 2000

Authors : J Kalns, K L Ryan, P A Mason, J G Bruno, R Gooden, J L Kiel

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)

These results suggest that direct chronic exposure to mobile phone caused severe biochemical and histopathological changes in the rat brain.

Pubmed Data : J Chem Neuroanat. 2016 12 ;78:10-19. Epub 2016 Jul 26. PMID: **27474378**

Article Published Date : Jan 12, 2016

Authors : Shaymaa Hussein, Abdel-Aleem El-Saba, Mona K Galal

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Cyclooxygenase 2 Inhibitors : CK(1114) : AC(645) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Inflammatory : CK(312) : AC(92) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Neurotoxic : CK(1458) : AC(323) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

This article reviews available research on the role of static magnetic fields in biology.

Pubmed Data : Front Biosci. 2008 May 1 ;13:6106-25. Epub 2008 May 1. PMID: 18508647

Article Published Date : May 01, 2008

Authors : Hideyuki Okano

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This paper reviews most recent evidence on the effects of microwave radiation on the brain.

Pubmed Data : Mil Med Res. 2017 09 21 ;4(1):29. Epub 2017 Sep 21. PMID: 29502514

Article Published Date : Jan 21, 2017

Authors : Wei-Jia Zhi, Li-Feng Wang, Xiang-Jun Hu

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review describes the hormetic effects attributed to electromagnetic fields.

Pubmed Data : Sci Total Environ. 2012 Jun 1 ;426:454-8. Epub 2012 Apr 24. PMID: 22534362

Article Published Date : Jun 01, 2012

Authors : Michael Repacholi

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

This review details the effects of magnetic fields on free radicals and cellular activity.

Pubmed Data : Electromagn Biol Med. 2017 ;36(1):102-113. Epub 2016 Jul 11. PMID: 27399314

Article Published Date : Jan 01, 2017

Authors : Ryan D Montoya

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review examines in vitro and in vivo and epidemiological works that gave a new insight about the effect of radio frequency exposure, relating to intracellular molecular pathways that lead to biological and functional outcomes.

Pubmed Data : Int J Mol Sci. 2014 Mar 27 ;15(4):5366-87. Epub 2014 Mar 27. PMID: 24681584

Article Published Date : Mar 27, 2014

Authors : Lisa Gherardini, Gastone Ciuti, Selene Tognarelli, Caterina Cinti

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review outlines some of the known biological effects of static magnetic fields.

Pubmed Data : Biomed Res Int. 2013 ;2013:602987. Epub 2013 Aug 6. PMID: 24027759

Article Published Date : Jan 01, 2013

Authors : Soumaya Ghodbane, Aida Lahbib, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

This study attempts to explain the mechanisms behind non-thermal damage induced by electromagnetic radiation and points out clear flaws in our current model of measuring damage associated with electromagnetic field exposure.

Pubmed Data : PLoS One. 2014 ;9(3):e93065. Epub 2014 Mar 28. PMID: 24681944

Article Published Date : Jan 01, 2014

Authors : Robert J Usselman, Iain Hill, David J Singel, Carlos F Martino

Study Type : In Vitro Study
Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1), Laptop Computer Use : CK(20) : AC(2), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study demonstrates that electromagnetic fields can have signficant oxidative effects in animals.

Pubmed Data : Radiats Biol Radioecol. 2010 Jan-Feb;50(1):22-7. PMID: **20297677**

Article Published Date : Jan 01, 2010

Authors : Iu G Grigor'ev, V F Mikhaĭlov, A A Ivanov, V N Mal'tsev, A M Ulanova, N M Stavrakova, I A Nikolaeva, O A Grigor'ev

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

This study is a diagnostic test that seeks to test the radical pair hypothesis.

Pubmed Data : J Am Chem Soc. 2004 Jul 7 ;126(26):8102-3. PMID: **15225036**

Article Published Date : Jul 07, 2004

Authors : Kevin B Henbest, Philipp Kukura, Christopher T Rodgers, P J Hore, Christiane R Timmel

Study Type : Human Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Unprecedented human exposure to radiofrequency electromagnetic radiation has been occurring in the past two decades. Evidence of its effects on the CNS, including altered neurodevelopment and increased risk of some neurodegenerative diseases.

Pubmed Data : Lancet Planet Health. 2018 12 ;2(12):e512-e514. PMID: 30526934

Article Published Date : Jan 12, 2018

Authors : Priyanka Bandara, David O Carpenter

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Vitamin C may have protective effects on female reproductive system against oxidative damage.

Pubmed Data : Toxicol Ind Health. 2018 Jan 1:748233718775540. Epub 2018 Jan 1. PMID: 29848237

Article Published Date : Dec 31, 2017

Authors : Mustafa Saygin, Ozlem Ozmen, Onur Erol, Hamit Yasar Ellidag, Ilter Ilhan, Rahime Aslankoc

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Vitamin C may play a protective role against detrimental effects of mobile phone radiation in rat brain tissue.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1044-9. Epub 2010 Aug 10. PMID: 20698742

Article Published Date : Dec 01, 2010

Authors : Ergüder B Imge, Bülent Kiliçoğlu, Erdinç Devrim, Recep Cetin, Ilker Durak

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Adenosine deaminase inhibitor : CK(16) : AC(5) , Antioxidants : CK(14410) : AC(5758), Malondialdehyde Down-regulation : CK(1452) : AC(466) , Radioprotective :

CK(1247) : AC(406), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Weak static magnetic fields induce oxidative stress.

Pubmed Data : Biomed Res Int. 2018 ;2018:3960408. Epub 2018 May 14. PMID: 29888261

Article Published Date : Jan 01, 2018

Authors : E Coballase-Urrutia, L Navarro, J L Ortiz, L Verdugo-Díaz, J M Gallardo, Maria Eugenia Hernández, F Estrada-Rojo

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Malondialdehyde Down-regulation : CK(1452) : AC(466) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Wi-Fi radiation leads to DNA damage in rat testes.

Pubmed Data : J Pediatr Urol. 2013 Apr ;9(2):223-9. Epub 2012 Mar 30. PMID: 22465825

Article Published Date : Apr 01, 2013

Authors : Halil I Atasoy, Mehmet Y Gunal, Pinar Atasoy, Serenay Elgun, Guler Bugdayci

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

ZInc attentuates oxidative stress related to electromagnetic field exposure in the rat brain.

Pubmed Data : Tohoku J Exp Med. 2006 Feb ;208(2):133-40. PMID: 16434836

Article Published Date : Feb 01, 2006

Authors : Cem Seref Bediz, Abdulkerim Kasim Baltaci, Rasim Mogulkoc, Esma Oztekin

Study Type : Animal Study
Additional Links
Substances : Zinc : CK(1067) : AC(165)

Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Pancytopenia (AC 1) (CK 10)

Examination of workers servicing radio location, radio navigation and communication means proved electromagnetic radiofrequency waves to induce some peripheral blood changes.

Pubmed Data : Med Tr Prom Ekol. 2001(11):19-23. PMID: 11768949

Article Published Date : Jan 01, 2001

Authors : E V Pak

Study Type : Human Study
Additional Links
Diseases : Pancytopenia : CK(12) : AC(2)
Additional Keywords : Pancytopenia : CK(12) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Parkinson's Disease (AC 1) (CK 1)

Mobile phone electromagnetic radiation affects amyloid precursor protein and α-synuclein metabolism in SH-SY5Y cells.

Pubmed Data : Pathophysiology. 2019 Mar 1. Epub 2019 Mar 1. PMID: 30850244

Article Published Date : Feb 28, 2019

Authors : Aikaterina L Stefi, Lukas H Margaritis, Aikaterini S Skouroliakou, Dido Vassilacopoulou

Study Type : In Vitro Study

Additional Links
Diseases : Alzheimer's Disease : CK(2442) : AC(871) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Parkinson's Disease : CK(1155) : AC(411)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Perinatal Mortality (AC 1) (CK 10)

Perinatal mortality and preeclampsia increased after paternal acute increased estimated radiofrequency exposure from fast patrol boats.

Pubmed Data : J Occup Environ Med. 2012 Apr ;54(4):431-8. PMID: 22354128

Article Published Date : Apr 01, 2012

Authors : Valborg Baste, Bente E Moen, Gunnhild Oftedal, Leif Age Strand, Line Bjørge, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Perinatal Mortality : CK(1) : AC(1) , Perinatal Mortality : CK(1) : AC(1)
Additional Keywords : Perinatal Mortality : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Pregnancy Complications (AC 1) (CK 10)

Mobile phone use during pregnancy may be related to spontaneous abortion.

Pubmed Data : J Environ Health Sci Eng. 2015 ;13:34. Epub 2015 Apr 21. PMID: 25937931

Article Published Date : Jan 01, 2015

Authors : Fatemeh Shamsi Mahmoudabadi, Saeideh Ziaei, Mohammad Firoozabadi, Anoshirvan

Kazemnejad

Study Type : Human Study
Additional Links
Diseases : Abortion: Spontaneous : CK(214) : AC(30) , Pregnancy Complications : CK(193) : AC(24)
Additional Keywords : Pregnancy Complications : CK(193) : AC(24) , Pregnancy Complications : CK(193) : AC(24), Pregnancy Complications : CK(193) : AC(24) , Pregnancy Complications : CK(193) : AC(24), Pregnancy Complications : CK(193) : AC(24) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3)

Prenatal Nutrition: Health of the Offspring (AC 1) (CK 2)

High-intensity electromagnetic radiation associated with cell phone exposure is very likely to induce the death of embryonic cells and decrease the chance of their implantation, thereby posing a high risk to pregnancy.

Pubmed Data : J Huazhong Univ Sci Technolog Med Sci. 2012 Oct ;32(5):755-9. Epub 2012 Oct 18. PMID: 23073809

Article Published Date : Oct 01, 2012

Authors : Wenhui Liu, Xinmin Zheng, Zaiqing Qu, Ming Zhang, Chun Zhou, Ling Ma, Yuanzhen Zhang

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Prenatal Nutrition: Health of the Offspring : CK(246) : AC(35)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Prenatal Radiation Exposure (AC 3) (CK 14)

Exposure to electromagnetic fields from laptop use of "laptop" computers likely carry adverse health risks to the adult's body and to the fetus.

Pubmed Data : Arch Environ Occup Health. 2012 Jan ;67(1):31-6. PMID: 22315933

Article Published Date : Jan 01, 2012

Authors : C V Bellieni, I Pinto, A Bogi, N Zoppetti, D Andreuccetti, G Buonocore

Study Type : Human Study
Additional Links
Diseases : Prenatal Radiation Exposure : CK(16) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Laptop Computer Use : CK(20) : AC(2)
Problem Substances : Laptop computers : CK(20) : AC(2)
Adverse Pharmacological Actions : Radiotoxic : CK(22) : AC(4)

Exposure to microwave radiation from cellular phones during pregnancy has certain harm on fetal rat brains.

Pubmed Data : Electromagn Biol Med. 2012 Jan 23. Epub 2012 Jan 23. PMID: 22268709

Article Published Date : Jan 23, 2012

Authors : Ji Jing, Zhang Yuhua, Yang Xiao-Qian, Jiang Rongping, Guo Dong-Mei, Cui Xi

Study Type : Animal Study
Additional Links
Diseases : Cell Phone Induced Disease : CK(16) : AC(4) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Prenatal Radiation Exposure : CK(16) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Long term prenatal mobile phone exposure might inhibit the expression of PCNA and DCX in dentate gyrus of rat offspring by down-regulating BDNF.

Pubmed Data : Zhongguo Ying Yong Sheng Li Xue Za Zhi. 2018 Jan 8 ;34(1):35-38. PMID: 29926656

Article Published Date : Jan 07, 2018

Authors : Ling-Xing Wang, Hong-Hong Huang, Guo-Rong Lv

Study Type : Animal Study
Additional Links
Diseases : Prenatal Radiation Exposure : CK(16) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Psychiatric Disorders (AC 4) (CK 31)

Exposure to electromagnetic radiation from mobile phone base stations and other electronic devices was associated with psychiatric symptoms.

Pubmed Data : Cad Saude Publica. 2015 Oct ;31(10):2110-26. PMID: 26735379

Article Published Date : Sep 30, 2015

Authors : Denize Francisca da Silva, Warley Rocha Barros, Maria da Conceição Chagas de Almeida, Marco Antônio Vasconcelos Rêgo

Study Type : Human Study
Additional Links
Diseases : Psychiatric Disorders : CK(123) : AC(31)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Inhabitants living nearby mobile phone base stations are at risk for developing neuropsychiatric problems and some changes in the performance of neurobehavioral functions either by facilitation or inhibition.

Pubmed Data : Neurotoxicology. 2007 Mar;28(2):434-40. Epub 2006 Aug 1. PMID: 16962663

Article Published Date : Mar 01, 2007

Authors : G Abdel-Rassoul, O Abou El-Fateh, M Abou Salem, A Michael, F Farahat, M El-Batanouny, E Salem

Study Type : Human Study
Additional Links
Diseases : Depression : CK(4054) : AC(705) , Psychiatric Disorders : CK(123) : AC(31)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Microwave frequency electromagnetic fields produce

widespread neuropsychiatric effects including depression.

Pubmed Data : J Chem Neuroanat. 2016 Sep ;75(Pt B):43-51. Epub 2015 Aug 21. PMID: 26300312

Article Published Date : Aug 31, 2016

Authors : Martin L Pall

Study Type : Review
Additional Links
Diseases : Depression : CK(4054) : AC(705) , Psychiatric Disorders : CK(123) : AC(31)
Additional Keywords : Risk Factors : CK(3057) : AC(392)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

People with psychiatric morbidity are more likely to report sensitivity to electromagnetic fields in this Taiwanese study.

Pubmed Data : J Formos Med Assoc. 2011 Oct ;110(10):634-41. Epub 2011 Sep 14. PMID: 21982467

Article Published Date : Oct 01, 2011

Authors : Mei-Chih Meg Tseng, Yi-Ping Lin, Tsun-Jen Cheng

Study Type : Human Study
Additional Links
Diseases : Psychiatric Disorders : CK(123) : AC(31)
Additional Keywords : Psychiatric Disorders : CK(123) : AC(31)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Psychological Distress (AC 1) (CK 2)

Influence of electromagnetic fields on the rat stress system is dependent on the time of exposure.

Pubmed Data : Biomol Ther (Seoul). 2014 Nov ;22(6):570-6. Epub 2014 Nov 30. PMID: 25489427

Article Published Date : Nov 01, 2014

Authors : Seyed Mohammad Mahdavi, Hedayat Sahraei, Parichehreh Yaghmaei, Hassan Tavakoli

Study Type : Animal Study
Additional Links
Diseases : Psychological Distress : CK(20) : AC(2)

Additional Keywords : Psychological Distress : CK(20) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Puberty: Delayed (AC 1) (CK 2)

Exposure to 2400 MHz induces oxidative stress in the brains and ovaries of female rats. Exposure, especially in the prenatal period, results in delayed puberty and postnatal growth restriction.

Pubmed Data : Electromagn Biol Med. 2015 Mar ;34(1):63-71. Epub 2014 Jan 24. PMID: 24460416

Article Published Date : Mar 01, 2015

Authors : Ozlem Sangun, Bumin Dundar, Hakan Darici, Selcuk Comlekci, Duygu Kumbul Doguc, Suheyla Celik

Study Type : Animal Study
Additional Links
Diseases : , Oxidative Stress : CK(6519) : AC(2436) , Puberty: Delayed : CK(2) : AC(1)
Additional Keywords : Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1), Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1), Puberty: Delayed : CK(2) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Puberty: Precocious (AC 1) (CK 2)

Rats born to mothers exposed to Wi-Fi and cell phone electromagnetic fields exhibit elevated oxidative stress in kidneys and testes and may cause precocious puberty.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):221-9. Epub 2013 Oct 8. PMID: 24101576

Article Published Date : Dec 01, 2013

Authors : Alper Özorak, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Derviş Özçelik, Mehmet Okan Özkaya, Hasan Çetin, Mehmet Cemal Kahya, Seyit Ali Kose

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436), Puberty: Precocious : CK(2) : AC(2)
Additional Keywords : Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Radiation Induced Illness (AC 50) (CK 185)

10 GHz electromagnetic field radiation induces development delay and may affect fertility is Drosophilia melanogaster.

Pubmed Data : Int J Radiat Biol. 2006 Jun ;82(6):435-41. PMID: 16846978

Article Published Date : Jun 01, 2006

Authors : Emel Atli, Hacer Unlü

Study Type : Animal Study
Additional Links
Diseases : Infant Neurological Development : CK(58) : AC(9) , Infertility : CK(1359) : AC(316) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

16.5-GHz radiation causes significant changes in the activity of protein kinase C in rats.

Pubmed Data : Electromagn Biol Med. 2012 Sep ;31(3):233-42. PMID: 22897404

Article Published Date : Sep 01, 2012

Authors : R Paulraj, J Behari

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

1800 MHz increases oxidative stress and apoptosis in mouse-derived sperm cells, but N-acetyl cysteine and autophagy prevented EMF-associated cell death.

Pubmed Data : Toxicol Lett. 2014 Aug 4 ;228(3):216-24. Epub 2014 May 9. PMID: 24813634

Article Published Date : Aug 04, 2014

Authors : Kaijun Liu, Guowei Zhang, Zhi Wang, Yong Liu, Jianyun Dong, Xiaomei Dong, Jinyi Liu, Jia Cao, Lin Ao, Shaoxiang Zhang

Study Type : In Vitro Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Additional Keywords : Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

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50 Hz magnetic fields and lipopolysaccharides synergistically reduce cell viability in vitro.

Pubmed Data : Int J Radiat Biol. 2016 10 ;92(10):583-9. Epub 2016 Jul 19. PMID: 27430265

Article Published Date : Jan 10, 2016

Authors : Maresuke Nakayama, Aya Nakamura, Tsuyoshi Hondou, Hidetake Miyata

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Lipopolysaccharide-Induced Toxicity : CK(1105) : AC(650), Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

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900 MHz EMF induced mild skin changes that were attentuated by melatonin.

Pubmed Data : Toxicol Ind Health. 2004 Sep ;20(6-10):133-9. PMID: **15941010**

Article Published Date : Sep 01, 2004

Authors : Fehmi Ozguner, Gulsen Aydin, Hakan Mollaoglu, Osman Gökalp, Ahmet Koyu, Gokhan Cesur

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Bone marrow stem cells exposed to a 2.586 GHz electromagnetic field exhibit mRNA expression levels of osteopontin and osteocalcin.

Pubmed Data : PLoS One. 2015 ;10(2):e0117550. Epub 2015 Feb 6. PMID: **25658708**

Article Published Date : Jan 01, 2015

Authors : Changzhen Wang, Xiaoyan Wang, Hongmei Zhou, Guofu Dong, Xue Guan, Lifeng Wang, Xinping Xu, Shuiming Wang, Peng Chen, Ruiyun Peng, Xiangjun Hu

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Bone Quality : CK(8) : AC(4) , Bone Quality : CK(8) : AC(4) , Bone Quality : CK(8) : AC(4), Bone Quality : CK(8) : AC(4) , Bone Quality : CK(8) : AC(4) , Bone Quality : CK(8) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

Cell phone radiation leads to neuronal loss in 8-week old rats.

Pubmed Data : Brain Res. 2015 Oct 22 ;1624:232-238. Epub 2015 Jul 31. PMID: 26239913

Article Published Date : Oct 22, 2015

Authors : Arzu Şahin, Ali Aslan, Orhan Baş, Ayşe İkinci, Cansu Özyılmaz, Osman Fikret Sönmez, Serdar Çolakoğlu, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Children : CK(10) : AC(1) , Children : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

Cells treated with the combination of 2.45 GHz electromagnetic fields at specific absorption rates from 50 to 200 W/kg and bleomycin exhibited increased hypoxanthine-guanine phosphoribosyl transferase gene mutations

Pubmed Data : J Radiat Res. 2007 Jan ;48(1):69-75. Epub 2006 Dec 19. PMID: 17179647

Article Published Date : Jan 01, 2007

Authors : Shin Koyama, Yoshio Takashima, Tomonori Sakurai, Yukihisa Suzuki, Masao Taki, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

Chronic exposure to microwave radiation may cause significant brain damage via melatonin reduction, capsase upregulation, and changes in cellular calcium.

Pubmed Data : Appl Biochem Biotechnol. 2012 Jan ;166(2):379-88. Epub 2011 Nov 29. PMID: 22134878

Article Published Date : Jan 01, 2012

Authors : Kavindra Kumar Kesari, Sanjay Kumar, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

Chronic exposure to microwave radiations cause statistically significant increase in DNA single strand breaks in brain cells of rat.

Pubmed Data : Mutat Res. 2006 Apr 11 ;596(1-2):76-80. Epub 2006 Feb 2. PMID: 16458332

Article Published Date : Apr 11, 2006

Authors : R Paulraj, J Behari

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Currently, there is insufficient data to draw firm conclusions about health effects from long-term low-level radiofrequency electromagnetic field exposure typically occurring in the everyday environment.

Pubmed Data : Bull World Health Organ. 2010 Dec 1 ;88(12):887-896F. Epub 2010 Oct 5. PMID: 21124713

Article Published Date : Dec 01, 2010

Authors : Martin Röösli, Patrizia Frei, Evelyn Mohler, Kerstin Hug

Study Type : Review
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Electromagnetic radiation alters the rat hematopoietic system in a dose-dependent manner.

Pubmed Data : Wei Sheng Yan Jiu. 2011 Mar ;40(2):223-6. PMID: 21560316

Article Published Date : Mar 01, 2011

Authors : Suhong Guo, Xincheng Wang, Junjie Xu, Jiandong Lei, Kexin Sun, Xiaoming Jiang, Huijing Xu, Shijie Lü

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Electromagnetic radiation from Wi-Fi or cell phones placed within 10cm of cell cultures results in increased oxidative stress and apoptosis.

Pubmed Data : Biochim Biophys Acta. 2015 Oct ;1848(10 Pt B):2756-65. Epub 2015 Feb 19. PMID: 25703814

Article Published Date : Oct 01, 2015

Authors : Bilal Çiğ, Mustafa Nazıroğlu

Study Type : Human In Vitro
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation induces structural changes in the brains of rats and impacts redox and inflammatory systems.

Pubmed Data : Turk Neurosurg. 2013 ;23(6):707-15. PMID: 24310452

Article Published Date : Jan 01, 2013

Authors : Olcay Eser, Ahmet Songur, Cevat Aktas, Ergun Karavelioglu, Veli Caglar, Firdevs Aylak, Fehmi Ozguner, Mehmet Kanter

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Interleukin-1 beta downregulation : CK(1743) : AC(868)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic

Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Inflammatory : CK(312) : AC(92), Oxidant : CK(122) : AC(48)

Evidence of oxidative stress after continuous exposure to Wi-Fi radiation in rat model.

Pubmed Data : Environ Sci Pollut Res Int. 2018 Dec ;25(35):35396-35403. Epub 2018 Oct 21. PMID: 30343375

Article Published Date : Nov 30, 2018

Authors : Kasra Kamali, Ali Taravati, Shayan Sayyadi, Fatemeh Zahra Gharib, Houman Maftoon

Study Type : Animal Study
Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)

Exposure to 900 MHz electromagnetic field for 1 hour of the course of 30 days causes alterations in adult rat testicular morphology and biochemistry.

Pubmed Data : Int J Radiat Biol. 2015 Jul ;91(7):547-54. Epub 2015 May 20. PMID: 25786704

Article Published Date : Jul 01, 2015

Authors : Ersan Odacı, Cansu Özyılmaz

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Exposure to electromagnetic fields far below current exposure limits results in increased biomarkers oxidative stress in rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(3):177-88. PMID: 16954120

Article Published Date : Jan 01, 2006

Authors : Ali Ihsan Yurekli, Mehmed Ozkan, Tunaya Kalkan, Hale Saybasili, Handan Tuncel, Pinar Atukeren, Koray Gumustas, Selim Seker

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Extremely low frequency electromagnetic fields downregulate insulin secretion.

Pubmed Data : Biochem Biophys Res Commun. 2005 Jun 24 ;332(1):28-32. PMID: **15896294**

Article Published Date : Jun 24, 2005

Authors : Tomonori Sakurai, Shin Koyama, Yoshiki Komatsubara, Wang Jin, Junji Miyakoshi

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Insulin : CK(149) : AC(23)

Fields from a standard cellular telephone can alter brain function as a consequence of absorption of energy by the brain.

Pubmed Data : Bioelectromagnetics. 2003 Jul ;24(5):339-46. PMID: **12820291**

Article Published Date : Jul 01, 2003

Authors : Andrew A Marino, Erik Nilsen, Clifton Frilot

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Free radical concentration increase within the cell caused by radiofrequency/microwave radiation seems to be a biologically relevant hypothesis to give clear insight into

the RF/MW action at non-thermal level of radiation.

Pubmed Data : Arh Hig Rada Toksikol. 2012 Sep ;63(3):407-16. PMID: 23152390

Article Published Date : Sep 01, 2012

Authors : Ana Marija Marjanović, Ivan Pavičić, Ivančica Trošić

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Green tea catechins confer cardioprotective and radioprotective effects in rats exposed to microwave radiation.

Pubmed Data : J Med Food. 2004 ;7(3):299-304. PMID: 15383222

Article Published Date : Jan 01, 2004

Authors : Mi-Ji Kim, Soon-Jae Rhee

Study Type : Animal Study
Additional Links
Substances : Green Tea : CK(2720) : AC(822)
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Antioxidants : CK(14410) : AC(5758) , Cardioprotective : CK(3412) : AC(1032) , Radioprotective : CK(1247) : AC(406) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

High-level radiofrequency electromagnetic radiation exposure increased stress hormone secretion.

Pubmed Data : Rev Environ Health. 2005 Apr-Jun;20(2):151-61. PMID: 16121836

Article Published Date : Apr 01, 2005

Authors : Katia Koicheva Vangelova, Mishel Salvador Israel

Study Type : Human Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

It is notoriously difficult to accurately measure levels of electromagnetic field exposure to effectively design studies.

Pubmed Data : Ann Acad Med Singapore. 2001 Sep ;30(5):489-93. PMID: **11603131**

Article Published Date : Sep 01, 2001

Authors : B Knave

Study Type : Review
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Long-term 900 MHz electromagnetic wave exposure may be detrimental to developing brains.

Pubmed Data : Neurol Sci. 2003 Oct ;24(3):111-6. PMID: **14600821**

Article Published Date : Oct 01, 2003

Authors : O O Erdinc, M C Baykul, O Ozdemir, S Ozkan, B Sirmagul, S D Oner, G Ozdemir

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Long-term intermittent exposure to radiofrequency fields can enhance the probability that mice carrying a lymphomagenic oncogene will develop lymphomas.

Pubmed Data : Radiat Res. 1997 May ;147(5):631-40. PMID: **9146709**

Article Published Date : May 01, 1997

Authors : M H Repacholi, A Basten, V Gebski, D Noonan, J Finnie, A W Harris

Study Type : Animal Study
Additional Links
Diseases : Lymphoma : CK(253) : AC(83) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Low-intensity extremely high frequency electromagnetic

radiation has a profound effect on immunity.

Pubmed Data : Biofizika. 2002 Jan-Feb;47(1):71-7. PMID: 11855293

Article Published Date : Jan 01, 2002

Authors : M P Kolomytseva, A B Gapeev, V B Sadovnikov, N K Chemeris

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Low-level exposure to extremely low frequency microwaves can modify the activity of cholinergic system in the brain.

Pubmed Data : Int J Radiat Biol. 2004 Sep ;80(9):691-8. PMID: 15586889

Article Published Date : Sep 01, 2004

Authors : V Vorobyov, V Pesić, B Janać, Z Prolić

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Melatonin and caffeic acid phenethyl ester prevent renal tubular injury by reducing oxidative stress and protect the kidney from oxidative damage induced by 900 MHz mobile phone.

Pubmed Data : Mol Cell Biochem. 2005 Aug ;276(1-2):31-7. PMID: 16132682

Article Published Date : Aug 01, 2005

Authors : Fehmi Ozguner, Faruk Oktem, Abdullah Armagan, Ramazan Yilmaz, Ahmet Koyu, Reha Demirel, Huseyin Vural, Efkan Uz

Study Type : Animal Study
Additional Links
Substances : Caffeic acid phenethyl ester : CK(58) : AC(30) , Melatonin : CK(1399) : AC(461)
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Nephrotoxic : CK(179) : AC(43)

Melatonin prevents liver injury by microwave radiation in rats.

Pubmed Data : Bratisl Lek Listy. 2015 ;116(2):96-100. PMID: 25665474

Article Published Date : Jan 01, 2015

Authors : B Djordjevic, D Sokolovic, G Kocic, A Veljkovic, M Despotovic, J Basic, T Jevtovic-Stoimenov, D M Sokolovic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Additional Keywords : Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Men exposed to non-ionizing radiation presented with semi-clinical injury to sperm and poor semen quality. The authors note that this did not affect reproductive function.

Pubmed Data : Zhonghua Liu Xing Bing Xue Za Zhi. 2004 Jan ;25(1):40-3. PMID: 15061945

Article Published Date : Jan 01, 2004

Authors : Xiao-ping Ding, Su-wen Yan, Ning Zhang, Jie Tang, Hai-ou Lu, Xi-liang Wang, Yi Tang

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Microwave exposure alters EEG readings and may change with individual sensitivity.

Pubmed Data : Bioelectromagnetics. 2008 Oct ;29(7):527-38. PMID: 18452168

Article Published Date : Oct 01, 2008

Authors : Hiie Hinrikus, Maie Bachmann, Jaanus Lass, Deniss Karai, Viiu Tuulik

Study Type : Human Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Microwave radiation induces apoptosis in rat myocardial cells through redox and metabolic mechanisms.

Pubmed Data : Can J Physiol Pharmacol. 2016 Aug ;94(8):849-57. Epub 2016 Mar 6. PMID: 27203380

Article Published Date : Aug 01, 2016

Authors : Wenhe Zhu, Yan Cui, Xianmin Feng, Yan Li, Wei Zhang, Junjie Xu, Huiyan Wang, Shijie Lv

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Oxidant : CK(122) : AC(48)

Millimeter waves enhance aerobic glycolysis in human erythromyeloid leukemia cell and have an antiproliferative effect.

Pubmed Data : Bioelectrochemistry. 2007 May ;70(2):214-20. Epub 2006 Jul 12. PMID: 16959547

Article Published Date : May 01, 2007

Authors : A Beneduci, G Chidichimo, S Tripepi, E Perrotta, F Cufone

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Mobile phone radiation exposure at a specific absorption rate of 0.95W/kg caused a significant decrease in the number of Purkinje cells and a tendency for granule cells to increase in cerebellum.

Pubmed Data : Int J Radiat Biol. 2010 Jul ;86(7):548-54. PMID: 20545571

Article Published Date : Jul 01, 2010

Authors : Murat C Rağbetli, Atif Aydinlioğlu, Necat Koyun, Cennet Rağbetli, Seyman Bektas, Serdar Ozdemir

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Prolonged use of cellular telephones may lead to reduced melatonin production, and elevated 60-Hz MF exposures may potentiate the effect.

Pubmed Data : Int J Radiat Biol. 2002 Nov ;78(11):1029-36. PMID: 12456290

Article Published Date : Nov 01, 2002

Authors : J B Burch, J S Reif, C W Noonan, T Ichinose, A M Bachand, T L Koleber, M G Yost

Study Type : Human Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Protein expression changes induced by radiofrequency radiation might depend on exposure duration and mode and many biological processes might be affected by radiofrequency exposure.

Pubmed Data : Zhonghua Yu Fang Yi Xue Za Zhi. 2006 May ;40(3):153-8. PMID: 16836875

Article Published Date : May 01, 2006

Authors : Qun-li Zeng, Yu Weng, Guang-di Chen, De-qiang Lu, Huai Chiang, Zheng-ping Xu

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation

: CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)

Radiofrequency radiation at 40 kHz induced hepatic injury in LEC rats.

Pubmed Data : J Vet Med Sci. 2011 Mar ;73(3):299-304. Epub 2010 Oct 13. PMID: **20953126**

Article Published Date : Mar 01, 2011

Authors : Hiroshi Sakai, Noboru Horiguchi, Daiji Endoh, Kenji Nakayama, Masanobu Hayashi

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96)

Radiofrequency radiation increases calcium concentration within the cell.

Pubmed Data : Radiat Res. 2008 Mar ;169(3):319-29. PMID: **18302487**

Article Published Date : Mar 01, 2008

Authors : V S Rao, I A Titushkin, E G Moros, W F Pickard, H S Thatte, M R Cho

Study Type : Review
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Short term exposure to 900 and 1800 MHz EMF can have cumulative effects in biological organisms with 900 MHz being slightly more bioactive.

Pubmed Data : Mutat Res. 2010 Jun 17 ;699(1-2):17-22. Epub 2010 Apr 23. PMID: **20399887**

Article Published Date : Jun 17, 2010

Authors : Dimitris J Panagopoulos, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)

Significant alterations in arterial blood pressure were observed in rats exposed to electromagnetic pulses while heart rate was not altered.

Pubmed Data : Int J Radiat Biol. 2007 Jun ;83(6):421-9. PMID: 17487681

Article Published Date : Jun 01, 2007

Authors : Bao-Feng Li, Guo-Zhen Guo, Dong-Qing Ren, Jing-Li, Ruo-Bing Zhang

Study Type : Animal Study
Additional Links
Diseases : Hypertension : CK(4573) : AC(670) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124)

Some scientists view data on the health effects of electromagnetic fields as strongly suggestive and argue that if the association is true, the ubiquity of exposure may be resulting in a marked underestimation of the actual risk.

Pubmed Data : Mt Sinai J Med. 1995 Oct ;62(5):356-9. PMID: 7500965

Article Published Date : Oct 01, 1995

Authors : D Wartenberg

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

The findings suggest that young persons exposed to high levels of radiofrequency/microwave radiation for long periods in settings where preventive measures were lax were at increased risk for cancer.

Pubmed Data : Int J Occup Environ Health. 2000 Jul-Sep;6(3):187-93. PMID: 10926722

Article Published Date : Jul 01, 2000

Authors : E Richter, T Berman, E Ben-Michael, R Laster, J B Westin

Study Type : Human Study

Additional Links
Diseases : Cancers : CK(7) : AC(3) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The long term effect of the exposure to low-level radiofrequency electromagnetic radiation evoked a pronounced stress reaction in space station operators.

Pubmed Data : Cent Eur J Public Health. 2002 Jun ;10(1-2):24-8. PMID: 12096679

Article Published Date : Jun 01, 2002

Authors : K Vangelova, M Israel, S Mihaylov

Study Type : Human Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

The population of individuals with the ability to differentiate personal exposure to electromagnetic fields is larger than reported by non-ionizing radiation governing bodies.

Pubmed Data : Bioelectromagnetics. 2003 Sep ;24(6):387-94. PMID: 12929157

Article Published Date : Sep 01, 2003

Authors : Norbert Leitgeb, Jörg Schröttner

Study Type : Human Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

The results support the hypothesis that electromagnetic field exposure can produce pineal gland melatonin

suppression by affecting individual cells.

Pubmed Data : Bioelectromagnetics. 1998 ;19(2):123-7. PMID: 9492170

Article Published Date : Jan 01, 1998

Authors : L A Rosen, I Barber, D B Lyle

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

This cohort study demonstrates a potential adverse effect of microwave radiofrequency electromagnetic fields on cognitive function that involve brain regions mostly exposed during mobile phone use.

Pubmed Data : Environ Health Perspect. 2018 07 ;126(7):077007. Epub 2018 Jul 23. PMID: 30044230

Article Published Date : Jan 01, 2018

Authors : Milena Foerster, Arno Thielens, Wout Joseph, Marloes Eeftens, Martin Röösli

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This paper reviews research that points to an association between elecromagnetic fields and cancer.

Pubmed Data : Oncology (Williston Park). 1996 Apr ;10(4):563-70; discussion 573-4, 577-8. PMID: 8723289

Article Published Date : Apr 01, 1996

Authors : J R Salvatore, A B Weitberg, S Mehta

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This review concludes that hypersensitivity to environmental electric and magnetic fields is an unclear health problem whose nature has yet to be determined.

Pubmed Data : Environ Health Perspect. 2002 Aug ;110 Suppl 4:613-8. PMID: 12194895

Article Published Date : Aug 01, 2002

Authors : Patrick Levallois

Study Type : Review
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

This review indicates that a causal relationship between electromagnetic fields and childhood leukemia cannot be dismissed due to a trend of a dose-response relationship is past exposure assessment studies.

Pubmed Data : Am J Prev Med. 1995 Jul-Aug;11(4):263-70. PMID: 7495604

Article Published Date : Jul 01, 1995

Authors : P Levallois

Study Type : Review
Additional Links
Diseases : Leukemia : CK(1284) : AC(586) , Leukemia: Childhood : CK(10) : AC(1) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study indicates that occupational exposure MRI emissions may be related to health complaints of nurses. There is also a possible dose-response relationship between the prevalence of health complaints and the strength of the MRI.

Pubmed Data : Eur J Radiol. 2011 Nov ;80(2):510-3. Epub 2010 Oct 14. PMID: 20950976

Article Published Date : Nov 01, 2011

Authors : Jonna Wilén, Frank de Vocht

Study Type : Human Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Salivary Gland Diseases (AC 9) (CK 92)

A significantly higher saliva secretion rate was noticed in the dominant side of mobile phone use compared with that in the non-dominant side.

Pubmed Data : Oral Dis. 2010 Mar ;16(2):146-50. Epub 2009 Sep 8. PMID: 19744173

Article Published Date : Mar 01, 2010

Authors : O Goldwein, D J Aframian

Study Type : Human Study
Additional Links
Diseases : Hypersalivation : CK(30) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Although the increase in salivary gland cancer incidence is small, cell phone use cannot be excluded as a contributing factor.

Pubmed Data : Epidemiology. 2011 Jul ;22(4):608-9. PMID: 21642782

Article Published Date : Jul 01, 2011

Authors : Frank de Vocht

Study Type : Human Study
Additional Links
Diseases : Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7) , RF-EMF and Cancers : CK(4078) : AC(1287)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Animals exposed to a 2100 MHz exhibited histopathological changes in salivary glands.

Pubmed Data : Am J Otolaryngol. 2015 Jan-Feb;36(1):39-46. Epub 2014 Oct 5. PMID: 25456509

Article Published Date : Jan 01, 2015

Authors : Filiz Aydogan, Ilhan Unlu, Emine Aydin, Nihat Yumusak, Erdinc Devrim, Ethem Erdal Samim, Elcin Ozgur, Velid Unsal, Arin Tomruk, Goknur Guler Ozturk, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Diseases : Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7) , Salivary Gland Diseases : CK(36) : AC(7), Salivary Gland Diseases : CK(36) : AC(7) , Salivary Gland Diseases : CK(36) : AC(7) , Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Heavy users of mobile phones demonstrated increased salivary flow rate, blood flow rate, and volume of parotid glands.

Pubmed Data : Oral Surg Oral Med Oral Pathol Oral Radiol. 2012 Aug ;114(2):200-6. PMID: 22769405

Article Published Date : Aug 01, 2012

Authors : Stuti Bhargava, Mukta Bhagwandas Motwani, Vinod Madan Patni

Study Type : Human Study
Additional Links
Diseases : Hypersalivation : CK(30) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

No association between the use of cellular or cordless phones and salivary gland tumours was found, although

this study does not permit conclusions for long term heavy use and is a relatively small sample size.

Pubmed Data : Occup Environ Med. 2004 Aug ;61(8):675-9. PMID: 15258273

Article Published Date : Aug 01, 2004

Authors : L Hardell, A Hallquist, K Hansson Mild, M Carlberg, H Gertzén, E-B Schildt, A Dahlqvist

Study Type : Human Study
Additional Links
Diseases : Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

There is an an almost doubling of the risk of head tumours induced by long-term mobile phone use or latency.

Pubmed Data : Environ Health. 2011 Jun 17;10(1):59. Epub 2011 Jun 17. PMID: 21679472

Article Published Date : Jun 17, 2011

Authors : Angelo G Levis, Nadia Minicuci, Paolo Ricci, Valerio Gennaro, Spiridione Garbisa

Study Type : Meta Analysis
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

These results suggest a possible dose-response relationship of cellular phone use with epithelial parotid gland malignancy.

Pubmed Data : Int J Oral Maxillofac Surg. 2011 Sep ;40(9):966-72. Epub 2011 Apr 6. PMID: 21474287

Article Published Date : Sep 01, 2011

Authors : Y Duan, H Z Zhang, R F Bu

Study Type : Human Study
Additional Links
Diseases : Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

These results suggest an association between cellular phone use and salivary gland tumors.

Pubmed Data : Am J Epidemiol. 2008 Feb 15 ;167(4):457-67. Epub 2007 Dec 6. PMID: 18063591

Article Published Date : Feb 15, 2008

Authors : Siegal Sadetzki, Angela Chetrit, Avital Jarus-Hakak, Elisabeth Cardis, Yonit Deutch, Shay Duvdevani, Ahuva Zultan, Ilya Novikov, Laurence Freedman, Michael Wolf

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study showed an association between mobile phone use and salivary gland tumors.

Pubmed Data : Gulf J Oncolog. 2016 Jan ;1(20):71-8. PMID: 27050182

Article Published Date : Jan 01, 2016

Authors : K Al-Qahtani

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Schwannoma (AC 1) (CK 2)

This study examining mice exposed to extremely low frequency magnetic fields demonstrated that lifetime exposure increases the risk for various types of cancers.

Pubmed Data : Int J Radiat Biol. 2016 ;92(4):202-14. Epub 2016 Feb 19. PMID: 26894944

Article Published Date : Jan 01, 2016

Authors : Morando Soffritti, Eva Tibaldi, Michela Padovani, David G Hoel, Livio Giuliani, Luciano Bua, Michelina Lauriola, Laura Falcioni, Marco Manservigi, Fabiana Manservisi, Simona Panzacchi, Fiorella Belpoggi

Study Type : Animal Study
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Leukemias : CK(479) : AC(215) , Lymphoma : CK(253) : AC(83), Schwannoma : CK(5) : AC(3)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Schwannoma: Vestibular (AC 1) (CK 10)

Vestibular schwannomas coincide with the more frequently used ear of mobile phones and tumor volume is strongly correlated with the amount of mobile phone use.

Pubmed Data : Tumour Biol. 2014 Jan ;35(1):581-7. Epub 2013 Aug 27. PMID: 23975478

Article Published Date : Jan 01, 2014

Authors : In Seok Moon, Bo Gyung Kim, Jinna Kim, Jong Dae Lee, Won-Sang Lee

Study Type : Human Study
Additional Links
Diseases : Schwannoma: Vestibular : CK(2) : AC(1)
Additional Keywords : Schwannoma: Vestibular : CK(2) : AC(1) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

Seizures (AC 2) (CK 4)

GSM-type radiation can induce seizures in rats following their facilitation by subconvulsive doses of picrotoxin, which has relevance in human epileptic disorders.

Pubmed Data : Neurosci Lett. 2006 May 1 ;398(1-2):139-44. Epub 2006 Jan 30. PMID: 16448750

Article Published Date : May 01, 2006

Authors : Elena López-Martín, José L Relova-Quinteiro, Rosalia Gallego-Gómez, Manuel Peleteiro-Fernández, Francisco J Jorge-Barreiro, Francisco J Ares-Pena

Study Type : Animal Study
Additional Links
Diseases : Epilepsy : CK(530) : AC(137) , Seizures : CK(298) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone radiation might induce regional changes in brain activity in a seizure-prone rats.

Pubmed Data : J Neurosci Res. 2009 May 1 ;87(6):1484-99. PMID: 19115403

Article Published Date : May 01, 2009

Authors : E López-Martín, J Bregains, J L Relova-Quinteiro, C Cadarso-Suárez, F J Jorge-Barreiro, F J Ares-Pena

Study Type : Animal Study
Additional Links
Diseases : Seizures : CK(298) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Skin Cancer (AC 1) (CK 10)

The authors of this study concluded that melanoma is associated with exposure to FM broadcasting.

Pubmed Data : Arch Environ Health. 2002 Jan-Feb;57(1):32-40. PMID: 12071358

Article Published Date : Jan 01, 2002

Authors : Orjan Hallberg, Olle Johansson

Study Type : Human Study
Additional Links
Diseases : Melanoma : CK(584) : AC(306) , Skin Cancer : CK(1175) : AC(495)
Additional Keywords : Skin Cancer : CK(1175) : AC(495) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Sleep Disorders (AC 15) (CK 142)

Daily occupational EMF exposure was positively associated with poor sleep quality.

Pubmed Data : PLoS One. 2014 ;9(10):e110825. Epub 2014 Oct 23. PMID: 25340654

Article Published Date : Jan 01, 2014

Authors : Hui Liu, Guangdi Chen, Yifeng Pan, Zexin Chen, Wen Jin, Chuan Sun, Chunjing Chen, Xuanjun Dong, Kun Chen, Zhengping Xu, Shanchun Zhang, Yunxian Yu

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Additional Keywords : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Electromagnetic field emissions may downregulate the synthesis of beta trace protein, the key enzyme in the

synthesis of prostaglandin D2 an endogenous sleep-promoting neurohormone in the brain.

Pubmed Data : Int J Mol Med. 2010 Aug ;26(2):301-6. PMID: 20596612

Article Published Date : Aug 01, 2010

Authors : Lennart Hardell, Fredrik Söderqvist, Michael Carlberg, Henrik Zetterberg, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Neurotoxic : CK(1458) : AC(323)

Electromagnetic field exposure exposure during waking modifies the EEG during subsequent sleep.

Pubmed Data : Neuroreport. 2000 Oct 20 ;11(15):3321-5. PMID: 11059895

Article Published Date : Oct 20, 2000

Authors : R Huber, T Graf, K A Cote, L Wittmann, E Gallmann, D Matter, J Schuderer, N Kuster, A A Borbély, P Achermann

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Electronic equipment repairers, exposed to ELF-EMF, are at a risk of oxidative stress and sleep insufficiency, which could be explained by lower plasma melatonin levels and higher MDA levels.

Pubmed Data : Indian J Occup Environ Med. 2010 Sep ;14(3):66-70. PMID: 21461157

Article Published Date : Sep 01, 2010

Authors : Mohamed El-Helaly, E Abu-Hashem

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) ,

Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Exposure to mobile phone radiation in talk mode markedly and significantly delays sleep latency in humans.

Pubmed Data : Neurosci Lett. 2007 Jun 21 ;421(1):82-6. Epub 2007 May 24. PMID: 17548154

Article Published Date : Jun 21, 2007

Authors : Ching-Sui Hung, Clare Anderson, James A Horne, Patrick McEvoy

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Health care workers using MRIs reported a high prevalence of subjective symptoms associated with MRI exposure.

Pubmed Data : Electromagn Biol Med. 2015 Sep ;34(3):262-4. PMID: 26444203

Article Published Date : Sep 01, 2015

Authors : G Zanotti, G Ligabue, F Gobba

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Dizziness : CK(1) : AC(1) , Fatigue : CK(312) : AC(49), Headache : CK(785) : AC(92) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

High frequency of mobile phone use at baseline was a risk factor for mental health outcomes at 1-year follow-up among the young adults

Pubmed Data : BMC Public Health. 2011 Jan 31 ;11:66. Epub 2011 Jan 31. PMID: 21281471

Article Published Date : Jan 31, 2011

Authors : Sara Thomée, Annika Härenstam, Mats Hagberg

Study Type : Human Study
Additional Links
Diseases : Depression : CK(62) : AC(7) , Sleep Disorders : CK(722) : AC(92)
Additional Keywords : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Low intensity extremely high frequency electromagnetic radiation (37 GHz) can induce electrosleep in rats.

Pubmed Data : Bull Exp Biol Med. 2004 May ;137(5):423-4. PMID: **15455106**

Article Published Date : May 01, 2004

Authors : T I Subbotina, A A Khadartsev, M A Yashin, A A Yashin

Study Type : Animal Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)

Mobile phone electromagnetic field exposure during sleep reduced waking after sleep onset and affected heart rate variability.

Pubmed Data : Bioelectromagnetics. 2003 May ;24(4):262-76. PMID: **12696086**

Article Published Date : May 01, 2003

Authors : Reto Huber, Jürgen Schuderer, Thomas Graf, Kathrin Jütz, Alexander A Borbély, Niels Kuster, Peter Achermann

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone exposure may affect melatonin onset time.

Pubmed Data : Int J Radiat Biol. 2006 Feb ;82(2):69-76. PMID: **16546905**

Article Published Date : Feb 01, 2006

Authors : Andrew W Wood, Sarah P Loughran, Con Stough

Study Type : Human Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Pulse modulation of mobile phone electromagnetic fields induces changes in the human waking and sleep EEG.

Pubmed Data : Eur J Neurosci. 2005 Feb ;21(4):1000-6. PMID: 15787706

Article Published Date : Feb 01, 2005

Authors : R Huber, V Treyer, J Schuderer, T Berthold, A Buck, N Kuster, H P Landolt, P Achermann

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Pulse-modulated mobile phone electromagnetic field exposure alters regional cerebral blood flow and sleep and waking EEG.

Pubmed Data : J Sleep Res. 2002 Dec ;11(4):289-95. PMID: 12464096

Article Published Date : Dec 01, 2002

Authors : R Huber, V Treyer, A A Borbély, J Schuderer, J M Gottselig, H-P Landolt, E Werth, T Berthold, N Kuster, A Buck, P Achermann

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Short-wave magnetic field exposure may negatively impact melatonin levels and sleep quality.

Pubmed Data : Bioelectromagnetics. 2006 Feb ;27(2):142-50. PMID: 16342198

Article Published Date : Feb 01, 2006

Authors : Ekkehardt-Siegfried Altpeter, Martin Röösli, Markus Battaglia, Dominik Pfluger, Christoph E Minder, Theodor Abelin

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)

Additional Keywords : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Swiss Survey: Effects of exposure to electromagnetic fields

Pubmed Data : Soz Praventivmed. 2006 ;51(4):202-9. PMID: 17193782

Article Published Date : Jan 01, 2006

Authors : Nadja Schreier, Anke Huss, Martin Röösli

Study Type : Human Study
Additional Links
Diseases : Headache : CK(785) : AC(92) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

This study suggests that long-term occupational exposure to ELF-EMF may lead to depression, stress, anxiety and poor sleep quality.

Pubmed Data : Electromagn Biol Med. 2019 ;38(1):96-101. Epub 2018 Dec 14. PMID: 30547710

Article Published Date : Dec 31, 2018

Authors : Majid Bagheri Hosseinabadi, Narges Khanjani, Mohammad Hossein Ebrahimi, Bahman Haji, Mazaher Abdolahfard

Study Type : Human Study
Additional Links
Diseases : Anxiety : CK(48) : AC(8) , Depression : CK(4054) : AC(705) , Sleep Disorders : CK(722) : AC(92)
Additional Keywords : Increased Risk : CK(1600) : AC(192)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)

Speech Disorders (AC 1) (CK 10)

In a survey of mothers with children between 3 and 5 years of age, maternal call time and history of mobile phone use was significantly associated with the occurrence of sleep problems.

Pubmed Data : J Biomed Phys Eng. 2015 Sep ;5(3):151-4. Epub 2015 Sep 1. PMID: 26396971

Article Published Date : Sep 01, 2015

Authors : S Zarei, S M J Mortazavi, A R Mehdizadeh, M Jalalipour, S Borzou, S Taeb, M Haghani, S A R Mortazavi, M B Shojaei-Fard, S Nematollahi, N Alighanbari, S Jarideh

Study Type : Human Study
Additional Links
Diseases : Speech Disorders : CK(30) : AC(2)
Additional Keywords : Speech Disorders : CK(30) : AC(2) , Speech Disorders : CK(30) : AC(2) , Speech Disorders : CK(30) : AC(2) , Speech Disorders : CK(30) : AC(2) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Sperm Count: Low (AC 10) (CK 46)

1800 MHz increases oxidative stress and apoptosis in mouse-derived sperm cells, but N-acetyl cysteine and autophagy prevented EMF-associated cell death.

Pubmed Data : Toxicol Lett. 2014 Aug 4 ;228(3):216-24. Epub 2014 May 9. PMID: 24813634

Article Published Date : Aug 04, 2014

Authors : Kaijun Liu, Guowei Zhang, Zhi Wang, Yong Liu, Jianyun Dong, Xiaomei Dong, Jinyi Liu, Jia Cao, Lin Ao, Shaoxiang Zhang

Study Type : In Vitro Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Additional Keywords : Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Cordyceps supplementation prevents adverse effects of electromagnetic pulse irradiation on sperm quality.

Pubmed Data : OMICS. 2017 02 ;21(2):81-89. PMID: 28186865

Article Published Date : Jan 01, 2017

Authors : Xia Miao, Yafeng Wang, Haiyang Lang, Yanyun Lin, Qiyan Guo, Mingjuan Yang, Juan Guo, Yanjun Zhang, Jie Zhang, Junye Liu, Yaning Liu, Lihua Zeng, Guozhen Guo

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932) , Antioxidant : CK(9) : AC(4) , Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Exposure to mobile signal jammers significantly reduces sperm motility in human sperm samples.

Pubmed Data : J Hum Reprod Sci. 2013 Apr ;6(2):124-8. PMID: 24082653

Article Published Date : Apr 01, 2013

Authors : Smj Mortazavi, Me Parsanezhad, M Kazempour, P Ghahramani, Ar Mortazavi, M Davari

Study Type : Human In Vitro
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Long-term exposure to Wi-Fi radiation in rats decreases sperm parameters in a time-dependent manner.

Pubmed Data : Cell J. 2015 ;17(2):322-31. Epub 2015 Jul 11. PMID: 26199911

Article Published Date : Jan 01, 2015

Authors : Saeed Shokri, Aiob Soltani, Mahsa Kazemi, Dariush Sardari, Farshid Babapoor Mofrad

Study Type : Animal Study
Additional Links

Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Male rats exposed to 1800 MHz electromagnetic fields exhibit circadian alterations including lowered sperm count and motility.

Pubmed Data : Chronobiol Int. 2014 Feb ;31(1):123-33. Epub 2013 Oct 11. PMID: **24117058**

Article Published Date : Feb 01, 2014

Authors : Fenju Qin, Jie Zhang, Honglong Cao, Weiqiang Guo, Lili Chen, Ouxi Shen, Jinpeng Sun, Cao Yi, Jianxiang Li, Jiajun Wang, Jian Tong

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Anti-Androgenic : CK(20) : AC(2)

Mobile phone electromagnetic radiation leads to decreases in sperm count, increases in the lipid peroxidation damage in sperm cells, reduction in seminiferous tubules and testicular weight, and DNA damage in rats.

Pubmed Data : Indian J Exp Biol. 2014 Sep ;52(9):890-7. PMID: **25241589**

Article Published Date : Sep 01, 2014

Authors : Sanjay Kumar, Jay Prakash Nirala, J Behari, R Paulraj

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Radiofrequency radiation induces a wide range of adverse health effects, as substantiated by a significant body of literature.

Pubmed Data : Front Public Health. 2019 ;7:223. Epub 2019 Aug 13. PMID: 31457001

Article Published Date : Jan 01, 2019

Authors : Anthony B Miller, Margaret E Sears, L Lloyd Morgan, Devra L Davis, Lennart Hardell, Mark Oremus, Colin L Soskolne

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78)

Talking for more than one hour a day while charging a mobile device may be a risk factor for abnormal sperm concentration

Pubmed Data : Reprod Biomed Online. 2015 Sep ;31(3):421-6. Epub 2015 Jun 18. PMID: 26206279

Article Published Date : Sep 01, 2015

Authors : Ariel Zilberlicht, Zofnat Wiener-Megnazi, Yulia Sheinfeld, Bronislava Grach, Shirly Lahav-Baratz, Martha Dirnfeld

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study demonstrates the adverse effects of

electromagnetic radiation on testicular parenchyma in rats.

Pubmed Data : J Toxicol Environ Health A. 2014 ;77(13):747-50. PMID: 24839928

Article Published Date : Jan 01, 2014

Authors : Viera Almášiová, Katarína Holovská, Viera Cigánková, Enikö Račeková, Kamila Fabianová, Marcela Martončíková

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Necrotic : CK(5) : AC(3)

Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation.

Pubmed Data : Fertil Steril. 2011 Nov 22. Epub 2011 Nov 22. PMID: 22112647

Article Published Date : Nov 22, 2011

Authors : Conrado Avendaño, Ariela Mata, César A Sanchez Sarmiento, Gustavo F Doncel

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Laptop Computer Use : CK(20) : AC(2), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Laptop computers : CK(20) : AC(2)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Sperm Quality: Low (AC 33) (CK 240)

1800 MHz electromagnetic fields have a negative effect on

bovine sperm quality.

Pubmed Data : J Environ Sci Health A Tox Hazard Subst Environ Eng. 2011 ;46(12):1417-23. PMID: 21942395

Article Published Date : Jan 01, 2011

Authors : Norbert Lukac, Peter Massanyi, Shubhadeep Roychoudhury, Marcela Capcarova, Eva Tvrda, Zuzana Knazicka, Anna Kolesarova, Jan Danko

Study Type : In Vitro Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)

1800 MHz increases oxidative stress and apoptosis in mouse-derived sperm cells, but N-acetyl cysteine and autophagy prevented EMF-associated cell death.

Pubmed Data : Toxicol Lett. 2014 Aug 4 ;228(3):216-24. Epub 2014 May 9. PMID: 24813634

Article Published Date : Aug 04, 2014

Authors : Kaijun Liu, Guowei Zhang, Zhi Wang, Yong Liu, Jianyun Dong, Xiaomei Dong, Jinyi Liu, Jia Cao, Lin Ao, Shaoxiang Zhang

Study Type : In Vitro Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Additional Keywords : Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Altered mitochondrial membrane potential is associated with abnormal sperm parameters.

Pubmed Data : Fertil Steril. 2003 Sep ;80 Suppl 2:844-50. PMID: 14505763

Article Published Date : Sep 01, 2003

Authors : Xia Wang, Rakesh K Sharma, Akshay Gupta, Valal George, Anthony J Thomas, Tommaso

Falcone, Ashok Agarwal

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

An increase in the percentage of sperm cells and decrease of sperm motility of abnormal morphology is associated with the duration of exposure to the waves emitted by a GSM mobile phone.

Pubmed Data : Ann Agric Environ Med. 2007 ;14(1):169-72. PMID: 17655195

Article Published Date : Jan 01, 2007

Authors : Artur Wdowiak, Leszek Wdowiak, Henryk Wiktor

Study Type : Human Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Cordyceps supplementation prevents adverse effects of electromagnetic pulse irradiation on sperm quality.

Pubmed Data : OMICS. 2017 02 ;21(2):81-89. PMID: 28186865

Article Published Date : Jan 01, 2017

Authors : Xia Miao, Yafeng Wang, Haiyang Lang, Yanyun Lin, Qiyan Guo, Mingjuan Yang, Juan Guo, Yanjun Zhang, Jie Zhang, Junye Liu, Yaning Liu, Lihua Zeng, Guozhen Guo

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932) , Antioxidant : CK(9) : AC(4) , Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Dose-dependent DNA damage resulting from mobile phone radiation is attentuated by pretreatment with melatonin in vitro.

Pubmed Data : Int J Radiat Biol. 2013 Nov ;89(11):993-1001. Epub 2013 Sep 3. PMID: 23952262

Article Published Date : Nov 01, 2013

Authors : Chuan Liu, Peng Gao, Shang-Cheng Xu, Yuan Wang, Chun-Hai Chen, Min-Di He, Zheng-Ping Yu, Lei Zhang, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Genoprotective : CK(413) : AC(148) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Electromagnetic radiation emitted by cellular phone influences human sperm motility.

Pubmed Data : Arch Med Res. 2006 Oct ;37(7):840-3. PMID: 16971222

Article Published Date : Oct 01, 2006

Authors : Osman Erogul, Emin Oztas, Ibrahim Yildirim, Tayfun Kir, Emin Aydur, Gokhan Komesli, Hasan Cem Irkilata, Mehmet Kemal Irmak, Ahmet Fuat Peker

Study Type : Human In Vitro
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Exposure to mobile signal jammers significantly reduces sperm motility in human sperm samples.

Pubmed Data : J Hum Reprod Sci. 2013 Apr ;6(2):124-8. PMID: 24082653

Article Published Date : Apr 01, 2013

Authors : Smj Mortazavi, Me Parsanezhad, M Kazempour, P Ghahramani, Ar Mortazavi, M Davari

Study Type : Human In Vitro
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

GSM mobile phone radiation increased the risk of sperm abnormalities in exposed animals.

Pubmed Data : Bull Environ Contam Toxicol. 2010 Jan ;84(1):51-4. Epub 2009 Oct 9. PMID: 19816647

Article Published Date : Jan 01, 2010

Authors : A A Otitoloju, I A Obe, O A Adewale, O A Otubanjo, V O Osunkalu

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Long-term exposure to Wi-Fi radiation in rats decreases sperm parameters in a time-dependent manner.

Pubmed Data : Cell J. 2015 ;17(2):322-31. Epub 2015 Jul 11. PMID: 26199911

Article Published Date : Jan 01, 2015

Authors : Saeed Shokri, Aiob Soltani, Mahsa Kazemi, Dariush Sardari, Farshid Babapoor Mofrad

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Male rat testes exposed to a 900 MHz electromagnetic

field exhibited altered sperm quality and biochemical characteristics.

Pubmed Data : Biotech Histochem. 2016 ;91(1):9-19. Epub 2015 Oct 15. PMID: 26472053

Article Published Date : Jan 01, 2016

Authors : E Odacı, H Hancı, E Yuluğ, S Türedi, Y Aliyazıcıoğlu, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Apoptotic : CK(5217) : AC(3846) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Male rats exposed to 1800 MHz electromagnetic fields exhibit circadian alterations including lowered sperm count and motility.

Pubmed Data : Chronobiol Int. 2014 Feb ;31(1):123-33. Epub 2013 Oct 11. PMID: 24117058

Article Published Date : Feb 01, 2014

Authors : Fenju Qin, Jie Zhang, Honglong Cao, Weiqiang Guo, Lili Chen, Ouxi Shen, Jinpeng Sun, Cao Yi, Jianxiang Li, Jiajun Wang, Jian Tong

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Anti-Androgenic : CK(20) : AC(2)

Many lifestyle variables were confirmed to influence semen quality, including the recent suggestion that storage of mobile phones close to the testes can decrease semen quality.

Pubmed Data : Biol Lett. 2005 Sep 22 ;1(3):253-5. PMID: 17148180

Article Published Date : Sep 22, 2005

Authors : Sarah J Kilgallon, Leigh W Simmons

Study Type : Human Study

Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Melatonin attentuates the spermatotoxic effects of radiofrequency radiation in mice.

Pubmed Data : Toxicol Ind Health. 2018 May ;34(5):315-327. Epub 2018 Mar 21. PMID: 29562845

Article Published Date : May 01, 2018

Authors : Neelam Pandey, Sarbani Giri

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Genoprotective : CK(413) : AC(148)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Mobile phone electromagnetic radiation leads to decreases in sperm count, increases in the lipid peroxidation damage in sperm cells, reduction in seminiferous tubules and testicular weight, and DNA damage in rats.

Pubmed Data : Indian J Exp Biol. 2014 Sep ;52(9):890-7. PMID: 25241589

Article Published Date : Sep 01, 2014

Authors : Sanjay Kumar, Jay Prakash Nirala, J Behari, R Paulraj

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Mobile phone radiation reduces sperm motility and viability, increases sperm head defects, and induces early apoptosis of sperm cells in vitro.

Pubmed Data : Zhonghua Nan Ke Xue. 2015 Jun ;21(6):515-20. PMID: 26242041

Article Published Date : Jun 01, 2015

Authors : Dong Wang, Bo Li, Yuan Liu, Ye-fei Ma, Shu-qiang Chen, Hui-jun Sun, Jie Dong, Xu-hui Ma, Jing Zhou, Xiao-hong Wang

Study Type : Human In Vitro
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Mobile phone radiation reduces sperm motility, perm linear velocity, sperm linearity index, and sperm acrosin activity and increases DNA fragmentation in vitro.

Pubmed Data : Int J Fertil Steril. 2015 Apr-Jun;9(1):129-36. Epub 2015 Apr 21. PMID: 25918601

Article Published Date : Apr 01, 2015

Authors : Adel Zalata, Ayman Z El-Samanoudy, Dalia Shaalan, Youssef El-Baiomy, Taymour Mostafa

Study Type : Human In Vitro
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Overproduction of reactive oxygen species as a result of mobile phone radiation negatively impacts the male rat reproductive system.

Pubmed Data : Electromagn Biol Med. 2012 Sep ;31(3):213-22. PMID: 22897402

Article Published Date : Sep 01, 2012

Authors : Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Radar radiation damages sperm quality, as shown in the reduction of sperm motility and elevation of sperm abnormality.

Pubmed Data : Zhonghua Nan Ke Xue. 2007 Sep ;13(9):801-3. PMID: **17929556**

Article Published Date : Sep 01, 2007

Authors : Ling-ling Ye, Yong-shan Suo, Wen-li Cao, Mei Chen

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

Radiofrequency radiation induces a wide range of adverse health effects, as substantiated by a significant body of literature.

Pubmed Data : Front Public Health. 2019 ;7:223. Epub 2019 Aug 13. PMID: **31457001**

Article Published Date : Jan 01, 2019

Authors : Anthony B Miller, Margaret E Sears, L Lloyd Morgan, Devra L Davis, Lennart Hardell, Mark Oremus, Colin L Soskolne

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78)

Sperm motility and mitochondrial membrane potential were significantly impaired after exposure to 900 MHz electromagnetic radiation at SAR 5.7 W/kg.

Pubmed Data : Bioelectromagnetics. 2008 May ;29(4):268-76. PMID: 18163440

Article Published Date : May 01, 2008

Authors : Nadia Falzone, Carin Huyser, Francois Fourie, Tim Toivo, Dariusz Leszczynski, Daniel Franken

Study Type : Human In Vitro
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Talking for more than one hour a day while charging a mobile device may be a risk factor for abnormal sperm concentration

Pubmed Data : Reprod Biomed Online. 2015 Sep ;31(3):421-6. Epub 2015 Jun 18. PMID: 26206279

Article Published Date : Sep 01, 2015

Authors : Ariel Zilberlicht, Zofnat Wiener-Megnazi, Yulia Sheinfeld, Bronislava Grach, Shirly Lahav-Baratz, Martha Dirnfeld

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Talking on the phone for more than four hours per day and pocketing mobile phones could be a risk factor for sperm DNA fragmentation.

Pubmed Data : J Endocrinol Invest. 2013 Dec ;36(11):970-4. Epub 2013 May 30. PMID: 23722985

Article Published Date : Dec 01, 2013

Authors : R Rago, P Salacone, L Caponecchia, A Sebastianelli, I Marcucci, A E Calogero, R Condorelli, E Vicari, G Morgia, V Favilla, S Cimino, A F Arcoria, S La Vignera

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The prolonged use of cell phones may have negative effects on the sperm motility characteristics.

Pubmed Data : Arch Androl. 2005 Sep-Oct;51(5):385-93. PMID: **16087567**

Article Published Date : Sep 01, 2005

Authors : I Fejes, Z Závaczki, J Szöllosi, S Koloszár, J Daru, L Kovács, A Pál

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

These findings show that cell phone use negatively affects sperm quality in men and acts as an endocrine disruptor.

Pubmed Data : Andrologia. 2011 Oct ;43(5):312-6. PMID: **21951197**

Article Published Date : Oct 01, 2011

Authors : T Gutschi, B Mohamad Al-Ali, R Shamloul, K Pummer, H Trummer

Study Type : Human Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

These findings suggest that there is evidence that non-ionizing radiation alters men's hormone levels.

Pubmed Data : J Occup Environ Med. 2000 Oct ;42(10):993-1005. PMID: **11039163**

Article Published Date : Oct 01, 2000

Authors : B Grajewski, C Cox, S M Schrader, W E Murray, R M Edwards, T W Turner, J M Smith, S S Shekar, D P Evenson, S D Simon, D L Conover

Study Type : Human Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)

This meta-analyses suggests that mobile phone use may be deleterious to sperm.

Pubmed Data : F1000Res. 2013 ;2:40. Epub 2013 Feb 12. PMID: **24327874**

Article Published Date : Jan 01, 2013

Authors : Madhukar Shivajirao Dama, M Narayana Bhat

Study Type : Meta Analysis
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This meta-analysis concludes that, based on the data available, mobile phone exposure negatively impacts sperm quality.

Pubmed Data : Environ Int. 2014 Sep ;70:106-12. Epub 2014 Jun 10. PMID: **24927498**

Article Published Date : Sep 01, 2014

Authors : Jessica A Adams, Tamara S Galloway, Debapriya Mondal, Sandro C Esteves, Fiona Mathews

Study Type : Meta Analysis
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This meta-analysis links mobile phone use and potential harmful effects on semen parameters.

Pubmed Data : Andrology. 2014 Jul ;2(4):491-501. Epub 2014 Apr 3. PMID: **24700791**

Article Published Date : Jul 01, 2014

Authors : K Liu, Y Li, G Zhang, J Liu, J Cao, L Ao, S Zhang

Study Type : Meta Analysis
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study demonstrates that radar radiation inflicts damage to male reproduction system and it is important to take protective measures.

Pubmed Data : Zhonghua Nan Ke Xue. 2003 Oct ;9(7):494-6, 500. PMID: **14628594**

Article Published Date : Oct 01, 2003

Authors : Xin Liu, Su-Wen Yan, Xiao-Ping Ding, Ning Zhang, Hai-Ou Lu, Jie Tang

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This study demonstrates the adverse effects of electromagnetic radiation on testicular parenchyma in rats.

Pubmed Data : J Toxicol Environ Health A. 2014 ;77(13):747-50. PMID: 24839928

Article Published Date : Jan 01, 2014

Authors : Viera Almášiová, Katarína Holovská, Viera Cigánková, Enikö Račeková, Kamila Fabianová, Marcela Martončíková

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Necrotic : CK(5) : AC(3)

Use of cell phones decrease the semen quality in men and is dependent on the duration of daily exposure to cell phones and independent of the initial semen quality

Pubmed Data : Fertil Steril. 2008 Jan ;89(1):124-8. Epub 2007 May 4. PMID: 17482179

Article Published Date : Jan 01, 2008

Authors : Ashok Agarwal, Fnu Deepinder, Rakesh K Sharma, Geetha Ranga, Jianbo Li

Study Type : Human Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation.

Pubmed Data : Fertil Steril. 2011 Nov 22. Epub 2011 Nov 22. PMID: 22112647

Article Published Date : Nov 22, 2011

Authors : Conrado Avendaño, Ariela Mata, César A Sanchez Sarmiento, Gustavo F Doncel

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Laptop Computer Use : CK(20) : AC(2), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Laptop computers : CK(20) : AC(2)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Sympathetic Nervous System: Over-Activity (AC 1) (CK 10)

Proximity to mobile phone base stations may have an adverse effect on stress levels.

Pubmed Data : Indian J Occup Environ Med. 2009 Dec ;13(3):141-5. PMID: 20442833

Article Published Date : Dec 01, 2009

Authors : Christoph Augner, Gerhard W Hacker

Study Type : Human Study
Additional Links
Diseases : Sympathetic Nervous System: Over-Activity : CK(10) : AC(1)
Additional Keywords : Sympathetic Nervous System: Over-Activity : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Testicular Diseases (AC 1) (CK 2)

A Traditional Chinese Medicine herbal formulation, Liu Wei Di Huang Wan, improves cell phone radiation-induced oxidative damage and cell apoptosis in rat testes.

Pubmed Data : Zhonghua Nan Ke Xue. 2015 Aug ;21(8):737-41. PMID: 26442304

Article Published Date : Aug 01, 2015

Authors : Hui-rong Ma, Xiao-hui Cao, Xue-lian Ma, Jin-jin Chen, Jing-wei Chen, Hui Yang, Yun-xiao Liu

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Testicular Diseases : CK(46) : AC(19)
Additional Keywords : Testicular Diseases : CK(46) : AC(19) , Chinese Herbs : CK(6) : AC(2) , Chinese Traditional Medicine : CK(1) : AC(1), Phytotherapy : CK(2309) : AC(597) , Traditional Chinese Medicine : CK(22) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Thyroid Cancer (AC 1) (CK 10)

Increase in thyroid cancer incidence cannot be attributed to better diagnostic procedures and the role of both ionizing and non-ionizing radiation should be further studied.

Pubmed Data : BMC Cancer. 2016 07 7 ;16:426. Epub 2016 Jul 7. PMID: 27388603

Article Published Date : Jan 07, 2016

Authors : Michael Carlberg, Lena Hedendahl, Mikko Ahonen, Tarmo Koppel, Lennart Hardell

Study Type : Human Study
Additional Links
Diseases : Thyroid Cancer : CK(237) : AC(55)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Thyroid Diseases (AC 1) (CK 10)

In subjects with occupational mobile phone conversation

time of more than 33 hours a month, there is a statistically significant greater prevalence of low thyroid stimulating hormone levels.

Pubmed Data : Int J Immunopathol Pharmacol. 2004 May-Aug;17(2 Suppl):31-6. PMID: 15345189

Article Published Date : May 01, 2004

Authors : A Bergamaschi, A Magrini, G Ales, L Coppeta, G Somma

Study Type : Human Study
Additional Links
Diseases : Thyroid Diseases : CK(253) : AC(34)
Additional Keywords : Thyroid Diseases : CK(253) : AC(34)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

Thyroid Dysfunction (AC 1) (CK 10)

It seems that minor degrees of thyroid dysfunction with a compensatory rise in TSH may occur following excessive use of mobile phones.

Pubmed Data : Oman Med J. 2009 Oct ;24(4):274-8. PMID: 22216380

Article Published Date : Oct 01, 2009

Authors : Seyed Mortavazi, Asadollah Habib, Amir Ganj-Karami, Razieh Samimi-Doost, Atefe Pour-Abedi, Ali Babaie

Study Type : Human Study
Additional Links
Diseases : Thyroid Dysfunction : CK(10) : AC(1)
Additional Keywords : Thyroid Dysfunction : CK(10) : AC(1) , Thyroid Dysfunction : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Tinnitus (AC 5) (CK 41)

Mobile phone use should be included in future investigations as a potential risk factor for developing tinnitus.

Pubmed Data : Occup Environ Med. 2010 Dec ;67(12):804-8. Epub 2010 Jun 23. PMID: 20573849

Article Published Date : Dec 01, 2010

Authors : Hans-Peter Hutter, Hanns Moshammer, Peter Wallner, Monika Cartellieri, Doris-Maria Denk-Linnert, Michaela Katzinger, Klaus Ehrenberger, Michael Kundi

Study Type : Human Study
Additional Links
Diseases : Tinnitus : CK(226) : AC(28)
Additional Keywords : Tinnitus : CK(226) : AC(28)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Several factors related to mobile phone use are associated with tinnitus, depressed feelings, and sleepiness at school in adolescents.

Pubmed Data : Environ Health. 2013 Oct 22 ;12:90. Epub 2013 Oct 22. PMID: 24148357

Article Published Date : Oct 22, 2013

Authors : Mary Redmayne, Euan Smith, Michael J Abramson

Study Type : Human Study
Additional Links
Diseases : Headaches : CK(10) : AC(1) , Tinnitus : CK(226) : AC(28)
Additional Keywords : Adolescent Development : CK(2) : AC(1) , Adolescent Development : CK(2) : AC(1), Adolescent Development : CK(2) : AC(1) , Adolescent Development : CK(2) : AC(1) , Adolescent Development : CK(2) : AC(1), Adolescent Development : CK(2) : AC(1) , Adolescent Development : CK(2) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This review concludes that there is sufficient evidence to warrant cautionary use of mobile phones to prevent damage to the auditory pathway and the onset or

worsening of tinnitus.

Pubmed Data : Braz J Otorhinolaryngol. 2016 Jan-Feb;82(1):97-104. Epub 2015 Sep 21. PMID: 26602000

Article Published Date : Jan 01, 2016

Authors : Luisa Nascimento Medeiros, Tanit Ganz Sanchez

Study Type : Review
Additional Links
Diseases : Tinnitus : CK(226) : AC(28)
Additional Keywords : Tinnitus : CK(226) : AC(28)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

This study does not demonstrate a connection between predicted electromagnetic field exposure and tinnitus or non-specific symptoms.

Pubmed Data : Environ Int. 2012 Jan ;38(1):29-36. Epub 2011 Sep 10. PMID: 21982030

Article Published Date : Jan 01, 2012

Authors : Patrizia Frei, Evelyn Mohler, Charlotte Braun-Fahrländer, Jürg Fröhlich, Georg Neubauer, Martin Röösli,

Study Type : Human Study
Additional Links
Diseases : Tinnitus : CK(226) : AC(28)
Additional Keywords : Tinnitus : CK(226) : AC(28)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

This study indicates that tinnitus is associated with subjective electromagnetic hypersensitivity.

Pubmed Data : PLoS One. 2009 ;4(3):e5026. Epub 2009 Mar 27. PMID: 19325894

Article Published Date : Jan 01, 2009

Authors : Michael Landgrebe, Ulrich Frick, Simone Hauser, Goeran Hajak, Berthold Langguth

Study Type : Human Study
Additional Links
Diseases : Tinnitus : CK(226) : AC(28)
Additional Keywords : Tinnitus : CK(226) : AC(28) , Tinnitus : CK(226) : AC(28)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Vision Disorders (AC 2) (CK 20)

Mobile phone use may cause blurred vision and increase eye secretion, inflammation, and lacrimation.

Pubmed Data : Pathol Biol (Paris). 2005 Mar ;53(2):88-91. PMID: 15708652

Article Published Date : Mar 01, 2005

Authors : Hasan H Balik, Dilek Turgut-Balik, Kemal Balikci, I Cem Ozcan

Study Type : Human Study
Additional Links
Diseases : Eye Abnormalities : CK(10) : AC(1) , Vision Disorders : CK(71) : AC(8)
Additional Keywords : Vision Disorders : CK(71) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

This study showed an association between the use of mobile phones and hearing and vision complaints.

Pubmed Data : Int J Occup Med Environ Health. 2005 ;18(1):53-7. PMID: 16052891

Article Published Date : Jan 01, 2005

Authors : Sultan A Meo, Abdul M Al-Drees

Study Type : Human Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1) , Vision Disorders : CK(71) : AC(8)
Additional Keywords : Vision Disorders : CK(71) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Category : Adverse Pharmacological

Actions

Abortive (AC 3) (CK 14)

Intermittent mobile phone exposure results in a significant increase in embryonic mortality and cardiac deformity in chicken embryos.

Pubmed Data : Anat Histol Embryol. 2016 Jun ;45(3):197-208. Epub 2015 Jul 14. PMID: 26171674

Article Published Date : Jun 01, 2016

Authors : W Ye, F Wang, W Zhang, N Fang, W Zhao, J Wang

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3) , Cardiotoxic : CK(810) : AC(124) , Genotoxic : CK(201) : AC(78)

Mobile phone use during pregnancy may be related to spontaneous abortion.

Pubmed Data : J Environ Health Sci Eng. 2015 ;13:34. Epub 2015 Apr 21. PMID: 25937931

Article Published Date : Jan 01, 2015

Authors : Fatemeh Shamsi Mahmoudabadi, Saeideh Ziaei, Mohammad Firoozabadi, Anoshirvan Kazemnejad

Study Type : Human Study
Additional Links
Diseases : Abortion: Spontaneous : CK(214) : AC(30) , Pregnancy Complications : CK(193) : AC(24)
Additional Keywords : Pregnancy Complications : CK(193) : AC(24) , Pregnancy Complications : CK(193) : AC(24), Pregnancy Complications : CK(193) : AC(24) , Pregnancy Complications : CK(193) : AC(24), Pregnancy Complications : CK(193) : AC(24) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3)

The results of this study indicate that radiofrequency radiation or methanol on day 9 increased the incidence of resorbed fetuses.

Pubmed Data : Int J Toxicol. 2001 Mar-Apr;20(2):89-100. PMID: 11354470

Article Published Date : Mar 01, 2001

Authors : B K Nelson, D L Snyder, P B Shaw

Study Type : Animal Study
Additional Links
Diseases : Miscarriage : CK(323) : AC(37)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3)

Amyloid-Beta Upregulation (AC 2) (CK 3)

High long-term exposure to extremely low frequency and radiofrequency electromagnetic fields may lead to breast cancer and Alzheimer's disease through amyloid-beta upregulation and melatonin downregulation.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):149-56. Epub 2009 Mar 10. PMID: 19278839

Article Published Date : Aug 01, 2009

Authors : Zoreh Davanipour, Eugene Sobel

Study Type : Review
Additional Links
Diseases : , Alzheimer's Disease : CK(2442) : AC(871) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Amyloid-Beta Upregulation : CK(3) : AC(2) , Carcinogenic

(suspected) : CK(21) : AC(3), Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

The implications for mobile phone radiation exposure through possible ferromagnetic transduction may be investigated by using the magnetite present in C. elegans as an experimental model.

Pubmed Data : Proc Biol Sci. 2004 Dec 7 ;271 Suppl 6:S436-9. PMID: 15801597

Article Published Date : Dec 07, 2004

Authors : Charles G Cranfield, Adam Dawe, Vassil Karloukovski, Rafal E Dunin-Borkowski, David de Pomerai, Jon Dobson

Study Type : Animal Study
Additional Links
Diseases : Alzheimer's Disease : CK(2442) : AC(871)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Amyloid-Beta Upregulation : CK(3) : AC(2)

Anti-Androgenic (AC 2) (CK 4)

Male rats exposed to 1800 MHz electromagnetic fields exhibit circadian alterations including lowered sperm count and motility.

Pubmed Data : Chronobiol Int. 2014 Feb ;31(1):123-33. Epub 2013 Oct 11. PMID: 24117058

Article Published Date : Feb 01, 2014

Authors : Fenju Qin, Jie Zhang, Honglong Cao, Weiqiang Guo, Lili Chen, Ouxi Shen, Jinpeng Sun, Cao Yi, Jianxiang Li, Jiajun Wang, Jian Tong

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Anti-Androgenic : CK(20) : AC(2)

Microwaves from mobile phone exposure induce morphological changes and apoptosis in rabbit epididymis.

Pubmed Data : Andrologia. 2015 Aug ;47(6):700-5. Epub 2014 Jul 25. PMID: 25060044

Article Published Date : Aug 01, 2015

Authors : E Azadi Oskouyi, F Rajaei, A Safari Variani, M R Sarokhani, A Javadi

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194), Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Anti-Androgenic : CK(20) : AC(2), Apoptotic : CK(8) : AC(7)

Anxiogenic (AC 2) (CK 4)

Extremely low frequency electromagnetic field induces anxiety-like behavior which is mediated by oxidative stress.

Pubmed Data : Environ Sci Pollut Res Int. 2017 Sep ;24(27):21693-21699. Epub 2017 Jul 29. PMID: 28756602

Article Published Date : Sep 01, 2017

Authors : Natasa Z Djordjevic, Milica G Paunović, Aleksandar S Peulić

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Anxiogenic : CK(6) : AC(3) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields may

induce anxiety-like behavior and oxidative stress.

Pubmed Data : Behav Brain Res. 2019 02 1 ;359:630-638. Epub 2018 Oct 2. PMID: 30290199

Article Published Date : Jan 01, 2019

Authors : Seyed Asaad Karimi, Iraj Salehi, Teimor Shykhi, Samad Zare, Alireza Komaki

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Anxiogenic : CK(6) : AC(3) , Oxidant : CK(122) : AC(48)

Apoptotic (AC 50) (CK 142)

1.8 GHz EMF may inhibit ciliary beat frequency via a protein kinase C-dependent mechanism.

Pubmed Data : Laryngoscope. 2013 Feb ;123(2):315-20. Epub 2012 Oct 11. PMID: 23060235

Article Published Date : Feb 01, 2013

Authors : Seung Min In, Hyun Jun Kim, Rae Woong Park, Woojae Kim, Yoon-Myoung Gimm, Ikmo Park, Sungpyo Hong, Jeong Joo Hong, Jeong Hyun Oh, Hison Kahng, Eun Young Park

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

1800 MHz increases oxidative stress and apoptosis in mouse-derived sperm cells, but N-acetyl cysteine and autophagy prevented EMF-associated cell death.

Pubmed Data : Toxicol Lett. 2014 Aug 4 ;228(3):216-24. Epub 2014 May 9. PMID: 24813634

Article Published Date : Aug 04, 2014

Authors : Kaijun Liu, Guowei Zhang, Zhi Wang, Yong Liu, Jianyun Dong, Xiaomei Dong, Jinyi Liu, Jia Cao, Lin Ao, Shaoxiang Zhang

Study Type : In Vitro Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)

Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Additional Keywords : Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

1950 MHz induces mitochondrial damage and apoptosis in astrocytes.

Pubmed Data : PLoS One. 2012 ;7(8):e42332. Epub 2012 Aug 1. PMID: 22870319

Article Published Date : Jan 01, 2012

Authors : Yu-xiao Liu, Jun-li Tai, Guo-qing Li, Zhi-wen Zhang, Jing-hui Xue, Hong-sheng Liu, Heng Zhu, Ji-de Cheng, Yuan-Ling Liu, An-ming Li, Yi Zhang

Study Type : Human In Vitro
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

2.1 GHz microwave radiation decreases cell viability, reduces mitochondrial membrane potential, and results in cell death in breast fibroblast cells in vitro.

Pubmed Data : Cell Biochem Biophys. 2013 ;67(3):1371-8. PMID: 23723005

Article Published Date : Jan 01, 2013

Authors : Meric Arda Esmekaya, Nesrin Seyhan, Handan Kayhan, Mehmet Zahid Tuysuz, Ayşe Canseven Kurşun, Münci Yağcı

Study Type : Human In Vitro
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4)

Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53)

2.45 GHz stimulate apoptosis in Chinese hamster cells.

Pubmed Data : Mutat Res. 2011 Nov 1 ;716(1-2):1-9. Epub 2011 Jul 30. PMID: 21827772

Article Published Date : Nov 01, 2011

Authors : Michela Ballardin, Ignazia Tusa, Nunzia Fontana, Agostino Monorchio, Chiara Pelletti, Alessandro Rogovich, Roberto Barale, Roberto Scarpato

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

3G cell phone exposure impacts brain function by inducing oxidative stress, DNA fragmentation, and apoptosis through the p38 MAPK pathway.

Pubmed Data : Cell Biochem Biophys. 2014 Mar ;68(2):347-58. PMID: 23949848

Article Published Date : Mar 01, 2014

Authors : Kavindra Kumar Kesari, Ramovatar Meena, Jayprakash Nirala, Jitender Kumar, H N Verma

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136), Neurologic Disorders : CK(66) : AC(30) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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600 MHz electromagnetic field exposure induces apoptosis in various organs of rabbits, however, this effect is seemingly individual and time-dependent.

Pubmed Data : Radiat Environ Biophys. 2005 May ;44(1):51-9. Epub 2005 Apr 6. PMID: 15812656

Article Published Date : May 01, 2005

Authors : Patrizia Tarantino, Remigio Lanubile, Giovanni Lacalandra, Luigi Abbro, Luciana Dini

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

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900 MHz electromagnetic fields reduces cell viability and proliferation.

Pubmed Data : Int J Prev Med. 2018 ;9:51. Epub 2018 Jun 19. PMID: 30034669

Article Published Date : Jan 01, 2018

Authors : Daryoush Shahbazi-Gahrouei, Batool Hashemi-Beni, Alireza Moradi, Maryam Aliakbari, Saghar Shahbazi-Gahrouei

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53)

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900 and 1800 MHz induces abnormal cell death in Drosophilia egg chambers.

Pubmed Data : Mutat Res. 2007 Jan 10 ;626(1-2):69-78. Epub 2006 Oct 11. PMID: 17045516

Article Published Date : Jan 10, 2007

Authors : Dimitris J Panagopoulos, Evangelia D Chavdoula, Ioannis P Nezis, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78)

Caspase-3 and p38MAPK gene expression were significantly upregulated in the ocular tissues following exposure to RF-EMF.

Pubmed Data : Bratisl Lek Listy. 2018 ;119(9):588-592. PMID: 30226071

Article Published Date : Dec 31, 2017

Authors : E D Eker, B Arslan, M Yildirim, A Akar, N Aras

Study Type : Animal Study, In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)

Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Cell phone radiation leads to neuronal loss in 8-week old rats.

Pubmed Data : Brain Res. 2015 Oct 22 ;1624:232-238. Epub 2015 Jul 31. PMID: 26239913

Article Published Date : Oct 22, 2015

Authors : Arzu Şahin, Ali Aslan, Orhan Baş, Ayşe İkinci, Cansu Özyılmaz, Osman Fikret Sönmez, Serdar Çolakoğlu, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Children : CK(10) : AC(1) , Children : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

Electromagnetic field exposure induces caspase 3 activation, a protein involved in apoptosis as well as other cellular processes.

Pubmed Data : Radiat Res. 2008 Sep ;170(3):327-34. PMID: 18763855

Article Published Date : Sep 01, 2008

Authors : R Palumbo, F Brescia, D Capasso, A Sannino, M Sarti, M Capri, E Grassilli, M R Scarfì

Study Type : Human In Vitro
Additional Links
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450), Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Electromagnetic field exposure may induce DNA damage, stimulate inflammation, and impact cell proliferation and differentiation.

Pubmed Data : Electromagn Biol Med. 2019 Aug 26:1-18. Epub 2019 Aug 26. PMID: 31450976

Article Published Date : Aug 26, 2019

Authors : Henry Lai

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Cell Cycle Inhibitor : CK(3) : AC(3) , Cytotoxic : CK(89) : AC(53) , Immunotoxic : CK(338) : AC(66) , Inflammatory : CK(312) : AC(92)

Electromagnetic fields enhance the apoptotic effect of UV radiation on Saccharomyces cerevisiae cells.

Pubmed Data : Bioelectromagnetics. 2004 Feb ;25(2):127-33. PMID: 14735563

Article Published Date : Feb 01, 2004

Authors : Ari Markkanen, Piia Penttinen, Jonne Naarala, Jukka Pelkonen, Ari-Pekka Sihvonen, Jukka Juutilainen

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Electromagnetic pulse radiation induces oxidative stress and apoptosis, leading to brain damage in rats.

Pubmed Data : PLoS One. 2014 ;9(3):e91019. Epub 2014 Mar 10. PMID: 24614080

Article Published Date : Jan 01, 2014

Authors : Bin Deng, Hao Xu, Jin Zhang, Jin Wang, Li-Chun Han, Li-Ya Li, Guang-Li Wu, Yan-Ning Hou, Guo-Zhen Guo, Qiang Wang, Han-Fei Sang, Li-Xian Xu

Study Type : Animal Study
Additional Links
Diseases : Brain Damage : CK(93) : AC(44) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation from Wi-Fi or cell phones placed within 10cm of cell cultures results in increased oxidative stress and apoptosis.

Pubmed Data : Biochim Biophys Acta. 2015 Oct ;1848(10 Pt B):2756-65. Epub 2015 Feb 19. PMID: 25703814

Article Published Date : Oct 01, 2015

Authors : Bilal Çiğ, Mustafa Nazıroğlu

Study Type : Human In Vitro
Additional Links

Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Epidemiological studies document an increased incidence of cancers among long-term users of mobile phones which is supported by mechanistic evidence

Pubmed Data : Exp Oncol. 2010 Jul ;32(2):54-60. PMID: 20693976

Article Published Date : Jul 01, 2010

Authors : I Yakymenko, E Sidorik

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Oxidant : CK(122) : AC(48)

Exposure to static magnetic fields induced hepatocyte apoptosis through a caspase-independent pathway involving mitochondrial apoptosis-inducing factor but not in the brain.

Pubmed Data : Environ Sci Pollut Res Int. 2015 Oct ;22(20):16060-6. Epub 2015 Jun 12. PMID: 26062464

Article Published Date : Oct 01, 2015

Authors : Soumaya Ghodbane, Mohamed Ammari, Aida Lahbib, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Hepatotoxic : CK(335) : AC(96) ,

Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Extremely low frequency electromagnetic fields increase oxidative stress and induces apoptosis. Incubation with N-acetylcysteine and glutathione reduces oxidative damage and prevents cell death.

Pubmed Data : Mol Neurobiol. 2016 08 ;53(6):4247-4260. Epub 2015 Jul 30. PMID: 26223801

Article Published Date : Jan 01, 2016

Authors : Barbara Benassi, Giuseppe Filomeni, Costanza Montagna, Caterina Merla, Vanni Lopresto, Rosanna Pinto, Carmela Marino, Claudia Consales

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Extremely low frequency-magnetic fields alters caspase activity in rat testes.

Pubmed Data : Int J Radiat Biol. 2013 Dec ;89(12):1053-60. Epub 2013 Jul 15. PMID: 23786626

Article Published Date : Dec 01, 2013

Authors : Mehmet Zulkuf Akdag, Suleyman Dasdag, Ali Kemal Uzunlar, Engin Ulukaya, Arzu Yilmaztepe Oral, Necla Çelik, Feyzan Akşen

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

GSM 900 and 1800 MHz EMF impaired reproductive capacity by Drosophilia melanogaster that diminished with distance and decreasing intensities.

Pubmed Data : Int J Radiat Biol. 2010 May ;86(5):345-57. PMID: 20397839

Article Published Date : May 01, 2010

Authors : Dimitris J Panagopoulos, Evangelia D Chavdoula, Lukas H Margaritis

Study Type : Animal Study
Additional Links

Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Gadolinium induces DNA damage which is enhanced by extremely low frequency electromagnetic fields.

Pubmed Data : Drug Chem Toxicol. 2014 Oct ;37(4):440-7. Epub 2014 Jan 30. PMID: 24479558

Article Published Date : Oct 01, 2014

Authors : Seunghyun Cho, Younghyun Lee, Sunyeong Lee, Young Joo Choi, Hai Won Chung

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Gadolinium : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Long duration exposure to 900 MHz EMF leads to decreases the number of Purkinje cell in the female rat cerebellum.

Pubmed Data : Brain Res. 2010 Oct 14 ;1356:95-101. Epub 2010 Aug 4. PMID: 20691167

Article Published Date : Oct 14, 2010

Authors : Osman Fikret Sonmez, Ersan Odaci, Orhan Bas, Süleyman Kaplan

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

Long-term exposure to Wi-Fi radiation in rats decreases sperm parameters in a time-dependent manner.

Pubmed Data : Cell J. 2015 ;17(2):322-31. Epub 2015 Jul 11. PMID: 26199911

Article Published Date : Jan 01, 2015

Authors : Saeed Shokri, Aiob Soltani, Mahsa Kazemi, Dariush Sardari, Farshid Babapoor Mofrad

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) :

AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Long-term exposure to cell phone radiation increases apoptosis and oxidative stress while depleting antioxidant activity in the brains of young and adult rats.

Pubmed Data : Cell Biochem Biophys. 2014 Nov ;70(2):845-55. PMID: **24801773**

Article Published Date : Nov 01, 2014

Authors : Tarek K Motawi, Hebatallah A Darwish, Yasser M Moustafa, Mohammed M Labib

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Male rat testes exposed to a 900 MHz electromagnetic field exhibited altered sperm quality and biochemical characteristics.

Pubmed Data : Biotech Histochem. 2016 ;91(1):9-19. Epub 2015 Oct 15. PMID: **26472053**

Article Published Date : Jan 01, 2016

Authors : E Odacı, H Hancı, E Yuluğ, S Türedi, Y Aliyazıcıoğlu, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Apoptotic : CK(5217) : AC(3846) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Microscopic analyses reveal cochlear apoptosis and necrosis associated with exposure to both 900 MHz and 1800 MHz electromagnetic fields in rats.

Pubmed Data : J Laryngol Otol. 2014 May ;128(5):400-5. Epub 2014 May 1. PMID: 24784924

Article Published Date : May 01, 2014

Authors : E Seckin, F Suren Basar, S Atmaca, F F Kaymaz, A Suzer, A Akar, E Sunan, M Koyuncu

Study Type : Animal Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Necrotic : CK(5) : AC(3)

Microwave exposure decreases mitochondrial membrane potential, increases DNA fragmentation, and induces apoptosis via a caspase-3-dependent pathway in vitro.

Pubmed Data : Int J Med Sci. 2014 ;11(5):426-35. Epub 2014 Mar 9. PMID: 24688304

Article Published Date : Jan 01, 2014

Authors : Hongyan Zuo, Tao Lin, Dewen Wang, Ruiyun Peng, Shuiming Wang, Yabing Gao, Xinping Xu, Yang Li, Shaoxia Wang, Li Zhao, Lifeng Wang, Hongmei Zhou

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Mitochondria : CK(3) : AC(3), Mitochondria : CK(3) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Genotoxic : CK(201) : AC(78), Neurotoxic : CK(1458) : AC(323)

Microwave radiation exerts antiproliferative and apoptotic effects on a spermatocyte cell line in vitro.

Pubmed Data : Zhonghua Nan Ke Xue. 2014 Mar ;20(3):201-6. PMID: 24738454

Article Published Date : Mar 01, 2014

Authors : Lei Xue, Shui-Ming Wang, Hao-Yu Chen, Rui-Yun Peng, Hong-Yan Zuo, Li-Feng Wang, Li Zhao, Shao-Xia Wang

Study Type : In Vitro Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Microwave radiation upregulates multiple stress and apoptosis-related genes in human retina pigment epithelial cells.

Pubmed Data : Zhonghua Yu Fang Yi Xue Za Zhi. 2002 Sep ;36(5):291-4. PMID: **12411184**

Article Published Date : Sep 01, 2002

Authors : Xiuhong Liu, Hong Shen, Yongliang Shi, Jingyuan Chen, Yaoming Chen, Ailing Ji

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53)

Microwaves from mobile phone exposure induce morphological changes and apoptosis in rabbit epididymis.

Pubmed Data : Andrologia. 2015 Aug ;47(6):700-5. Epub 2014 Jul 25. PMID: **25060044**

Article Published Date : Aug 01, 2015

Authors : E Azadi Oskouyi, F Rajaei, A Safari Variani, M R Sarokhani, A Javadi

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194), Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Anti-Androgenic : CK(20) : AC(2), Apoptotic : CK(8) : AC(7)

Microwaves induce apoptosis in human cells at non-thermal levels.

Pubmed Data : Bioelectrochemistry. 2000 Jun ;51(2):157-61. PMID: **10910164**

Article Published Date : Jun 01, 2000

Authors : A Peinnequin, A Piriou, J Mathieu, V Dabouis, C Sebbah, R Malabiau, J C Debouzy

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Millimeter waves enhance aerobic glycolysis in human erythromyeloid leukemia cell and have an antiproliferative effect.

Pubmed Data : Bioelectrochemistry. 2007 May ;70(2):214-20. Epub 2006 Jul 12. PMID: **16959547**

Article Published Date : May 01, 2007

Authors : A Beneduci, G Chidichimo, S Tripepi, E Perrotta, F Cufone

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Mobile phone electromagnetic field increases Bcl-2 in rat brain tissue and has an effect on apoptosis.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2014 ;18(7):992-1000. PMID: **24763879**

Article Published Date : Jan 01, 2014

Authors : A Yilmaz, N Yilmaz, Y Serarslan, M Aras, M Altas, T Özgür, F Sefil

Study Type : Animal Study
Additional Links
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Mobile phone radiation induces oxidative stress and apoptosis in the rat endometrium and is ameliorated by vitamin C and E.

Pubmed Data : Adv Ther. 2006 Nov-Dec;23(6):957-73. PMID: 17276964

Article Published Date : Nov 01, 2006

Authors : Baha Oral, Mehmet Guney, Fehmi Ozguner, Nermin Karahan, Tamer Mungan, Selcuk Comlekci, Gokhan Cesur

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792) , Vitamin E : CK(2077) : AC(371)
Diseases : Infertility: Female : CK(281) : AC(51) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932) , Antioxidant : CK(9) : AC(4) , Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Mobile phone radiation reduces sperm motility and viability, increases sperm head defects, and induces early apoptosis of sperm cells in vitro.

Pubmed Data : Zhonghua Nan Ke Xue. 2015 Jun ;21(6):515-20. PMID: 26242041

Article Published Date : Jun 01, 2015

Authors : Dong Wang, Bo Li, Yuan Liu, Ye-fei Ma, Shu-qiang Chen, Hui-jun Sun, Jie Dong, Xu-hui Ma, Jing Zhou, Xiao-hong Wang

Study Type : Human In Vitro
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Oxidative stress and hydrogen peroxide work synergistically to stimulate apoptosis.

Pubmed Data : Acta Biol Hung. 2010 Jun ;61(2):158-67. PMID: 20519170

Article Published Date : Jun 01, 2010

Authors : Ayse Inhan Garip, Z Akan

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Pulse modulated 900 MHz radiation inhibits thyroid hormone secretion and stimulates thyroid cell apoptosis.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1106-16. Epub 2010 Sep 1. PMID: 20807179

Article Published Date : Dec 01, 2010

Authors : Meriç Arda Eşmekaya, Nesrin Seyhan, Suna Ömeroğlu

Study Type : Animal Study
Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Additional Keywords : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Endocrine Disruptor: Thyroid : CK(73) : AC(21), Thyroid Suppressive : CK(18) : AC(5)

Radiofrequency electromagnetic radiation induces apoptosis and oxidative stress in Zebrafish embryo by a non-thermal mechanism

Pubmed Data : Ecotoxicol Environ Saf. 2018 Jun 15 ;154:268-279. Epub 2018 Feb 22. PMID: 29477917

Article Published Date : Jun 15, 2018

Authors : Chiara Carla Piccinetti, Alfredo De Leo, Gloria Cosoli, Lorenzo Scalise, Basilio Randazzo, Graziano Cerri, Ike Olivotto

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Radiofrequency radiation impairs cell proliferation.

Pubmed Data : J Cell Physiol. 2007 Dec ;213(3):759-67. PMID: 17559061

Article Published Date : Dec 01, 2007

Authors : M Buttiglione, L Roca, E Montemurno, F Vitiello, V Capozzi, G Cibelli

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Rats born to mothers who were exposed to 900 MHz electromagnetic fields during pregnancy exhibited kidney defects and apoptosis in kidney tissue.

Pubmed Data : Ren Fail. 2015 Mar ;37(2):305-9. Epub 2014 Nov 19. PMID: **25691088**

Article Published Date : Mar 01, 2015

Authors : Recep Bedir, Levent Tumkaya, İbrahim Şehitoğlu, Yıldıray Kalkan, Adnan Yilmaz, Osman Zikrullah Şahin

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64)
Additional Keywords : Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Renotoxic : CK(26) : AC(9)

Rats exposed to mobile phone radiation in utero have elevated biomarkers of oxidative stress and histopathological changes in heart tissue.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):390-7. Epub 2014 Aug 28. PMID: **25166431**

Article Published Date : Jan 01, 2015

Authors : Sibel Türedi, Hatice Hancı, Zehra Topal, Deniz Ünal, Tolga Mercantepe, İlyas Bozkurt, Haydar Kaya, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Selenium prevents oxidative stress and apoptosis associated with mobile phone exposure.

Pubmed Data : Biol Trace Elem Res. 2014 Aug ;160(2):285-93. Epub 2014 Jun 27. PMID: **24965080**

Article Published Date : Aug 01, 2014

Authors : Mehmet Cemal Kahya, Mustafa Nazıroğlu, Bilal Çiğ

Study Type : Human In Vitro
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932) , Antioxidant : CK(9) : AC(4) , Cytoprotective : CK(190) : AC(94)
Additional Keywords : Cytoprotective : CK(190) : AC(94) , Cytoprotective : CK(190) : AC(94) , Cytoprotective : CK(190) : AC(94) , Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

These results suggest that direct chronic exposure to mobile phone caused severe biochemical and histopathological changes in the rat brain.

Pubmed Data : J Chem Neuroanat. 2016 12 ;78:10-19. Epub 2016 Jul 26. PMID: **27474378**

Article Published Date : Jan 12, 2016

Authors : Shaymaa Hussein, Abdel-Aleem El-Saba, Mona K Galal

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Cyclooxygenase 2 Inhibitors : CK(1114) : AC(645) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Inflammatory : CK(312) : AC(92) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Neurotoxic : CK(1458) : AC(323) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

These results support that long-term exposure to a GSM-

like 2100MHz electromagnetic fields causes an increase in neuronal degeneration and apoptosis in the auditory system.

Pubmed Data : Braz J Otorhinolaryngol. 2017 Nov - Dec;83(6):691-696. Epub 2016 Nov 5. PMID: 27865708

Article Published Date : Dec 01, 2017

Authors : Metin Çeliker, Abdulkadir Özgür, Levent Tümkaya, Suat Terzi, Mustafa Yılmaz, Yıldıray Kalkan, Ender Erdoğan

Study Type : Animal Study
Additional Links
Diseases : Auditory Diseases : CK(3) : AC(2)
Additional Keywords : Auditory Diseases : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

This animal study suggests RF-EMF radiation stresses the brain.

Pubmed Data : Korean J Physiol Pharmacol. 2017 Mar ;21(2):179-188. Epub 2017 Feb 21. PMID: 28280411

Article Published Date : Mar 01, 2017

Authors : Ju Hwan Kim, Da-Hyeon Yu, Hak Rim Kim

Study Type : Animal Study
Additional Links
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

This review outlines some of the known biological effects of static magnetic fields.

Pubmed Data : Biomed Res Int. 2013 ;2013:602987. Epub 2013 Aug 6. PMID: 24027759

Article Published Date : Jan 01, 2013

Authors : Soumaya Ghodbane, Aida Lahbib, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

This review proposes the possible mechanism of germ cell apoptosis in testes induced by extremely low frequency magnetic fields.

Pubmed Data : Biomed Res Int. 2014 ;2014:567183. Epub 2014 Jun 15. PMID: 25025060

Article Published Date : Jan 01, 2014

Authors : Sang-Kon Lee, Sungman Park, Yoon-Myoung Gimm, Yoon-Won Kim

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7)

Arthritic (AC 1) (CK 5)

Pulsed electromagnetic fields alter chondrocyte morphology.

Pubmed Data : Med Biol Eng Comput. 2007 Oct ;45(10):917-25. Epub 2007 Aug 14. PMID: 17701237

Article Published Date : Oct 01, 2007

Authors : M E Jahns, E Lou, N G Durdle, K Bagnall, V J Raso, D Cinats, R D C Barley, J Cinats, N M Jomha

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Arthritic : CK(10) : AC(1)

Blood Brain Barrier Injury (AC 6) (CK 14)

20 min of radiofrequency radiation exposure at 900 and 1,800 MHz increases the permeability of the blood brain barrier of male rats.

Pubmed Data : Electromagn Biol Med. 2009 ;28(2):215-22. PMID: 19811403]

Article Published Date : Jan 01, 2009

Authors : Bahriye Sirav, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8)

Activation of heat shock protein 27 pathway may be a mechanism that underpins the electromagnetic field-cancer connection.

Pubmed Data : Differentiation. 2002 May ;70(2-3):120-9. PMID: 12076339

Article Published Date : May 01, 2002

Authors : Dariusz Leszczynski, Sakari Joenväärä, Jukka Reivinen, Reetta Kuokka

Study Type : Human In Vitro
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8) , Carcinogenic (suspected) : CK(21) : AC(3)

Exposure to pulsed electromagnetic field results in changes to blood brain barrier permeability.

Pubmed Data : Biomed Environ Sci. 2012 Apr ;25(2):197-202. PMID: 22998827

Article Published Date : Apr 01, 2012

Authors : Ya Mei Zhang, Yan Zhou, Lian Bo Qiu, Gui Rong Ding, Xiao Feng Pang

Study Type : Animal Study
Additional Links
Additional Keywords : Blood Brain Barrier : CK(34) : AC(13) , Blood Brain Barrier : CK(34) : AC(13)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8)

Microwave radiation can increase the expression of aquaporin 4 in the rat hippocampus.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2009 Sep ;27(9):534-8. PMID: 20137298

Article Published Date : Sep 01, 2009

Authors : Xiang Li, Xiang-jun Hu, Rui-yun Peng, Ya-bing Gao, Shui-ming Wang, Li-feng Wang, Xin-ping Xu, Zhen-tao Su, Guo-shan Yang

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8) , Neurotoxic : CK(1458) : AC(323)

Microwave radiation may damage the blood brain barrier, according to this in vitro study.

Pubmed Data : Mol Neurobiol. 2015 Aug ;52(1):478-91. Epub 2014 Sep 9. PMID: 25195697

Article Published Date : Aug 01, 2015

Authors : Li-Feng Wang, Xiang Li, Ya-Bing Gao, Shui-Ming Wang, Li Zhao, Ji Dong, Bin-Wei Yao, Xin-Ping Xu, Gong-Min Chang, Hong-Mei Zhou, Xiang-Jun Hu, Rui-Yun Peng

Study Type : In Vitro Study
Additional Links
Additional Keywords : Blood Brain Barrier : CK(34) : AC(13) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8)

These results suggest that exposure to 0.9 and 1.8 GHz continuous wave radiofrequency radiation at levels below the international limits can affect the vascular permeability in the brain of male rats.

Pubmed Data : Electromagn Biol Med. 2011 Dec ;30(4):253-60. PMID: 22047463

Article Published Date : Dec 01, 2011

Authors : Bahriye Sirav, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8)

Carcinogen (AC 1) (CK 1)

Electromagnetic fields directly activate macrophages, stimulating elevated levels of free radical production. This may lead to downstream carcinogenic, genotoxic, and melatonin-depleting effects.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):83-92. PMID: 15352165

Article Published Date : Sep 01, 2004

Authors : Myrtill Simkó, Mats-Olof Mattsson

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogen : CK(61) : AC(12) , Genotoxic : CK(201) : AC(78) , Immunotoxic : CK(338) : AC(66) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Carcinogenic (AC 4) (CK 14)

916 MHz microwave radiation induces neoplastic transformation in cells.

Pubmed Data : Cell Mol Neurobiol. 2012 Mar 7. Epub 2012 Mar 7. PMID: 22395787

Article Published Date : Mar 07, 2012

Authors : Lei Yang, Dongmei Hao, Minglian Wang, Yi Zeng, Shuicai Wu, Yanjun Zeng

Study Type : In Vitro Study
Additional Links
Diseases : Cell-Phone and Computer Screen Radiotoxicity : CK(116) : AC(20) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144)

Exposure of quail embryos to 900 MHz results in an overproduction of free radicals and DNA damage.

Pubmed Data : Exp Oncol. 2013 Sep ;35(3):219-25. PMID: 24084462

Article Published Date : Sep 01, 2013

Authors : A Burlaka, O Tsybulin, E Sidorik, S Lukin, V Polishuk, S Tsehmistrenko, I Yakymenko

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

The proliferation of cellular antennas and other radiofrequency radiation (RFR) generating devices of the last decades has led to more and more concerns about the potential health effects from RFR exposure.

Pubmed Data : Int J Environ Res Public Health. 2019 Sep 12 ;16(18). Epub 2019 Sep 12. PMID: 31547363

Article Published Date : Sep 12, 2019

Authors : Andrea Vornoli, Laura Falcioni, Daniele Mandrioli, Luciano Bua, Fiorella Belpoggi

Study Type : Human Study
Additional Links
Diseases : Cancer : CK(4) : AC(3) , Infertility : CK(1359) : AC(316)
Additional Keywords : Infertility : CK(1359) : AC(316)

Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144)

This review discusses the use of systems biology in understanding the biological effects of electromagnetic fields, with particular focus on induction of genomic instability and cancer.

Pubmed Data : Genes (Basel). 2019 06 25 ;10(6). Epub 2019 Jun 25. PMID: 31242701

Article Published Date : Jan 25, 2019

Authors : Jonne Naarala, Mikko Kolehmainen, Jukka Juutilainen

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78)

Carcinogenic (suspected) (AC 65) (CK 430)

900 MHz electromagnetic fields may confer survival benefits to T-lymophoblastoid leukemia cells.

Pubmed Data : J Cell Physiol. 2004 Feb ;198(2):324-32. PMID: 14603534

Article Published Date : Feb 01, 2004

Authors : F Marinelli, D La Sala, G Cicciotti, L Cattini, C Trimarchi, S Putti, A Zamparelli, L Giuliani, G Tomassetti, Caterina Cinti

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

A shift towards left sided tumor location for all adult gliomas was noted in this study following the introduction of mobile phones.

Pubmed Data : Asian Pac J Cancer Prev. 2012 ;13(11):5857-63. PMID: 23317269

Article Published Date : Jan 01, 2012

Authors : Micha Barchana, Menahem Margaliot, Irena Liphshitz

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169), Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

A significantly increased risk for acoustic neuroma was identified for mobile phone use for more than 20 min/day on average that cannot be solely explained by recall bias.

Pubmed Data : Bioelectromagnetics. 2011 Feb ;32(2):85-93. Epub 2010 Oct 28. PMID: 21225885

Article Published Date : Feb 01, 2011

Authors : Yasuto Sato, Suminori Akiba, Osami Kubo, Naohito Yamaguchi

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4)
Additional Keywords : RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Activation of heat shock protein 27 pathway may be a mechanism that underpins the electromagnetic field-cancer connection.

Pubmed Data : Differentiation. 2002 May ;70(2-3):120-9. PMID: 12076339

Article Published Date : May 01, 2002

Authors : Dariusz Leszczynski, Sakari Joenväärä, Jukka Reivinen, Reetta Kuokka

Study Type : Human In Vitro
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8) , Carcinogenic (suspected) : CK(21) : AC(3)

Animal studies demonstrate that exposure to pulsed static and extremely low frequency magnetic fields reduces melatonin levels.

Pubmed Data : Rev Environ Health. 1994 Jul-Dec;10(3-4):171-86. PMID: **7724876**

Article Published Date : Jul 01, 1994

Authors : R J Reiter

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Melatonin Interference : CK(2) : AC(2)

Cell-specific redox may explain the differential effects of electromagnetic fields.

Pubmed Data : Curr Med Chem. 2007 ;14(10):1141-52. PMID: **17456027**

Article Published Date : Jan 01, 2007

Authors : Myrtill Simkó

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

Decreased survival of glioma cases is associated with long-term and high cumulative use of mobile phones.

Pubmed Data : Neuroepidemiology. 2013 ;40(2):101-8. Epub 2012 Oct 24. PMID: **23095687**

Article Published Date : Jan 01, 2013

Authors : Lennart Hardell, Michael Carlberg

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioblastoma : CK(398) : AC(193)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Electromagnetic field exposure may induce DNA damage, stimulate inflammation, and impact cell proliferation and differentiation.

Pubmed Data : Electromagn Biol Med. 2019 Aug 26:1-18. Epub 2019 Aug 26. PMID: **31450976**

Article Published Date : Aug 26, 2019

Authors : Henry Lai

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Cell Cycle Inhibitor : CK(3) : AC(3) , Cytotoxic : CK(89) : AC(53) , Immunotoxic : CK(338) : AC(66) , Inflammatory : CK(312) : AC(92)

Electromagnetic fields may interact with cryptochrome to promote carcinogenesis.

Pubmed Data : Proc Biol Sci. 2018 05 30 ;285(1879). PMID: **29794049**

Article Published Date : Jan 30, 2018

Authors : Jukka Juutilainen, Mikko Herrala, Jukka Luukkonen, Jonne Naarala, P J Hore

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Oxidant : CK(122) : AC(48)

Electromagnetic fields may interact with mammalian

cryptochrome to alter redox balance in cells.

Pubmed Data : PLoS Biol. 2018 10 ;16(10):e3000018. Epub 2018 Oct 2. PMID: 30278038

Article Published Date : Jan 10, 2018

Authors : Lukas Landler, David A Keays

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation induces structural changes in the brains of rats and impacts redox and inflammatory systems.

Pubmed Data : Turk Neurosurg. 2013 ;23(6):707-15. PMID: 24310452

Article Published Date : Jan 01, 2013

Authors : Olcay Eser, Ahmet Songur, Cevat Aktas, Ergun Karavelioglu, Veli Caglar, Firdevs Aylak, Fehmi Ozguner, Mehmet Kanter

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Interleukin-1 beta downregulation : CK(1743) : AC(868)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Inflammatory : CK(312) : AC(92), Oxidant : CK(122) : AC(48)

Epidemiological studies document an increased incidence of cancers among long-term users of mobile phones which is supported by mechanistic evidence

Pubmed Data : Exp Oncol. 2010 Jul ;32(2):54-60. PMID: 20693976

Article Published Date : Jul 01, 2010

Authors : I Yakymenko, E Sidorik

Study Type : Review

Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Oxidant : CK(122) : AC(48)

Evaluation of current studies suggests that electromagnetic fields may represent a serious source of concern and may be hazardous to living organisms.

Pubmed Data : Environ Res. 2018 05 ;163:71-79. Epub 2018 Feb 22. PMID: 29427953

Article Published Date : Jan 01, 2018

Authors : Adem Kocaman, Gamze Altun, Arife Ahsen Kaplan, Ömür Gülsüm Deniz, Kıymet Kübra Yurt, Süleyman Kaplan

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Exposure to electromangetic fields may increase the risk of cancers, especially in young individuals, and existing standard are not adequate to protect populations.

Pubmed Data : Rev Environ Health. 2010 Jan-Mar;25(1):75-80. PMID: 20429163

Article Published Date : Jan 01, 2010

Authors : David O Carpenter

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Cardiac Stress Test: Nuclear (Technetium-99m) : CK(10) : AC(1) , Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Extremely low frequency electromagnetic fields may enhance the carcinogenic effects of other carcinogens.

Pubmed Data : Environ Res. 2018 07 ;164:271-279. Epub 2018 Mar 20. PMID: 29549848

Article Published Date : Jan 01, 2018

Authors : L Bua, E Tibaldi, L Falcioni, M Lauriola, L De Angelis, F Gnudi, M Manservigi, F Manservisi, I Manzoli, I Menghetti, R Montella, S Panzacchi, D Sgargi, V Strollo, A Vornoli, D Mandrioli, F Belpoggi

Study Type : Animal Study
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Extremely low frequency magnetic fields should be considered an occupational carcinogen.

Pubmed Data : Environ Health Perspect. 2005 Nov ;113(11):A726-7; author reply A727. PMID: 16263490

Article Published Date : Nov 01, 2005

Authors : Kjell Hanson Mild, Mats-Olof Mattsso, Lennart Hardell, Joseph D Bowman, Michael Kundi

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Extremely low-frequency electromagnetic fields may increase the risk of breast cancer.

Pubmed Data : Eur J Gynaecol Oncol. 2014 ;35(3):264-9. PMID: 24984538

Article Published Date : Jan 01, 2014

Authors : G Zhao, X Lin, M Zhou, J Zhao

Study Type : Meta Analysis
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

High long-term exposure to extremely low frequency and radiofrequency electromagnetic fields may lead to breast

cancer and Alzheimer's disease through amyloid-beta upregulation and melatonin downregulation.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):149-56. Epub 2009 Mar 10. PMID: 19278839

Article Published Date : Aug 01, 2009

Authors : Zoreh Davanipour, Eugene Sobel

Study Type : Review
Additional Links
Diseases : , Alzheimer's Disease : CK(2442) : AC(871) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Amyloid-Beta Upregulation : CK(3) : AC(2) , Carcinogenic (suspected) : CK(21) : AC(3), Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

Increase in thyroid cancer incidence cannot be attributed to better diagnostic procedures and the role of both ionizing and non-ionizing radiation should be further studied.

Pubmed Data : BMC Cancer. 2016 07 7 ;16:426. Epub 2016 Jul 7. PMID: 27388603

Article Published Date : Jan 07, 2016

Authors : Michael Carlberg, Lena Hedendahl, Mikko Ahonen, Tarmo Koppel, Lennart Hardell

Study Type : Human Study
Additional Links
Diseases : Thyroid Cancer : CK(237) : AC(55)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Ipsilateral use of a cellular telephone increased the risk of tumours in the temporal, temporoparietal and occipital areas by 2.42-fold.

Pubmed Data : Neuroepidemiology. 2003 Mar-Apr;22(2):124-9. PMID: 12629278

Article Published Date : Mar 01, 2003

Authors : Lennart Hardell, Kjell Hansson Mild, Monica Sandström, Michael Carlberg, Arne Hallquist, Anneli Påhlson

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)

Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Long-term cell phone use is associated with risk of adult glioma.

Pubmed Data : World Neurosurg. 2018 Jul ;115:e629-e636. Epub 2018 Apr 28. PMID: **29709736**

Article Published Date : Jul 01, 2018

Authors : Peng Wang, Chongxian Hou, Yanwen Li, Dong Zhou

Study Type : Meta Analysis
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Long-term intermittent exposure to radiofrequency fields can enhance the probability that mice carrying a lymphomagenic oncogene will develop lymphomas.

Pubmed Data : Radiat Res. 1997 May ;147(5):631-40. PMID: **9146709**

Article Published Date : May 01, 1997

Authors : M H Repacholi, A Basten, V Gebski, D Noonan, J Finnie, A W Harris

Study Type : Animal Study
Additional Links
Diseases : Lymphoma : CK(253) : AC(83) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Occupational ELF exposure may play a role in the later stages of brain tumorigenesis.

Pubmed Data : Cancer Epidemiol Biomarkers Prev. 2014 Sep ;23(9):1863-72. Epub 2014 Jun 16. PMID: **24935666**

Article Published Date : Sep 01, 2014

Authors : Michelle C Turner, Geza Benke, Joseph D Bowman, Jordi Figuerola, Sarah Fleming, Martine Hours, Laurel Kincl, Daniel Krewski, Dave McLean, Marie-Elise Parent, Lesley Richardson, Siegal Sadetzki, Klaus Schlaefer, Brigitte Schlehofer, Joachim Schüz, Jack Siemiatycki, Martie van

Tongeren, Elisabeth Cardis

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

Occupational electromagnetic field exposure in electrical workers may increase the risk of leukemia.

Pubmed Data : Rev Epidemiol Sante Publique. 1992 ;40 Suppl 1:S55-62. PMID: **1626106**

Article Published Date : Jan 01, 1992

Authors : G Thériault

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Leukemias : CK(479) : AC(215)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Proximity to power lines is associated with an elevated risk of childhood leukemia. If the association is causal, an estimated 1% of childhood leukemia cases mat be attributable to these lines.

Pubmed Data : BMJ. 2005 Jun 4 ;330(7503):1290. PMID: **15933351**

Article Published Date : Jun 04, 2005

Authors : Gerald Draper, Tim Vincent, Mary E Kroll, John Swanson

Study Type : Human Study
Additional Links
Diseases : Leukemia: Childhood : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Radiofrequency radiation induces a wide range of adverse health effects, as substantiated by a significant body of literature.

Pubmed Data : Front Public Health. 2019 ;7:223. Epub 2019 Aug 13. PMID: 31457001

Article Published Date : Jan 01, 2019

Authors : Anthony B Miller, Margaret E Sears, L Lloyd Morgan, Devra L Davis, Lennart Hardell, Mark Oremus, Colin L Soskolne

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78)

Recent studies show there are large errors and/or major shortcomings in the studies claiming no link between mobile phone and brain cancer. This commentary criticizes the INTEROCC study's methodology.

Pubmed Data : Environ Int. 2018 12 ;121(Pt 1):1024. Epub 2018 Aug 24. PMID: 30146273

Article Published Date : Jan 12, 2018

Authors : S M J Mortazavi

Study Type : Commentary
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The WHO has denied any health risk associated with electromagnetic fields in their 2014 Monograph. However, 5 of the 6 members of the Core Group responsible for drafting this Monograph had significant conflicts of interest.

Pubmed Data : Int J Oncol. 2017 Aug ;51(2):405-413. Epub 2017 Jun 21. PMID: 28656257

Article Published Date : Aug 01, 2017

Authors : Lennart Hardell

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The findings suggest that young persons exposed to high levels of radiofrequency/microwave radiation for long periods in settings where preventive measures were lax were at increased risk for cancer.

Pubmed Data : Int J Occup Environ Health. 2000 Jul-Sep;6(3):187-93. PMID: 10926722

Article Published Date : Jul 01, 2000

Authors : E Richter, T Berman, E Ben-Michael, R Laster, J B Westin

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The possible influence of currently acceptable low-level RF exposures on carcinogenesis has been suggested by some studies and warrants further investigation.

Pubmed Data : Cancer. 2008 Oct 1 ;113(7 Suppl):1953-68. PMID: 18798534

Article Published Date : Oct 01, 2008

Authors : Melissa L Bondy, Michael E Scheurer, Beatrice Malmer, Jill S Barnholtz-Sloan, Faith G Davis, Dora Il'yasova, Carol Kruchko, Bridget J McCarthy, Preetha Rajaraman, Judith A Schwartzbaum, Siegal Sadetzki, Brigitte Schlehofer, Tarik Tihan, Joseph L Wiemels, Margaret Wrensch, Patricia A Buffler,

Study Type : Review
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The result of current research suggest it is necessary to use precautionary principles to prevent adverse health

effects associated with electromagnetic fields.

Pubmed Data : Ind Health. 2019;57(4):403-405. PMID: **31378769**

Article Published Date : Jan 01, 2019

Authors : Alicja Bortkiewicz

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

The study outlines the bias in the INTERPHONE studies.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):137-47. Epub 2009 Apr 7. PMID: **19356911**

Article Published Date : Aug 01, 2009

Authors : L Lloyd Morgan

Study Type : Review
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is a concerning association between heavy mobile phone use and brain tumours.

Pubmed Data : Occup Environ Med. 2014 Jul ;71(7):514-22. Epub 2014 May 9. PMID: **24816517**

Article Published Date : Jul 01, 2014

Authors : Gaëlle Coureau, Ghislaine Bouvier, Pierre Lebailly, Pascale Fabbro-Peray, Anne Gruber, Karen Leffondre, Jean-Sebastien Guillamo, Hugues Loiseau, Simone Mathoulin-Pélissier, Roger Salamon, Isabelle Baldi

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers: Radiation-Induced : CK(9) : AC(7)
Additional Keywords : Cancers: Radiation-Induced : CK(9) : AC(7) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is a possible risk of glioma in the most heavily exposed part of the brain with long-term cell phone use.

Pubmed Data : Int J Cancer. 2007 Apr 15 ;120(8):1769-75. PMID: 17230523

Article Published Date : Apr 15, 2007

Authors : Anna Lahkola, Anssi Auvinen, Jani Raitanen, Minouk J Schoemaker, Helle C Christensen, Maria Feychting, Christoffer Johansen, Lars Klaeboe, Stefan Lönn, Anthony J Swerdlow, Tore Tynes, Tiina Salminen

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Glioma : CK(333) : AC(169)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is a risk excess of Non-Hodgkin's lymphoma observed in telecommunication and transport workers which could be explained by electromagnetic radiation exposure.

Pubmed Data : Int Arch Occup Environ Health. 2001 Aug ;74(6):443-9. PMID: 11563608

Article Published Date : Aug 01, 2001

Authors : M I Cano, M Pollán

Study Type : Human Study
Additional Links
Diseases : Lymphoma: Non-Hodgkin : CK(363) : AC(79), Non-Hodgkin Lymphoma : CK(373) : AC(80)
Additional Keywords : Non-Hodgkin Lymphoma : CK(373) : AC(80)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is an apparent association between childhood lymphoblastic leukemia and and exposure to broadcast

radiation.

Pubmed Data : Aust N Z J Public Health. 1998 ;22(3 Suppl):360-7. PMID: 9629823

Article Published Date : Jan 01, 1998

Authors : D R McKenzie, Y Yin, S Morrell

Study Type : Human Study
Additional Links
Diseases : Leukemia: Childhood : CK(10) : AC(1)
Additional Keywords : Leukemia: Childhood : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is an increased risk of glioma and meningioma from cumulative exposure to radiofrequency electromagnetic fields.

Pubmed Data : Environ Int. 2018 10 ;119:353-365. Epub 2018 Jul 8. PMID: 29996112

Article Published Date : Jan 10, 2018

Authors : Javier Vila, Michelle C Turner, Esther Gracia-Lavedan, Jordi Figuerola, Joseph D Bowman, Laurel Kincl, Lesley Richardson, Geza Benke, Martine Hours, Daniel Krewski, Dave McLean, Marie-Elise Parent, Siegal Sadetzki, Klaus Schlaefer, Brigitte Schlehofer, Joachim Schüz, Jack Siemiatycki, Martie van Tongeren, Elisabeth Cardis,

Study Type : Human Study
Additional Links
Diseases : Glioma : CK(333) : AC(169) , Meningioma : CK(26) : AC(8)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is an observed synergistic effect of chemical substances and occupational electromagnetic field exposure on the risk of gliomas and meningiomas.

Pubmed Data : Cancer Epidemiol Biomarkers Prev. 2002 Dec ;11(12):1678-83. PMID: 12496061

Article Published Date : Dec 01, 2002

Authors : Ana Navas-Acién, Marina Pollán, Per Gustavsson, Birgitta Floderus, Nils Plato, Mustafa Dosemeci

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

There is biological plausability of an association between electromagnetic fields and breast cancer that warrants further investigation.

Pubmed Data : Ann Epidemiol. 2000 Jan ;10(1):31-44. PMID: 10658687

Article Published Date : Jan 01, 2000

Authors : L S Caplan, E R Schoenfeld, E S O'Leary, M C Leske

Study Type : Human Study
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

These results indicate that microwave radiation represents a potential DNA-damaging hazard.

Pubmed Data : Cell Biol Toxicol. 2009 Feb ;25(1):33-43. Epub 2008 Jan 23. PMID: 18214694

Article Published Date : Feb 01, 2009

Authors : Vera Garaj-Vrhovac, Visnja Orescanin

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78)

These results suggest an association between cellular phone use and salivary gland tumors.

Pubmed Data : Am J Epidemiol. 2008 Feb 15 ;167(4):457-67. Epub 2007 Dec 6. PMID: 18063591

Article Published Date : Feb 15, 2008

Authors : Siegal Sadetzki, Angela Chetrit, Avital Jarus-Hakak, Elisabeth Cardis, Yonit Deutch, Shay Duvdevani, Ahuva Zultan, Ilya Novikov, Laurence Freedman, Michael Wolf

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7) , RF-EMF and Cancers : CK(4078) : AC(1287)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This article emphasizes the need for new parameters of electromagnetic exposure in light of evidence that suggests mobile phone use longer than 10 years increases the risk for brain tumors.

Pubmed Data : Biomed Pharmacother. 2008 Feb ;62(2):104-9. Epub 2007 Dec 31. PMID: 18242044

Article Published Date : Feb 01, 2008

Authors : Lennart Hardell, Cindy Sage

Study Type : Review
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers : CK(7) : AC(3)
Additional Keywords : Cancers : CK(7) : AC(3) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This case series describes four women who developed breast cancer after carrying their phone against their breast up to 10 hours a day, for several years. All tumors developed underneath the position of the phone and had uncanny similarities.

Pubmed Data : Case Rep Med. 2013 ;2013:354682. Epub 2013 Sep 18. PMID: 24151509

Article Published Date : Jan 01, 2013

Authors : John G West, Nimmi S Kapoor, Shu-Yuan Liao, June W Chen, Lisa Bailey, Robert A Nagourney

Study Type : Human: Case Report
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738), Breast Cancer : CK(5066) : AC(1738)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

This commentary provides evidence that radiofrequency electromagnetic fields, at high levels and long durations, can increase the risk of cancer.

Pubmed Data : J Biomed Phys Eng. 2018 Mar ;8(1):151-152. Epub 2018 Mar 1. PMID: 29732351

Article Published Date : Mar 01, 2018

Authors : S M J Mortazavi, S A R Mortazavi, M Paknahad

Study Type : Commentary
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This investigation confirms previous studies that demonstrate an association between mobile phone use and malignant brain tumors.

Pubmed Data : Neuroepidemiology. 2010 Aug ;35(2):109-14. Epub 2010 Jun 15. PMID: 20551697

Article Published Date : Aug 01, 2010

Authors : Lennart Hardell, Michael Carlberg, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This large cohort study indicates an increased risk of acute myeloid leukemia and follicular lymphoma among men with extremely-low frequency electromagnetic field exposure.

Pubmed Data : Cancer Causes Control. 2014 Feb ;25(2):203-14. Epub 2013 Nov 16. PMID: 24241907

Article Published Date : Feb 01, 2014

Authors : Tom Koeman, Piet A van den Brandt, Pauline Slottje, Leo J Schouten, R Alexandra Goldbohm, Hans Kromhout, Roel Vermeulen

Study Type : Human Study
Additional Links
Diseases : Acute Myeloid Leukemia : CK(162) : AC(87) , Lymphoma: Follicular : CK(10) : AC(1)
Additional Keywords : Lymphoma: Follicular : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This meta-analysis demonstrates an increased risk of glioma associated with mobile phone use.

Pubmed Data : PLoS One. 2017 ;12(5):e0175136. Epub 2017 May 4. PMID: 28472042

Article Published Date : Jan 01, 2017

Authors : Ming Yang, WenWen Guo, ChunSheng Yang, JianQin Tang, Qian Huang, ShouXin Feng, AiJun Jiang, XiFeng Xu, Guan Jiang

Study Type : Meta Analysis
Additional Links
Diseases : Glioma : CK(333) : AC(169)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This meta-analysis demonstrates that ELF-EMFs might be related to an increased risk for female breast cancer.

Pubmed Data : PLoS One. 2013 ;8(7):e69272. Epub 2013 Jul 15. PMID: 23869239

Article Published Date : Jan 01, 2013

Authors : Qingsong Chen, Li Lang, Wenzhe Wu, Guoyong Xu, Xiao Zhang, Tao Li, Hanlin Huang

Study Type : Meta Analysis
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This paper reviews research that points to an association

between elecromagnetic fields and cancer.

Pubmed Data : Oncology (Williston Park). 1996 Apr ;10(4):563-70; discussion 573-4, 577-8. PMID: 8723289

Article Published Date : Apr 01, 1996

Authors : J R Salvatore, A B Weitberg, S Mehta

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This review indicates that a causal relationship between electromagnetic fields and childhood leukemia cannot be dismissed due to a trend of a dose-response relationship is past exposure assessment studies.

Pubmed Data : Am J Prev Med. 1995 Jul-Aug;11(4):263-70. PMID: 7495604

Article Published Date : Jul 01, 1995

Authors : P Levallois

Study Type : Review
Additional Links
Diseases : Leukemia : CK(1284) : AC(586) , Leukemia: Childhood : CK(10) : AC(1) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This review indicates the need for reevaluation of the current method to assess the effects non-ionizing radiation on the body and strongly points to the need for re-elaboration of the current safety limits.

Pubmed Data : Exp Oncol. 2011 Jun ;33(2):62-70. PMID: 21716201

Article Published Date : Jun 01, 2011

Authors : I Yakymenko, E Sidorik, S Kyrylenko, V Chekhun

Study Type : Review
Additional Links
Diseases : Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896) ,

Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896), Cancers: All : CK(22165) : AC(7896) , RF-EMF and Cancers : CK(4078) : AC(1287) , RF-EMF and Cancers : CK(4078) : AC(1287), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This review outlines mechanisms that underpin electromagnetic field's effects on human health.

Pubmed Data : Pediatr Ann. 2017 Apr 1 ;46(4):e172-e174. PMID: 28414399

Article Published Date : Apr 01, 2017

Authors : Tayaba Miah, Deepak Kamat

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study adds evidence of an excess of leukemia in a population living near high-power radio transmitters.

Pubmed Data : Am J Epidemiol. 2002 Jun 15 ;155(12):1096-103. PMID: 12048223

Article Published Date : Jun 15, 2002

Authors : Paola Michelozzi, Alessandra Capon, Ursula Kirchmayer, Francesco Forastiere, Annibale Biggeri, Alessandra Barca, Carlo A Perucci

Study Type : Human Study
Additional Links
Diseases : Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study confirmed previous results demonstrating an association between mobile and cordless phone use and acoustic neuroma.

Pubmed Data : Int J Oncol. 2013 Oct ;43(4):1036-44. Epub 2013 Jul 22. PMID: 23877578

Article Published Date : Oct 01, 2013

Authors : Lennart Hardell, Michael Carlberg, Fredrik Söderqvist, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4)
Additional Keywords : Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4), Acoustic Neuroma : CK(50) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

This study confirmed previous results of an association between mobile and cordless phone use and malignant brain tumours. These findings provide support for the hypothesis that RF-EMFs play a role in carcinogenesis.

Pubmed Data : Int J Oncol. 2013 Dec ;43(6):1833-45. Epub 2013 Sep 24. PMID: 24064953

Article Published Date : Dec 01, 2013

Authors : Lennart Hardell, Michael Carlberg, Fredrik Söderqvist, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Meningioma : CK(26) : AC(8)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study demonstrates a very linear relationship between cell phone usage and brain tumor incidence which needs further epidemiological evaluation. The authors note it would be prudent to limit exposure to all sources of electromagnetic radiation.

Pubmed Data : J Neurooncol. 2011 Feb ;101(3):505-7. Epub 2010 Jun 30. PMID: 20589524

Article Published Date : Feb 01, 2011

Authors : Steven Lehrer, Sheryl Green, Richard G Stock

Study Type : Human Study
Additional Links

Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study emphasizes the need for a DNA-based biological electromagnetic field exposure threshold and outlines the changes to DNA that can occur even at extremely low levels of exposure.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):71-8. Epub 2009 Mar 5. PMID: 19268550

Article Published Date : Aug 01, 2009

Authors : Martin Blank, Reba Goodman

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Cancers: All : CK(22165) : AC(7896) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Mutagenic : CK(24) : AC(13)

This study examining mice exposed to extremely low frequency magnetic fields demonstrated that lifetime exposure increases the risk for various types of cancers.

Pubmed Data : Int J Radiat Biol. 2016 ;92(4):202-14. Epub 2016 Feb 19. PMID: 26894944

Article Published Date : Jan 01, 2016

Authors : Morando Soffritti, Eva Tibaldi, Michela Padovani, David G Hoel, Livio Giuliani, Luciano Bua, Michelina Lauriola, Laura Falcioni, Marco Manservigi, Fabiana Manservisi, Simona Panzacchi, Fiorella Belpoggi

Study Type : Animal Study
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Leukemias : CK(479) : AC(215) , Lymphoma : CK(253) : AC(83), Schwannoma : CK(5) : AC(3)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and

Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study found a 3.5-fold increased risk of acoustic neuroma in analog phone users.

Pubmed Data : Eur J Cancer Prev. 2002 Aug ;11(4):377-86. PMID: 12195165

Article Published Date : Aug 01, 2002

Authors : L Hardell, A Hallquist, K Hansson Mild, M Carlberg, A Påhlson, A Lilja

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4) , Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study found a consistent association between radiofrequency radiation and elevated risk of hematolymphatic cancers.

Pubmed Data : Environ Res. 2018 05 ;163:123-133. Epub 2018 Feb 22. PMID: 29433020

Article Published Date : Jan 01, 2018

Authors : Michael Peleg, Or Nativ, Elihu D Richter

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study found an association between increased childhood leukemia incidence and mortality and proximity to TV towers.

Pubmed Data : Med J Aust. 1996 Dec 2-16;165(11-12):601-5. PMID: 8985435

Article Published Date : Dec 02, 1996

Authors : B Hocking, I R Gordon, H L Grain, G E Hatfield

Study Type : Human Study
Additional Links

Diseases : Cancers : CK(7) : AC(3) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

This study replicates the findings of a previous study demonstrating an increased risk of childhood leukemia associated with powerlines within a proximity of 600km.

Pubmed Data : Br J Cancer. 2014 Mar 4 ;110(5):1402-8. Epub 2014 Feb 6. PMID: **24504371**

Article Published Date : Mar 04, 2014

Authors : K J Bunch, T J Keegan, J Swanson, T J Vincent, M F G Murphy

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Leukemia : CK(1284) : AC(586)
Additional Keywords : Leukemia : CK(1284) : AC(586)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

UMTS-modulated radiofrequency exposure may act as a co-carcinogen.

Pubmed Data : Int J Radiat Biol. 2010 Jul ;86(7):529-41. PMID: **20545575**

Article Published Date : Jul 01, 2010

Authors : Thomas Tillmann, Heinrich Ernst, Joachim Streckert, Yi Zhou, Felicitas Taugner, Volkert Hansen, Clemens Dasenbrock

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Use of a cellular telephone was associated with an increased risk in the anatomic area with highest exposure.

Pubmed Data : MedGenMed. 2000 May 4 ;2(2):E2. Epub 2000 May 4. PMID: **11104448**

Article Published Date : May 04, 2000

Authors : L Hardell, A Nasman, A Pahlson, A Hallquist

Study Type : Human Study

Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Brain Cancer : CK(842) : AC(368) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3)

Vestibular schwannomas coincide with the more frequently used ear of mobile phones and tumor volume is strongly correlated with the amount of mobile phone use.

Pubmed Data : Tumour Biol. 2014 Jan ;35(1):581-7. Epub 2013 Aug 27. PMID: 23975478

Article Published Date : Jan 01, 2014

Authors : In Seok Moon, Bo Gyung Kim, Jinna Kim, Jong Dae Lee, Won-Sang Lee

Study Type : Human Study
Additional Links
Diseases : Schwannoma: Vestibular : CK(2) : AC(1)
Additional Keywords : Schwannoma: Vestibular : CK(2) : AC(1) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

Cardiotoxic (AC 12) (CK 81)

Electromagnetic fields alter alkaline phosphatase activity in vitro.

Pubmed Data : Radiats Biol Radioecol. 2001 Jan-Feb;41(1):62-6. PMID: 11253703

Article Published Date : Jan 01, 2001

Authors : M S Pashovkina, I G Akoev

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124)

Extremely high power microwave pulses induce chanhes in pacemaker rhythm in vitro.

Pubmed Data : Bioelectromagnetics. 2000 May ;21(4):245-54. PMID: 10797453

Article Published Date : May 01, 2000

Authors : A G Pakhomov, S P Mathur, J Doyle, B E Stuck, J L Kiel, M R Murphy

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124)

In this study, EMF has a seemingly weak interaction with heart rate variability parameters.

Pubmed Data : Bioelectromagnetics. 2007 Feb ;28(2):122-9. PMID: 17004239

Article Published Date : Feb 01, 2007

Authors : Marta Parazzini, Paolo Ravazzani, Gabriella Tognola, György Thuróczy, Ferenc B Molnar, Alessio Sacchettini, Gianluca Ardesi, Luca Tommaso Mainardi

Study Type : Human Study
Additional Links
Diseases : Heart Rate Variability: Increased : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124)

Intermittent mobile phone exposure results in a significant increase in embryonic mortality and cardiac deformity in chicken embryos.

Pubmed Data : Anat Histol Embryol. 2016 Jun ;45(3):197-208. Epub 2015 Jul 14. PMID: 26171674

Article Published Date : Jun 01, 2016

Authors : W Ye, F Wang, W Zhang, N Fang, W Zhao, J Wang

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA

damage : CK(1482) : AC(545), Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3), Cardiotoxic : CK(810) : AC(124), Genotoxic : CK(201) : AC(78)

Microwave radiation induces apoptosis in rat myocardial cells through redox and metabolic mechanisms.

Pubmed Data : Can J Physiol Pharmacol. 2016 Aug ;94(8):849-57. Epub 2016 Mar 6. PMID: 27203380

Article Published Date : Aug 01, 2016

Authors : Wenhe Zhu, Yan Cui, Xianmin Feng, Yan Li, Wei Zhang, Junjie Xu, Huiyan Wang, Shijie Lv

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124), Oxidant : CK(122) : AC(48)

Mobile phone radiation alters heart rate variability in healthy subjects.

Pubmed Data : J Med Syst. 2010 Dec ;34(6):1097-103. Epub 2009 Jun 18. PMID: 20703598

Article Published Date : Dec 01, 2010

Authors : Derya Yılmaz, Metin Yıldız

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124)

Mobile phone radiation may alter heart rate variability during call time.

Pubmed Data : Ind Health. 2008 Aug ;46(4):409-17. PMID: 18716391

Article Published Date : Aug 01, 2008

Authors : Ryszard Andrzejak, Rafal Poreba, Malgorzata Poreba, Arkadiusz Derkacz, Robert Skalik, Pawel Gac, Boguslaw Beck, Aleksandra Steinmetz-Beck, Witold Pilecki

Study Type : Human Study
Additional Links

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

Radiofrequency electromagnetic radiation increases parasympathetic nervous system activity.

Pubmed Data : Bioelectromagnetics. 2018 May ;39(4):277-288. Epub 2018 Feb 22. PMID: 29469164

Article Published Date : May 01, 2018

Authors : Jakub Misek, Igor Belyaev, Viera Jakusova, Ingrid Tonhajzerova, Jan Barabas, Jan Jakus

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

Significant alterations in arterial blood pressure were observed in rats exposed to electromagnetic pulses while heart rate was not altered.

Pubmed Data : Int J Radiat Biol. 2007 Jun ;83(6):421-9. PMID: 17487681

Article Published Date : Jun 01, 2007

Authors : Bao-Feng Li, Guo-Zhen Guo, Dong-Qing Ren, Jing-Li, Ruo-Bing Zhang

Study Type : Animal Study
Additional Links
Diseases : Hypertension : CK(4573) : AC(670) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124)

TETRA signals alter EEG and electrocardiogram readings consistent with vagal nerve stimulation in the chest.

Pubmed Data : Environ Res. 2016 Oct ;150:461-469. Epub 2016 Jul 13. PMID: 27419367

Article Published Date : Oct 01, 2016

Authors : Adrian P Burgess, Nathalie C Fouquet, Stefano Seri, Malcolm B Hawken, Andrew Heard, David Neasham, Mark P Little, Paul Elliott

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

The radiofrequency of cell phone prolongs the QT interval in human beings and it interferes with voltage criteria of ECG records in male patients with myocardial ischemia.

Pubmed Data : Ann Med Health Sci Res. 2012 Jul ;2(2):146-51. PMID: 23440607

Article Published Date : Jul 01, 2012

Authors : Ah Alhusseiny, Ms Al-Nimer, Ad Majeed

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

These results indicate that exposure to radiofrequency EMF may affect the neurovegetative regulation.

Pubmed Data : Int J Occup Med Environ Health. 2012 Sep ;25(4):446-55. Epub 2012 Dec 6. PMID: 23224733

Article Published Date : Sep 01, 2012

Authors : Alicja Bortkiewicz, Elżbieta Gadzicka, Wiesław Szymczak, Marek Zmyślony

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

Cell Cycle Inhibitor (AC 1) (CK 1)

Electromagnetic field exposure may induce DNA damage, stimulate inflammation, and impact cell proliferation and differentiation.

Pubmed Data : Electromagn Biol Med. 2019 Aug 26:1-18. Epub 2019 Aug 26. PMID: 31450976

Article Published Date : Aug 26, 2019

Authors : Henry Lai

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Cell Cycle Inhibitor : CK(3) : AC(3) , Cytotoxic : CK(89) : AC(53) , Immunotoxic : CK(338) : AC(66) , Inflammatory : CK(312) : AC(92)

Chemoresistance upregulation (AC 1) (CK 5)

Magnetic fields may upregulate chemoresistance in human glioblastoma.

Pubmed Data : Electromagn Biol Med. 2018 ;37(3):138-145. Epub 2018 May 30. PMID: 29846098

Article Published Date : Jan 01, 2018

Authors : Maryam Amiri, Mohsen Basiri, Hossein Eskandary, Zeinab Akbarnejad, Marzie Esmaeeli, Yaser Masoumi-Ardakani, Meysam Ahmadi-Zeidabadi

Study Type : Human In Vitro
Additional Links
Diseases : Glioblastoma : CK(398) : AC(193)
Pharmacological Actions : Antineoplastic Agents : CK(1594) : AC(982) , Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Chemoresistance upregulation : CK(7) : AC(6)

Cycloogenase-2 enzyme upregulation (AC 1) (CK 5)

1800 MHz radiofrequency fields stimulates pro-inflammatory responses in microglia and astrocytes in vitro.

Pubmed Data : PLoS One. 2014 ;9(9):e108318. Epub 2014 Oct 2. PMID: 25275372

Article Published Date : Jan 01, 2014

Authors : Yonghui Lu, Mindi He, Yang Zhang, Shangcheng Xu, Lei Zhang, Yue He, Chunhai Chen, Chuan Liu, Huifeng Pi, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation : CK(6531) : AC(1986)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cycloogenase-2 enzyme upregulation : CK(1) : AC(1) , Inflammatory : CK(312) : AC(92), Interleukin-1 up-regulation : CK(2) : AC(1) , Interleukin-6 up-regulation : CK(18) : AC(5), Prostaglandin E2 up-regulation : CK(2) : AC(1) , Tumor necrosis factorα (TNFα) up-regulation : CK(55) : AC(7)

Cytotoxic (AC 57) (CK 164)

16.5-GHz radiation causes significant changes in the activity of protein kinase C in rats.

Pubmed Data : Electromagn Biol Med. 2012 Sep ;31(3):233-42. PMID: 22897404

Article Published Date : Sep 01, 2012

Authors : R Paulraj, J Behari

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

1800 MHz EMF exposure caused significant genotoxic and cytotoxic effects and was more marked in immature rats.

Pubmed Data : Ecotoxicol Environ Saf. 2012 Jun ;80:140-4. Epub 2012 Mar 9. PMID: 22405939

Article Published Date : Jun 01, 2012

Authors : Vedat Sekeroğlu, Ayşegül Akar, Zülal Atlı Sekeroğlu

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

1800 MHz RF-EMF fields result in cell type-dependent DNA damage and a significant increase in reactive oxygen species level, however researchers conclude it doesn't contribute to cell dysfunction.

Pubmed Data : PLoS One. 2013 ;8(1):e54906. Epub 2013 Jan 23. PMID: 23355902

Article Published Date : Jan 01, 2013

Authors : Shanshan Xu, Guangdi Chen, Chunjing Chen, Chuan Sun, Danying Zhang, Manuel Murbach, Niels Kuster, Qunli Zeng, Zhengping Xu

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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2 hours of 2.45 GHz radiation induces micronuclei formation above a standard absorption rate of 50W/kg in Chinese hamster ovary cells.

Pubmed Data : ScientificWorldJournal. 2004 Oct 20 ;4 Suppl 2:29-40. Epub 2004 Oct 20. PMID: 15517100

Article Published Date : Oct 20, 2004

Authors : S Koyama, Y Isozumi, Y Suzuki, M Taki, J Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

2.1 GHz microwave radiation decreases cell viability, reduces mitochondrial membrane potential, and results in cell death in breast fibroblast cells in vitro.

Pubmed Data : Cell Biochem Biophys. 2013 ;67(3):1371-8. PMID: 23723005

Article Published Date : Jan 01, 2013

Authors : Meric Arda Esmekaya, Nesrin Seyhan, Handan Kayhan, Mehmet Zahid Tuysuz, Ayşe Canseven Kurşun, Münci Yağcı

Study Type : Human In Vitro
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondrial Dysfunction : CK(329) : AC(136)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53)

2.45 GHz radiation exposure resulted in decreased protein kinase C activity in the hippocampus and increase in glial cell count in exposed rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(1):61-70. PMID: 16595335

Article Published Date : Jan 01, 2006

Authors : R Paulraj, J Behari

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Inflammatory : CK(312) : AC(92)

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900 MHz electromagnetic fields reduces cell viability and proliferation.

Pubmed Data : Int J Prev Med. 2018 ;9:51. Epub 2018 Jun 19. PMID: 30034669

Article Published Date : Jan 01, 2018

Authors : Daryoush Shahbazi-Gahrouei, Batool Hashemi-Beni, Alireza Moradi, Maryam Aliakbari, Saghar Shahbazi-Gahrouei

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53)

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950 MHz microwaves induce structural and functional changes in liposomes, mimicking a membrane system.

Pubmed Data : Phys Med. 2012 Jan ;28(1):48-53. Epub 2011 Apr 2. PMID: 21459642

Article Published Date : Jan 01, 2012

Authors : Mohsen M Mady, Mousa A Allam

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Altered mitochondrial membrane potential is associated with abnormal sperm parameters.

Pubmed Data : Fertil Steril. 2003 Sep ;80 Suppl 2:844-50. PMID: 14505763

Article Published Date : Sep 01, 2003

Authors : Xia Wang, Rakesh K Sharma, Akshay Gupta, Valal George, Anthony J Thomas, Tommaso Falcone, Ashok Agarwal

Study Type : Human Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Animals exposed to a 2100 MHz exhibited histopathological changes in salivary glands.

Pubmed Data : Am J Otolaryngol. 2015 Jan-Feb;36(1):39-46. Epub 2014 Oct 5. PMID: 25456509

Article Published Date : Jan 01, 2015

Authors : Filiz Aydogan, Ilhan Unlu, Emine Aydin, Nihat Yumusak, Erdinc Devrim, Ethem Erdal Samim, Elcin Ozgur, Velid Unsal, Arin Tomruk, Goknur Guler Ozturk, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Diseases : Salivary Gland Diseases : CK(36) : AC(7)
Additional Keywords : Salivary Gland Diseases : CK(36) : AC(7) , Salivary Gland Diseases : CK(36) : AC(7), Salivary Gland Diseases : CK(36) : AC(7) , Salivary Gland Diseases : CK(36) : AC(7) , Salivary Gland Diseases : CK(36) : AC(7)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Cells treated with the combination of 2.45 GHz electromagnetic fields at specific absorption rates from 50 to 200 W/kg and bleomycin exhibited increased hypoxanthine-guanine phosphoribosyl transferase gene mutations

Pubmed Data : J Radiat Res. 2007 Jan ;48(1):69-75. Epub 2006 Dec 19. PMID: 17179647

Article Published Date : Jan 01, 2007

Authors : Shin Koyama, Yoshio Takashima, Tomonori Sakurai, Yukihisa Suzuki, Masao Taki, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

Combined two-frequency electromagnetic field signals induce biochemical alterations evident of cellular stress.

Pubmed Data : Oncotarget. 2016 Oct 4 ;7(40):64674-64689. PMID: 27589837

Article Published Date : Oct 04, 2016

Authors : Alberto López-Furelos, José Manuel Leiro-Vidal, Aarón Ángel Salas-Sánchez, Francisco José Ares-Pena, María Elena López-Martín

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Electromagnetic field exposure may induce DNA damage, stimulate inflammation, and impact cell proliferation and differentiation.

Pubmed Data : Electromagn Biol Med. 2019 Aug 26:1-18. Epub 2019 Aug 26. PMID: 31450976

Article Published Date : Aug 26, 2019

Authors : Henry Lai

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Cell Cycle Inhibitor : CK(3) : AC(3) , Cytotoxic : CK(89) : AC(53) , Immunotoxic : CK(338) : AC(66) , Inflammatory : CK(312) : AC(92)

Electromagnetic fields alter cell membrane kinetics.

Pubmed Data : Eur Biophys J. 2009 Oct ;38(8):1069-78. Epub 2009 Jul 15. PMID: 19603160

Article Published Date : Oct 01, 2009

Authors : M Mohammadzadeh, H Mobasheri, F Arazm

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Electromagnetic fields alter gene transcription related to apoptosis and cell cycle control in embryonic stem cell-derived neural progenitor cells.

Pubmed Data : FASEB J. 2005 Oct ;19(12):1686-8. Epub 2005 Aug 22. PMID: 16116041

Article Published Date : Oct 01, 2005

Authors : Teodora Nikolova, Jaroslaw Czyz, Alexandra Rolletschek, Przemyslaw Blyszczuk, Jörg Fuchs, Gabriele Jovtchev, Jürgen Schuderer, Niels Kuster, Anna M Wobus

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Electromagnetic fields can perturb endocytosis.

Pubmed Data : Biochim Biophys Acta. 2005 Feb 1 ;1668(1):126-37. PMID: 15670738

Article Published Date : Feb 01, 2005

Authors : Nawel Mahrour, Roxana Pologea-Moraru, Mihaela G Moisescu, Stéphane Orlowski, Philippe Levêque, Lluis M Mir

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Electromagnetic fields cause disruption of the cell's electrochemical balance and function through irregular gating of electrosensitive channels on the plasma membrane.

Pubmed Data : Biochem Biophys Res Commun. 2002 Oct 18 ;298(1):95-102. PMID: 12379225

Article Published Date : Oct 18, 2002

Authors : Dimitris J Panagopoulos, Andreas Karabarbounis, Lukas H Margaritis

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Radiotoxic : CK(22) : AC(4)

Electromagnetic fields disorder the electrochemical balance of the plasma membrane and consequently the whole cell function.

Pubmed Data : Biochem Biophys Res Commun. 2000 Jun 16 ;272(3):634-40. PMID: 10860806

Article Published Date : Jun 16, 2000

Authors : D J Panagopoulos, N Messini, A Karabarbounis, A L Philippetis, L H Margaritis

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Voltage-Gated Calcium Channel Activation : CK(1) : AC(1)

Electromagnetic fields may disturb protein folding.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):188-96. PMID: 15352175

Article Published Date : Sep 01, 2004

Authors : Fabrizio Mancinelli, Michele Caraglia, Alberto Abbruzzese, Guglielmo d'Ambrosio, Rita Massa, Ettore Bismuto

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Electromagnetic fields reduces endothelin-1 levels through a nitric oxide-related pathway.

Pubmed Data : J Int Med Res. 2005 Sep-Oct;33(5):545-54. PMID: 16222888

Article Published Date : Sep 01, 2005

Authors : S Morimoto, T Takahashi, K Shimizu, T Kanda, K Okaishi, M Okuro, H Murai, Y Nishimura, K Nomura, H Tsuchiya, I Ohashi, M Matsumoto

Study Type : Human In Vitro
Additional Links
Diseases : Endothelial Dysfunction : CK(1765) : AC(346)
Pharmacological Actions : Enzyme Inhibitors : CK(602) : AC(312)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Electromagnetic irradiation from mobile phones induces the activation of the ERK cascade and thereby induces transcription and other cellular processes.

Pubmed Data : Biochem J. 2007 Aug 1 ;405(3):559-68. PMID: 17456048

Article Published Date : Aug 01, 2007

Authors : Joseph Friedman, Sarah Kraus, Yirmi Hauptman, Yoni Schiff, Rony Seger

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Proliferative : CK(17) : AC(6)

Exposure to mobile signal jammers significantly reduces sperm motility in human sperm samples.

Pubmed Data : J Hum Reprod Sci. 2013 Apr ;6(2):124-8. PMID: 24082653

Article Published Date : Apr 01, 2013

Authors : Smj Mortazavi, Me Parsanezhad, M Kazempour, P Ghahramani, Ar Mortazavi, M Davari

Study Type : Human In Vitro
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Exposure to radiofrequency electromagnetic fields induces alanine accumulation in duckweed, previously shown to be a universal stress signal.

Pubmed Data : J Environ Monit. 2011 Jul ;13(7):1890-6. Epub 2011 Jun 8. PMID: 21655615

Article Published Date : Jul 01, 2011

Authors : Edna Ben-Izhak Monselise, Aliza Levkovitz, Hugo E Gottlieb, Daniel Kost

Study Type : Plant Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Extremely low frequency magnetic fields induce alterations and oxidative stress at a cellular level in the uterus and ovaries of rats after long-term exposure.

Pubmed Data : Med Sci Monit. 2006 Jun ;12(6):BR215-20. Epub 2006 May 29. PMID: 16733479

Article Published Date : Jun 01, 2006

Authors : Feyzan Aksen, M Zulkuf Akdag, Aydin Ketani, Beran Yokus, Abdurrahman Kaya, Suleyman Dasdag

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Extremely-low frequency EMF exposure increases reactive oxygen species in bone marrow cells.

Pubmed Data : Electromagn Biol Med. 2010 Aug ;29(3):122-30. PMID: 20707646

Article Published Date : Aug 01, 2010

Authors : Inhan-Garip Ayşe, Akan Zafer, Oncul Sule, Işal-Turgut Işil, Tunaya Kalkan

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Extremely-low frequency electric fields induce morphological changes in avian erythrocytes.

Pubmed Data : Bioelectromagnetics. 2019 Sep ;40(6):375-390. Epub 2019 Jun 3. PMID: 31157927

Article Published Date : Sep 01, 2019

Authors : Mahdi Imani, Sepide Kazemi, Mehrdad Saviz, Leila Farahmand, Behnam Sadeghi, Reza Faraji-Dana

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Free radical concentration increase within the cell caused by radiofrequency/microwave radiation seems to be a biologically relevant hypothesis to give clear insight into the RF/MW action at non-thermal level of radiation.

Pubmed Data : Arh Hig Rada Toksikol. 2012 Sep ;63(3):407-16. PMID: 23152390

Article Published Date : Sep 01, 2012

Authors : Ana Marija Marjanović, Ivan Pavičić, Ivančica Trošić

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

GSM mobile phone radiation stimulates clathrin-dependent endocytosis.

Pubmed Data : Bioelectromagnetics. 2009 Apr ;30(3):222-30. PMID: 19072782

Article Published Date : Apr 01, 2009

Authors : Mihaela G Moisescu, Philippe Leveque, Marie-Ange Verjus, Eugenia Kovacs, Lluis M Mir

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

High frequency microwaves alter the function of phosphotidylcholine membranes in a non-thermal manner.

Pubmed Data : Bioelectrochemistry. 2012 Apr ;84:18-24. Epub 2011 Oct 13. PMID: 22082754

Article Published Date : Apr 01, 2012

Authors : Amerigo Beneduci, Luigi Filippelli, Katia Cosentino, Maria L Calabrese, Rita Massa, Giuseppe Chidichimo

Study Type : In Vitro Study
Additional Links
Substances : Phosphatidylcholine : CK(101) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Low intensity static magnetic fields increase cellular free radical content and decrease mitochondrial membrane potential.

Pubmed Data : Bioelectromagnetics. 2013 Dec ;34(8):618-29. Epub 2013 Sep 25. PMID: 24217848

Article Published Date : Dec 01, 2013

Authors : Emanuele Calabrò, Salvatore Condello, Monica Currò, Nadia Ferlazzo, Daniela Caccamo, Salvatore Magazù, Riccardo Ientile

Study Type : Human In Vitro
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Magnetic fields induce morphological changes in the rat liver which to which melatonin has a mild protective effect.

Pubmed Data : Okajimas Folia Anat Jpn. 2002 May ;79(1):25-31. PMID: 12199535

Article Published Date : May 01, 2002

Authors : Alpaslan Gökcimen, Fehmi Ozgüner, Erdal Karaöz, Sükrü Ozen, Gülsen Aydin

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Pharmacological Actions : Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Hepatotoxic : CK(335) : AC(96)

Microwave radiation upregulates multiple stress and apoptosis-related genes in human retina pigment epithelial cells.

Pubmed Data : Zhonghua Yu Fang Yi Xue Za Zhi. 2002 Sep ;36(5):291-4. PMID: 12411184

Article Published Date : Sep 01, 2002

Authors : Xiuhong Liu, Hong Shen, Yongliang Shi, Jingyuan Chen, Yaoming Chen, Ailing Ji

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53)

Mobile phone electromagnetic field radiation induces dose-dependent damage in developing neurons of chick embryo.

Pubmed Data : Nepal Med Coll J. 2012 Dec ;14(4):337-41. PMID: 24579548

Article Published Date : Dec 01, 2012

Authors : I V Ingole, S K Ghosh

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

Mobile phone radiation alters connexin expression, protein localization, and cellular ultrastructure.

Pubmed Data : Reprod Toxicol. 2009 Jul ;28(1):59-65. Epub 2009 Apr 5. PMID: 19490996

Article Published Date : Jul 01, 2009

Authors : Franco Cervellati, Guido Franceschetti, Laura Lunghi, Silvia Franzellitti, Paola Valbonesi, Elena Fabbri, Carla Biondi, Fortunato Vesce

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Mobile phone radiation exposure increases oxidative stress as evidenced by increased protein carbonyl and malondialdehyde, coupled with impaired cognition.

Pubmed Data : Indian J Biochem Biophys. 2013 Apr ;50(2):114-9. PMID: 23720885

Article Published Date : Apr 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Basu Dev Banerjee, Mahesh Pandurang Abegaonkar, Kanu Megha, Rafat Sultana Ahmed, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Oxidant : CK(122) : AC(48)

Mobile phone radiation leads to cytotoxic and genotoxic damage in both immature and mature rats, with rate of damage being statistically higher in immature rats.

Pubmed Data : Int J Radiat Biol. 2013 Nov ;89(11):985-92. Epub 2013 Jun 21. PMID: 23718180

Article Published Date : Nov 01, 2013

Authors : Zülal Atlı Şekeroğlu, Ayşegül Akar, Vedat Şekeroğlu

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

Modulated radiofrequency radiation enhances ornithine decarboxylase activity and calcium efflux in the rat brain.

Pubmed Data : Indian J Biochem Biophys. 1999 Oct ;36(5):337-40. PMID: **10844985**

Article Published Date : Oct 01, 1999

Authors : R Paulraj, J Behari, A R Rao

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Nonthermal induction of heat shock protein 70 and heterogeneous nuclear ribonucleoprotein K are involved in the stress reaction of human lens epithelial cells to electromagnetic fields.

Pubmed Data : Jpn J Ophthalmol. 2007 Nov-Dec;51(6):412-6. Epub 2007 Dec 21. PMID: **18158590**

Article Published Date : Nov 01, 2007

Authors : Hong-Wu Li, Ke Yao, Hong-Ying Jin, Li-Xia Sun, De-Qiang Lu, Yi-Bo Yu

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Pulsed radiofrequency radiation increases the expression of activating transcription factor 3, an indicator of cellular "stress", in the rat dorsal root ganglia.

Pubmed Data : Eur J Pain. 2006 Feb ;10(2):171-6. PMID: **16310722**

Article Published Date : Feb 01, 2006

Authors : Wolfgang Hamann, Sherif Abou-Sherif, Stephen Thompson, Susan Hall

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

Radiofrequency electromagnetic fields increase the rate of endocytosis in vitro.

Pubmed Data : Bioelectrochemistry. 2008 Nov ;74(1):9-15. Epub 2007 Nov 21. PMID: 18272432

Article Published Date : Nov 01, 2008

Authors : Mihaela G Moisescu, Philippe Leveque, Jean-Rémi Bertrand, Eugenia Kovacs, Lluis M Mir

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Radiofrequency electromagnetic waves emitted from cell phones may lead to oxidative stress in human semen.

Pubmed Data : Fertil Steril. 2009 Oct ;92(4):1318-25. Epub 2008 Sep 20. PMID: 18804757

Article Published Date : Oct 01, 2009

Authors : Ashok Agarwal, Nisarg R Desai, Kartikeya Makker, Alex Varghese, Rand Mouradi, Edmund Sabanegh, Rakesh Sharma

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Radiofrequency radiation exposure leads to neuronal cells and changes in astrocyte morphology.

Pubmed Data : Neurosci Lett. 2012 Jan 11 ;506(2):292-6. Epub 2011 Nov 25. PMID: 22133805

Article Published Date : Jan 11, 2012

Authors : Dhiraj Maskey, Hye-Jin Kim, Hyung Gun Kim, Myeung Ju Kim

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

Radiofrequency radiation may impair uptake of iron by

ferritin

Pubmed Data : Bioelectromagnetics. 2010 May ;31(4):311-7. PMID: 20082334

Article Published Date : May 01, 2010

Authors : Oscar Céspedes, Osamu Inomoto, Shoichi Kai, Yoshinori Nibu, Toshio Yamaguchi, Nobuyoshi Sakamoto, Tadahiro Akune, Masayoshi Inoue, Takanobu Kiss, Shoogo Ueno

Study Type : In Vitro Study
Additional Links
Diseases : Iron Deficiency/Malabsorption : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Selenium prevents oxidative stress and apoptosis associated with mobile phone exposure.

Pubmed Data : Biol Trace Elem Res. 2014 Aug ;160(2):285-93. Epub 2014 Jun 27. PMID: 24965080

Article Published Date : Aug 01, 2014

Authors : Mehmet Cemal Kahya, Mustafa Nazıroğlu, Bilal Çiğ

Study Type : Human In Vitro
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932) , Antioxidant : CK(9) : AC(4) , Cytoprotective : CK(190) : AC(94)
Additional Keywords : Cytoprotective : CK(190) : AC(94) , Cytoprotective : CK(190) : AC(94) , Cytoprotective : CK(190) : AC(94) , Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Super high frequency radiation induces changes in cat neurons. Nucleus-to-cytoplasm ratio seems to be subject to the greatest influence.

Pubmed Data : Radiats Biol Radioecol. 2009 May-Jun;49(3):365-71. PMID: 19637747

Article Published Date : May 01, 2009

Authors : I K Smoliarenko, O O Shugurov

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

The adverse effects of gamma-rays on cellular functions are strengthened by cell phone electromagnetic radiation.

Pubmed Data : J Toxicol Environ Health A. 2009 ;72(11-12):727-32. PMID: 19492235

Article Published Date : Jan 01, 2009

Authors : Yi Cao, Wei Zhang, Min-Xia Lu, Qian Xu, Qian-Qian Meng, Ji-Hua Nie, Jian Tong

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

The outcomes of this study demonstrate that a radiofrequency electromagnetic energy signal can induce a specific siRNA-like effect on cells.

Pubmed Data : J Neurooncol. 2017 Jun ;133(2):257-264. Epub 2017 Apr 22. PMID: 28434113

Article Published Date : Jun 01, 2017

Authors : Ilya V Ulasov, Haidn Foster, Mike Butters, Jae-Geun Yoon, Tomoko Ozawa, Theodore Nicolaides, Xavier Figueroa, Parvinder Hothi, Michael Prados, John Butters, Charles Cobbs

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

These findings suggest occupational exposure to pulsed microwaves could cause genetic and cell alterations and that oxidative stress may be one of the possible mechanisms of DNA and cell damage.

Pubmed Data : Int J Hyg Environ Health. 2011 Jan ;214(1):59-65. Epub 2010 Sep 15. PMID: 20833106

Article Published Date : Jan 01, 2011

Authors : Vera Garaj-Vrhovac, Goran Gajski, Senijo Pažanin, Antonio Sarolić, Ana-Marija Domijan, Dubravka Flajs, Maja Peraica

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)

Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

These results indicate that acute exposure to EMF at high SARs impairs the ability of neurons to store information.

Pubmed Data : Electromagn Biol Med. 2013 Mar ;32(1):48-58. Epub 2012 Oct 9. PMID: 23046101

Article Published Date : Mar 01, 2013

Authors : B Partsvania, T Sulaberidze, L Shoshiashvili

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

These studies investigate micronuclei formation at different specific absorption rates, in conjunction with bleomycin, for 18 hours.

Pubmed Data : Mutat Res. 2003 Nov 10 ;541(1-2):81-9. PMID: 14568297

Article Published Date : Nov 10, 2003

Authors : Shin Koyama, Takehisa Nakahara, Kanako Wake, Masao Taki, Yasuhito Isozumi, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : Chemotherapy-Induced Toxicity: Bleomycin : CK(60) : AC(25) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

This study describes the effects of combined extremely weak magnetic field on aqueous solution of amino acids.

Pubmed Data : Biofizika. 2014 Jul-Aug;59(4):829-32. PMID: 25707253

Article Published Date : Jul 01, 2014

Authors : M N Zhadin, B V Bakharev, N V Bobkova

Study Type : Human In Vitro
Additional Links

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Transformation of the dynamic-structural state of adsorbed water phases on biopolymer surfaces has been found to be the key factor in the mechanism of microwave effects on living and water-containing objects.

Pubmed Data : Colloids Surf B Biointerfaces. 2017 Jun 1 ;154:40-47. Epub 2017 Mar 6. PMID: 28288341

Article Published Date : Jun 01, 2017

Authors : Denis B Kuznetsov, Ekaterina V Orlova, Valery A Neschislyaev, Igor L Volkhin, Igor V Izmestiev, Igor V Lunegov, Alevtina V Balandina, Dina G Dianova

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Ultrashort electric field shock stimulate plasma membrane permeabilization.

Pubmed Data : Arch Biochem Biophys. 2007 Sep 1 ;465(1):109-18. Epub 2007 May 24. PMID: 17555703

Article Published Date : Sep 01, 2007

Authors : Andrei G Pakhomov, Rachael Shevin, Jody A White, Juergen F Kolb, Olga N Pakhomova, Ravindra P Joshi, Karl H Schoenbach

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

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millimeter wave radiation, in the 30-300 GHz range, alters cell membrane structure in vitro.

Pubmed Data : Radiat Res. 2012 Nov ;178(5):437-46. Epub 2012 Sep 21. PMID: 22998228

Article Published Date : Nov 01, 2012

Authors : Loreto Di Donato, Maria Cataldo, Pasquale Stano, Rita Massa, Alfonsina Ramundo-Orlando

Study Type : In Vitro Study

Additional Links
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53)

Dyslipidemic (AC 1) (CK 10)

Acute cell phone exposure may influence serum lipid profiles.

Pubmed Data : J Basic Clin Physiol Pharmacol. 2010 ;21(2):201-10. PMID: 20853601

Article Published Date : Jan 01, 2010

Authors : Matin A Parkar, Rishad Ahmed, Bilal Bin Abdullah, B S Patil, Kusal K Das

Study Type : Human Study
Additional Links
Diseases : Dyslipidemias : CK(638) : AC(150)
Additional Keywords : Dyslipidemias : CK(638) : AC(150)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Dyslipidemic : CK(32) : AC(8)

Endocrine Disruptor (AC 11) (CK 37)

1800-MHz radiofrequency fields disturb plasma melatonin levels in rats.

Pubmed Data : J Toxicol Environ Health A. 2012 ;75(18):1120-8. PMID: 22891885

Article Published Date : Jan 01, 2012

Authors : Fenju Qin, Jie Zhang, Honglong Cao, Cao Yi, Jian Xiang Li, Jihua Nie, Li Li Chen, Jiajun Wang, Jian Tong

Study Type : Animal Study
Additional Links

Substances : Melatonin : CK(1399) : AC(461) , Testosterone : CK(164) : AC(29)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Melatonin Interference : CK(2) : AC(2)

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900 MHz EMF induces morphological and biological that are possibly attributed to hormonal changes.

Pubmed Data : Saudi Med J. 2005 Mar ;26(3):405-10. PMID: 15806208

Article Published Date : Mar 01, 2005

Authors : Meltem Ozguner, Ahmet Koyu, Gokhan Cesur, Mehmet Ural, Fehmi Ozguner, Alpaslan Gokcimen, Namik Delibas

Study Type : Animal Study
Additional Links
Substances : Testosterone : CK(164) : AC(29)
Diseases : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

Despite divergences in the reported results, ELF-MF and radio frequency electromagnetic field have to be considered as factors possibly influencing the circadian system function.

Pubmed Data : Biomed Res Int. 2014 ;2014:169459. Epub 2014 Jul 22. PMID: 25136557

Article Published Date : Jan 01, 2014

Authors : Bogdan Lewczuk, Grzegorz Redlarski, Arkadiusz Zak, Natalia Ziółkowska, Barbara Przybylska-Gornowicz, Marek Krawczuk

Study Type : Review
Additional Links
Diseases : Circadian Dysregulation : CK(165) : AC(34)
Additional Keywords : Circadian Rhythm : CK(23) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Melatonin Interference : CK(2) : AC(2)

Electromagnetic field emissions may downregulate the synthesis of beta trace protein, the key enzyme in the synthesis of prostaglandin D2 an endogenous sleep-

promoting neurohormone in the brain.

Pubmed Data : Int J Mol Med. 2010 Aug ;26(2):301-6. PMID: 20596612

Article Published Date : Aug 01, 2010

Authors : Lennart Hardell, Fredrik Söderqvist, Michael Carlberg, Henrik Zetterberg, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Neurotoxic : CK(1458) : AC(323)

Electromagnetic radiation induces electrophysiological changes in the gastric system and increases catecholamine secretion in dogs.

Pubmed Data : Med Tr Prom Ekol. 2000(5):8-11. PMID: 10881538

Article Published Date : Jan 01, 2000

Authors : G A Kulkybaev, N I Pospelov

Study Type : Insect Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

Long-term exposure to mobile phone radiation leads to reduction in serum testosterone levels in rats.

Pubmed Data : Saudi Med J. 2010 Aug ;31(8):869-73. PMID: 20714683

Article Published Date : Aug 01, 2010

Authors : Sultan A Meo, Abdul M Al-Drees, Sufia Husain, Muhammad M Khan, Muhammad B Imran

Study Type : Animal Study
Additional Links
Substances : Testosterone : CK(164) : AC(29)
Additional Keywords : Testosterone : CK(164) : AC(29)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

Low energy microwave alters thyroid hormones and may contribute to emotional reactivity.

Pubmed Data : Int J Radiat Biol. 2008 Jun ;84(6):505-13. PMID: 18470749

Article Published Date : Jun 01, 2008

Authors : Rakesh Kumar Sinha

Study Type : Animal Study
Additional Links
Diseases : Emotional Disorders : CK(51) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

Microwave exposure at a rate of 1mW/cm2 increased levels of plasma corticosterone, glucocorticoid receptor nuclear translocation, and apoptosis in the rat hippocampus.

Pubmed Data : J Radiat Res. 2008 Mar ;49(2):163-70. Epub 2008 Jan 16. PMID: 18198477

Article Published Date : Mar 01, 2008

Authors : Maoquan Li, Yanyan Wang, Yanwen Zhang, Zhou Zhou, Zhengping Yu

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Neurotoxic : CK(1458) : AC(323)

Mobile phone EMF exposure may induce metabolic changes that may contribute to increased weight gain.

Pubmed Data : J Pineal Res. 2008 Apr ;44(3):267-72. PMID: 18339122

Article Published Date : Apr 01, 2008

Authors : Alexander Lerchl, Heike Krüger, Michael Niehaus, Joachim R Streckert, Andreas K Bitz, Volkert Hansen

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

These findings show that cell phone use negatively affects sperm quality in men and acts as an endocrine disruptor.

Pubmed Data : Andrologia. 2011 Oct ;43(5):312-6. PMID: 21951197

Article Published Date : Oct 01, 2011

Authors : T Gutschi, B Mohamad Al-Ali, R Shamloul, K Pummer, H Trummer

Study Type : Human Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91)

Endocrine Disruptor: Testes (AC 4) (CK 16)

1.8 GHz electromagnetic field exposure results in increased testosterone levels that are independent of testicular steroidogenesis.

Pubmed Data : Reprod Toxicol. 2006 Jul ;22(1):111-7. Epub 2006 Jan 24. PMID: 16434166

Article Published Date : Jul 01, 2006

Authors : Zsolt Forgács, Zoltán Somosy, Györgyi Kubinyi, József Bakos, Aranka Hudák, András Surján, György Thuróczy

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7)

Long-term exposure to mobile phone radiation can cause hypospermatogenesis and maturation arrest in the

spermatozoa in the testis of Wistar albino rats.

Pubmed Data : J Coll Physicians Surg Pak. 2011 May ;21(5):262-5. PMID: 21575531

Article Published Date : May 01, 2011

Authors : Sultan Ayoub Meo, Muhammad Arif, Shahzad Rashied, Muhammad Mujahid Khan, Muhammad Saeed Vohra, Adnan Mahmood Usmani, Muhammad Babar Imran, Abdul Majeed Al-Drees

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7)

Microwave radiation has a significant effect on the reproductive system of rats.

Pubmed Data : Fertil Steril. 2011 Mar 15 ;95(4):1500-2. Epub 2010 Jun 18. PMID: 20723534

Article Published Date : Mar 15, 2011

Authors : Sanjay Kumar, Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7)

Rats born to mothers exposed to Wi-Fi and cell phone electromagnetic fields exhibit elevated oxidative stress in kidneys and testes and may cause precocious puberty.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):221-9. Epub 2013 Oct 8. PMID: 24101576

Article Published Date : Dec 01, 2013

Authors : Alper Özorak, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Derviş Özçelik, Mehmet Okan Özkaya, Hasan Çetin, Mehmet Cemal Kahya, Seyit Ali Kose

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436), Puberty: Precocious : CK(2) : AC(2)
Additional Keywords : Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal

Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Endocrine Disruptor: Thyroid (AC 11) (CK 54)

900 MHz EMF emitted by cellular telephones decrease serum TSH and T3-T4 levels in rats.

Pubmed Data : Toxicol Lett. 2005 Jul 4 ;157(3):257-62. Epub 2005 Apr 11. PMID: **15917150**

Article Published Date : Jul 04, 2005

Authors : Ahmet Koyu, Gokhan Cesur, Fehmi Ozguner, Mehmet Akdogan, Hakan Mollaoglu, Sukru Ozen

Study Type : Animal Study
Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

Electromagnetic field exposure may disrupt thyroid function, which is attentuated by zinc supplementation.

Pubmed Data : Am J Orthod. 1970 May ;57(5):538. PMID: **PMC4908750**

Article Published Date : May 01, 1970

Study Type : Human Study
Additional Links
Substances : Zinc : CK(1067) : AC(165)
Pharmacological Actions : Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21) , Radiotoxic : CK(22) : AC(4)

Electromagnetic fields physically alter the thyroid gland at a cellular level.

Pubmed Data : J Exp Biol. 2006 Sep ;209(Pt 17):3322-8. PMID: 16916968

Article Published Date : Sep 01, 2006

Authors : Vesna Rajkovic, Milica Matavulj, Olle Johansson

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

Extremely low frequency electromagnetic fields influence skin and thyroid vasculature.

Pubmed Data : Environ Res. 2005 Nov ;99(3):369-77. PMID: 16307979

Article Published Date : Nov 01, 2005

Authors : Vesna Rajkovic, Milica Matavulj, Olle Johansson

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

In subjects with occupational mobile phone conversation time of more than 33 hours a month, there is a statistically significant greater prevalence of low thyroid stimulating hormone levels.

Pubmed Data : Int J Immunopathol Pharmacol. 2004 May-Aug;17(2 Suppl):31-6. PMID: 15345189

Article Published Date : May 01, 2004

Authors : A Bergamaschi, A Magrini, G Ales, L Coppeta, G Somma

Study Type : Human Study
Additional Links
Diseases : Thyroid Diseases : CK(253) : AC(34)
Additional Keywords : Thyroid Diseases : CK(253) : AC(34)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

Long-term exposure to an electromagnetic field affects bone and thyroid metabolism and also increases oxidative stress index by increasing the total oxidant status and decreasing the antioxidant status.

Pubmed Data : Onco Targets Ther. 2016 ;9:745-54. Epub 2016 Feb 12. PMID: 26929645

Article Published Date : Jan 01, 2016

Authors : Halil Kunt, İhsan Şentürk, Yücel Gönül, Mehmet Korkmaz, Ahmet Ahsen, Ömer Hazman, Ahmet Bal, Abdurrahman Genç, Ahmet Songur

Study Type : Human Study
Additional Links
Diseases : Bone Diseases : CK(18) : AC(6) , Hypothyroidism : CK(584) : AC(90), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21) , Oxidant : CK(122) : AC(48)

Low frequency electromagnetic fields alter the morphology of the rat thyroid gland and induce hypothyroidism.

Pubmed Data : Med Pregl. 2001 Mar-Apr;54(3-4):119-27. PMID: 11759202

Article Published Date : Mar 01, 2001

Authors : V Rajković, M Matavulj, T Lukac, D Gledić, L Babić, B Lazetić

Study Type : Animal Study
Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

Pulse modulated 900 MHz radiation inhibits thyroid hormone secretion and stimulates thyroid cell apoptosis.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1106-16. Epub 2010 Sep 1. PMID: 20807179

Article Published Date : Dec 01, 2010

Authors : Meriç Arda Eşmekaya, Nesrin Seyhan, Suna Ömeroğlu

Study Type : Animal Study

Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Additional Keywords : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Endocrine Disruptor: Thyroid : CK(73) : AC(21), Thyroid Suppressive : CK(18) : AC(5)

There is a relationship between thyroid function and electromagnetic field exposure in computer workers and zinc may protect thyroid function.

Pubmed Data : Open Access Maced J Med Sci. 2016 Jun 15 ;4(2):296-301. Epub 2016 Mar 15. PMID: **27335605**

Article Published Date : Jun 15, 2016

Authors : Ahmed Ibrahim Amin, Noha Mohamed Hegazy, Khadiga Salah Ibrahim, Heba Mahdy-Abdallah, Hamdy A A Hammouda, Eman Essam Shaban

Study Type : Human Study
Additional Links
Substances : Zinc : CK(1067) : AC(165)
Pharmacological Actions : Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

These results suggest that acute sub-thermal radiation at 2.45 GHz may alter levels of cellular stress in rat thyroid gland without initially altering their anti-apoptotic capacity.

Pubmed Data : Biol Open. 2012 Sep 15 ;1(9):831-8. Epub 2012 Jul 9. PMID: **23213477**

Article Published Date : Sep 15, 2012

Authors : María José Misa Agustiño, José Manuel Leiro, María Teresa Jorge Mora, Juan Antonio Rodríguez-González, Francisco Javier Jorge Barreiro, Francisco José Ares-Pena, Elena López-Martín

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21)

Excitotoxic (AC 3) (CK 22)

Microwave radiation enhances excitability of brain structures and influences bioelectric processes of narcotized rats.

Pubmed Data : Bull Exp Biol Med. 2000 Sep ;130(9):835-7. PMID: 11177257

Article Published Date : Sep 01, 2000

Authors : A V Sidorenko, V V Tsaryuk

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Excitotoxic : CK(15) : AC(4)

Mobiel phones modify brain excitability in humans.

Pubmed Data : Ann Neurol. 2006 Aug ;60(2):188-96. PMID: 16802289

Article Published Date : Aug 01, 2006

Authors : Florinda Ferreri, Giuseppe Curcio, Patrizio Pasqualetti, Luigi De Gennaro, Rita Fini, Paolo Maria Rossini

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Excitotoxic : CK(15) : AC(4) , Neurotoxic : CK(1458) : AC(323)

Mobile phone EMFs modulate cortical excitability in patients affected by focal epilepsy.

Pubmed Data : Brain Stimul. 2013 May ;6(3):448-54. Epub 2012 Aug 9. PMID: 22889717

Article Published Date : May 01, 2013

Authors : Mario Tombini, Giovanni Pellegrino, Patrizio Pasqualetti, Giovanni Assenza, Antonella Benvenga, Emma Fabrizio, Paolo Maria Rossini

Study Type : Human Study
Additional Links
Diseases : Epilepsy : CK(530) : AC(137)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Excitotoxic : CK(15) : AC(4) , Neurotoxic : CK(1458) : AC(323)

Genotoxic (AC 81) (CK 291)

1.8 GHz microwaves may enhance UVC-stimulated DNA damage.

Pubmed Data : Toxicology. 2007 Apr 11 ;232(3):311-6. Epub 2007 Feb 3. PMID: 17336440

Article Published Date : Apr 11, 2007

Authors : Wang Baohong, Jin Lifen, Li Lanjuan, Lou Jianlin, Lu Deqiang, Zheng Wei, He Jiliang

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

1800 MHz EMF exposure caused significant genotoxic and cytotoxic effects and was more marked in immature rats.

Pubmed Data : Ecotoxicol Environ Saf. 2012 Jun ;80:140-4. Epub 2012 Mar 9. PMID: 22405939

Article Published Date : Jun 01, 2012

Authors : Vedat Sekeroğlu, Ayşegül Akar, Zülal Atlı Sekeroğlu

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

1800 MHz RF-EMF fields result in cell type-dependent DNA damage and a significant increase in reactive oxygen species level, however researchers conclude it doesn't contribute to cell dysfunction.

Pubmed Data : PLoS One. 2013 ;8(1):e54906. Epub 2013 Jan 23. PMID: 23355902

Article Published Date : Jan 01, 2013

Authors : Shanshan Xu, Guangdi Chen, Chunjing Chen, Chuan Sun, Danying Zhang, Manuel Murbach, Niels Kuster, Qunli Zeng, Zhengping Xu

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

1800 MHz radiofrequency electromagnetic field exposure for 24 hours might induce DNA damage in Chinese hamster lung cells.

Pubmed Data : Zhonghua Yu Fang Yi Xue Za Zhi. 2006 May ;40(3):149-52. PMID: 16836873

Article Published Date : May 01, 2006

Authors : Dan-ying Zhang, Zheng-ping Xu, Huai Chiang, De-qiang Lu, Qun-li Zeng

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

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2 hours of 2.45 GHz radiation induces micronuclei formation above a standard absorption rate of 50W/kg in Chinese hamster ovary cells.

Pubmed Data : ScientificWorldJournal. 2004 Oct 20 ;4 Suppl 2:29-40. Epub 2004 Oct 20. PMID: 15517100

Article Published Date : Oct 20, 2004

Authors : S Koyama, Y Isozumi, Y Suzuki, M Taki, J Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

2.4 GHz electromagnetic field exposure increases DNA oxidation in brain and plasma and plasma protein oxidation in rats. Garlic reduces biomarkers of both DNA and protein oxidation, suggesting it protects against the adverse effects of EMF radiation.

Pubmed Data : Int J Radiat Biol. 2014 Oct ;90(10):892-6. Epub 2014 Jun 25. PMID: 24844368

Article Published Date : Oct 01, 2014

Authors : HaticeŞ Gürler, Birşen Bilgici, Ayşegül K Akar, Leman Tomak, Abdülkerim Bedir

Study Type : Animal Study
Additional Links
Substances : Garlic : CK(1099) : AC(367)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Genoprotective : CK(413) : AC(148) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406), Plant Extracts : CK(11762) : AC(4236) , Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

3G cell phone exposure impacts brain function by inducing oxidative stress, DNA fragmentation, and apoptosis through the p38 MAPK pathway.

Pubmed Data : Cell Biochem Biophys. 2014 Mar ;68(2):347-58. PMID: 23949848

Article Published Date : Mar 01, 2014

Authors : Kavindra Kumar Kesari, Ramovatar Meena, Jayprakash Nirala, Jitender Kumar, H N Verma

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136), Neurologic Disorders : CK(66) : AC(30) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

50 GHz microwave radiation exposure at a specific absorption rate of 0.014 W/kg induces oxidative and genotoxic stress in rats.

Pubmed Data : Indian J Exp Biol. 2010 Jun ;48(6):586-92. PMID: 20882761

Article Published Date : Jun 01, 2010

Authors : Sanjay Kumar, Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 GHz microwave radiation induces oxidative stress and DNA damage in the rat brain.

Pubmed Data : Appl Biochem Biotechnol. 2009 Jul ;158(1):126-39. Epub 2008 Dec 17. PMID: 19089649

Article Published Date : Jul 01, 2009

Authors : Kavindra Kumar Kesari, J Behari

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

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50 Hz electromagnetic fields induce genomic instability in exposed cells.

Pubmed Data : Mutat Res. 2014 Feb ;760:33-41. Epub 2013 Dec 26. PMID: 24374227

Article Published Date : Feb 01, 2014

Authors : Jukka Luukkonen, Anu Liimatainen, Jukka Juutilainen, Jonne Naarala

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

50-MHz magnetic field exposure induces micronuclei formation and superoxide production in a seemingly dose-dependent way.

Pubmed Data : J R Soc Interface. 2016 Jan ;13(114):20150995. PMID: 26791000

Article Published Date : Jan 01, 2016

Authors : Kavindra Kumar Kesari, Jukka Juutilainen, Jukka Luukkonen, Jonne Naarala

Study Type : Human In Vitro
Additional Links
Diseases : Neuroblastoma : CK(86) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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60 Hz sinusoidal magnetic field induces single and double-strand DNA breaks through the involvement of free radicals.

Pubmed Data : Environ Health Perspect. 2004 May ;112(6):687-94. PMID: 15121512

Article Published Date : May 01, 2004

Authors : Henry Lai, Narendra P Singh

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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900 and 1800 MHz induces abnormal cell death in Drosophilia egg chambers.

Pubmed Data : Mutat Res. 2007 Jan 10 ;626(1-2):69-78. Epub 2006 Oct 11. PMID: 17045516

Article Published Date : Jan 10, 2007

Authors : Dimitris J Panagopoulos, Evangelia D Chavdoula, Ioannis P Nezis, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78)

Both extremely low-frequency electromagnetic fields and radiofrequency electromagnetic fields induce DNA damage in vitro, but in different ways.

Pubmed Data : Radiat Res. 2015 Mar ;183(3):305-14. Epub 2015 Feb 17. PMID: 25688995

Article Published Date : Mar 01, 2015

Authors : Weixia Duan, Chuan Liu, Lei Zhang, Mindi He, Shangcheng Xu, Chunhai Chen, Huifeng Pi, Peng Gao, Yanwen Zhang, Min Zhong, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Cell phone electromagnetic field exposure leads to genotoxic damage in human peripheral blood lymphocytes.

Pubmed Data : Bioelectromagnetics. 2003 Feb ;24(2):82-90. PMID: 12524674

Article Published Date : Feb 01, 2003

Authors : Maya Mashevich, Dan Folkman, Amit Kesar, Alexander Barbul, Rafi Korenstein, Eli Jerby, Lydia Avivi

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Cell phones which spread radiofrequency may damage DNA and change gene expression in brain cells, according to this animal study.

Pubmed Data : J Neurooncol. 2012 Jan ;106(1):53-8. Epub 2011 Jul 6. PMID: 21732071

Article Published Date : Jan 01, 2012

Authors : Emin Karaca, Burak Durmaz, Huseyin Aktug, Huseyin Altug, Teoman Yildiz, Candan Guducu, Melis Irgi, Mehtap Gulcihan Cinar Koksal, Ferda Ozkinay, Cumhur Gunduz, Ozgur Cogulu

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Cell-specific redox may explain the differential effects of electromagnetic fields.

Pubmed Data : Curr Med Chem. 2007 ;14(10):1141-52. PMID: 17456027

Article Published Date : Jan 01, 2007

Authors : Myrtill Simkó

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

Cells treated with the combination of 2.45 GHz electromagnetic fields at specific absorption rates from 50 to 200 W/kg and bleomycin exhibited increased hypoxanthine-guanine phosphoribosyl transferase gene mutations

Pubmed Data : J Radiat Res. 2007 Jan ;48(1):69-75. Epub 2006 Dec 19. PMID: 17179647

Article Published Date : Jan 01, 2007

Authors : Shin Koyama, Yoshio Takashima, Tomonori Sakurai, Yukihisa Suzuki, Masao Taki, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

Chronic exposure to microwave radiations cause

statistically significant increase in DNA single strand breaks in brain cells of rat.

Pubmed Data : Mutat Res. 2006 Apr 11 ;596(1-2):76-80. Epub 2006 Feb 2. PMID: 16458332

Article Published Date : Apr 11, 2006

Authors : R Paulraj, J Behari

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Chronic low-intensity microwave exposure in the frequency range of 900 to 2450 MHz leads to cognitive decline and DNA damage in rats.

Pubmed Data : Int J Toxicol. 2015 May-Jun;34(3):284-90. Epub 2015 Mar 5. PMID: 25749756

Article Published Date : May 01, 2015

Authors : Pravin Suryakantrao Deshmukh, Namita Nasare, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Digvijay Singh, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Neurotoxic : CK(1458) : AC(323)

Co-exposure of cells to benzene or its metabolites concomitantly with extremely low frequency electromagnetic fields results in a clear genotoxic effect.

Pubmed Data : Toxicol Lett. 2005 Jun 17 ;157(2):119-28. PMID: 15836999

Article Published Date : Jun 17, 2005

Authors : Massimo Moretti, Milena Villarini, Stefano Simonucci, Cristina Fatigoni, Giuseppina Scassellati-Sforzolini, Silvano Monarca, Rossana Pasquini, Monica Angelucci, Maila Strappini

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Dose-dependent DNA damage resulting from mobile phone radiation is attentuated by pretreatment with melatonin in vitro.

Pubmed Data : Int J Radiat Biol. 2013 Nov ;89(11):993-1001. Epub 2013 Sep 3. PMID: 23952262

Article Published Date : Nov 01, 2013

Authors : Chuan Liu, Peng Gao, Shang-Cheng Xu, Yuan Wang, Chun-Hai Chen, Min-Di He, Zheng-Ping Yu, Lei Zhang, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Genoprotective : CK(413) : AC(148) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406), Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Electromagnetic fields directly activate macrophages, stimulating elevated levels of free radical production. This may lead to downstream carcinogenic, genotoxic, and melatonin-depleting effects.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):83-92. PMID: 15352165

Article Published Date : Sep 01, 2004

Authors : Myrtill Simkó, Mats-Olof Mattsson

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogen : CK(61) : AC(12) , Genotoxic : CK(201) : AC(78) , Immunotoxic : CK(338) : AC(66) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation has significant genotoxic action on human cells.

Pubmed Data : Gen Physiol Biophys. 2019 Sep 13. Epub 2019 Sep 13. PMID: 31516130

Article Published Date : Sep 13, 2019

Authors : Dimitris J Panagopoulos

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Electromagnetic radiation induces oxidative stress and DNA damage in the earthworm.

Pubmed Data : Ecotoxicol Environ Saf. 2013 Apr ;90:7-12. Epub 2013 Jan 24. PMID: 23352129

Article Published Date : Apr 01, 2013

Authors : Mirta Tkalec, Anamaria Stambuk, Maja Srut, Krešimir Malarić, Göran I V Klobučar

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Exposure of quail embryos to 900 MHz results in an overproduction of free radicals and DNA damage.

Pubmed Data : Exp Oncol. 2013 Sep ;35(3):219-25. PMID: 24084462

Article Published Date : Sep 01, 2013

Authors : A Burlaka, O Tsybulin, E Sidorik, S Lukin, V Polishuk, S Tsehmistrenko, I Yakymenko

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

Exposure to 2450 MHz electromagnetic fields increases the incidence of micronuclei.

Pubmed Data : Mutat Res. 2002 Nov 26 ;521(1-2):73-9. PMID: 12438005

Article Published Date : Nov 26, 2002

Authors : Ivancica Trosic, Ivana Busljeta, Vilena Kasuba, Ruzica Rozgaj

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Exposure to a 2.45 GHz field induces DNA damage in rats, evidenced by the presence of micronuclei.

Pubmed Data : Mutagenesis. 2004 Sep ;19(5):361-4. PMID: 15388808

Article Published Date : Sep 01, 2004

Authors : Ivancica Trosic, Ivana Busljeta, B Modlic

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Exposure to electromagnetic fields was positively correlated with increased frequency of increase total micronuclei and micronucleated cells.

Pubmed Data : Mutat Res. 2008 Feb 29 ;650(2):175-80. Epub 2007 Nov 29. PMID: 18248768

Article Published Date : Feb 29, 2008

Authors : Abhay Singh Yadav, Manoj Kumar Sharma

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Extremely low frequency electromagnetic fields increase the frequency of micronucleated polychromatic erythrocyte in mouse bone marrow.

Pubmed Data : Electromagn Biol Med. 2014 Jan ;33(1):51-7. Epub 2013 Jun 19. PMID: 23781994

Article Published Date : Jan 01, 2014

Authors : Miguel Alcaraz, Encarnación Olmos, Miguel Alcaraz-Saura, Daniel G Achel, Julián Castillo

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Extremely low-frequency electromagnetic fields induce DNA strand breaks in Vero cells.

Pubmed Data : J Environ Health Sci Eng. 2014 Jan 8 ;12(1):15. Epub 2014 Jan 8. PMID: 24401758

Article Published Date : Jan 08, 2014

Authors : Cosmin Teodor Mihai, Pincu Rotinberg, Florin Brinza, Gabriela Vochita

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Extremely low-frequency magnetic field increases the ability of hydrogen peroxide to induce mutations in pTN89 plasmids.

Pubmed Data : Mutat Res. 2004 May 9 ;560(1):27-32. PMID: 15099821

Article Published Date : May 09, 2004

Authors : Shin Koyama, Takehisa Nakahara, Hideki Hirose, Gui-Rong Ding, Yoshio Takashima, Yasuhito Isozumi, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Gadolinium induces DNA damage which is enhanced by extremely low frequency electromagnetic fields.

Pubmed Data : Drug Chem Toxicol. 2014 Oct ;37(4):440-7. Epub 2014 Jan 30. PMID: 24479558

Article Published Date : Oct 01, 2014

Authors : Seunghyun Cho, Younghyun Lee, Sunyeong Lee, Young Joo Choi, Hai Won Chung

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Gadolinium : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Gingko Biloba attentuates the genotoxic effects of 1.8 GHz radiofrequency radiation.

Pubmed Data : Sci Total Environ. 2011 Dec 1 ;410-411:59-64. Epub 2011 Oct 19. PMID: 22014767

Article Published Date : Dec 01, 2011

Authors : Meric Arda Esmekaya, Ebru Aytekin, Elcin Ozgur, Göknur Güler, Mehmet Ali Ergun, Suna Omeroğlu, Nesrin Seyhan

Study Type : Human In Vitro
Additional Links
Substances : Ginkgo biloba : CK(936) : AC(218)
Diseases : DNA damage : CK(1482) : AC(545)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450), Radioprotective : CK(1247) : AC(406)
Additional Keywords : Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Higher duration of exposure to 900 MHz RF-EMF leads to increased DNA damage in quail embryos.

Pubmed Data : Int J Radiat Biol. 2013 Sep ;89(9):756-63. Epub 2013 May 13. PMID: 23578013

Article Published Date : Sep 01, 2013

Authors : Olexandr Tsybulin, Evgeniy Sidorik, Olga Brieieva, Lyubov Buchynska, Sergiy Kyrylenko, Diane Henshel, Igor Yakymenko

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA

damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Intermittent mobile phone exposure results in a significant increase in embryonic mortality and cardiac deformity in chicken embryos.

Pubmed Data : Anat Histol Embryol. 2016 Jun ;45(3):197-208. Epub 2015 Jul 14. PMID: 26171674

Article Published Date : Jun 01, 2016

Authors : W Ye, F Wang, W Zhang, N Fang, W Zhao, J Wang

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Abortive : CK(22) : AC(3) , Cardiotoxic : CK(810) : AC(124) , Genotoxic : CK(201) : AC(78)

Long-term exposure to electromagnetic fields at a standard absorption rate of 5.0 W/kg are capable of inducing chromosomal damage in human lymphocytes.

Pubmed Data : Bioelectromagnetics. 2002 Feb ;23(2):113-26. PMID: 11835258

Article Published Date : Feb 01, 2002

Authors : Raymond R Tice, Graham G Hook, Maria Donner, Donald I McRee, Arthur W Guy

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Long-term occupational exposure to ELF-EMFs is likely to

cause genotoxic effects.

Pubmed Data : Mutat Res. 2019 Oct ;846:403079. Epub 2019 Jul 29. PMID: 31585627

Article Published Date : Oct 01, 2019

Authors : Majid Bagheri Hosseinabadi, Narges Khanjani, Mehdi Mirzaii, Pirasteh Norouzi, Amir Atashi

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Low-intensity extremely high frequency electromagnetic radiation induces physiological changes to DNA in exposed cell.s

Pubmed Data : Radiats Biol Radioecol. 2003 Jan-Feb;43(1):87-92. PMID: 12677665

Article Published Date : Jan 01, 2003

Authors : A B Gapeev, K V Lushnikov, Iu V Shumilina, N P Sirota, V B Sadovnikov, N K Chemeris

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Magnetic fields may act as a co-inductor of DNA damage.

Pubmed Data : Electromagn Biol Med. 2009 ;28(2):201-14. PMID: 19811402

Article Published Date : Jan 01, 2009

Authors : Miguel J Ruiz-Gómez, Manuel Martínez-Morillo

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Male rat testes exposed to a 900 MHz electromagnetic field exhibited altered sperm quality and biochemical characteristics.

Pubmed Data : Biotech Histochem. 2016 ;91(1):9-19. Epub 2015 Oct 15. PMID: 26472053

Article Published Date : Jan 01, 2016

Authors : E Odacı, H Hancı, E Yuluğ, S Türedi, Y Aliyazıcıoğlu, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Apoptotic : CK(5217) : AC(3846) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Mice exposed to whole-body radiation at 2450 MHz develop multinucleated cells.

Pubmed Data : Int J Hyg Environ Health. 2001 Nov ;204(2-3):133-8. PMID: **11759156**

Article Published Date : Nov 01, 2001

Authors : I Trosić

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Microwave exposure decreases mitochondrial membrane potential, increases DNA fragmentation, and induces apoptosis via a caspase-3-dependent pathway in vitro.

Pubmed Data : Int J Med Sci. 2014 ;11(5):426-35. Epub 2014 Mar 9. PMID: **24688304**

Article Published Date : Jan 01, 2014

Authors : Hongyan Zuo, Tao Lin, Dewen Wang, Ruiyun Peng, Shuiming Wang, Yabing Gao, Xinping Xu, Yang Li, Shaoxia Wang, Li Zhao, Lifeng Wang, Hongmei Zhou

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Mitochondria : CK(3) : AC(3), Mitochondria : CK(3) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Neurotoxic : CK(1458) : AC(323)

Microwave irradiation led to the melting of double-stranded deoxyoligonucleotides well below their thermal melting temperature independent of the length of the deoxyoligonucleotides.

Pubmed Data : Org Biomol Chem. 2009 Jun 21 ;7(12):2506-8. Epub 2009 May 1. PMID: 19503920

Article Published Date : Jun 21, 2009

Authors : Wesleigh F Edwards, Douglas D Young, Alexander Deiters

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Mobile phone electromagnetic radiation leads to decreases in sperm count, increases in the lipid peroxidation damage in sperm cells, reduction in seminiferous tubules and testicular weight, and DNA damage in rats.

Pubmed Data : Indian J Exp Biol. 2014 Sep ;52(9):890-7. PMID: 25241589

Article Published Date : Sep 01, 2014

Authors : Sanjay Kumar, Jay Prakash Nirala, J Behari, R Paulraj

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Mobile phone exposure (940 MHz) induces DNA changes in calf thymus.

Pubmed Data : Ecotoxicol Environ Saf. 2013 Feb ;88:35-41. Epub 2012 Nov 17. PMID: 23164448

Article Published Date : Feb 01, 2013

Authors : Azadeh Hekmat, Ali Akbar Saboury, Ali Akbar Moosavi-Movahedi

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Mobile phone microwave radiation induces DNA damage evidenced by effects on chromatin conformation.

Pubmed Data : Environ Health Perspect. 2005 Sep ;113(9):1172-7. PMID: 16140623

Article Published Date : Sep 01, 2005

Authors : Eva Markovà, Lena Hillert, Lars Malmgren, Bertil R R Persson, Igor Y Belyaev

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Mobile phone microwave radiation may inhibit DNA repair.

Pubmed Data : Bioelectromagnetics. 2009 Feb ;30(2):129-41. PMID: 18839414

Article Published Date : Feb 01, 2009

Authors : Igor Y Belyaev, Eva Markovà, Lena Hillert, Lars O G Malmgren, Bertil R R Persson

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Mobile phone radiation induces oxidative stress in rat spermatozoa.

Pubmed Data : Appl Biochem Biotechnol. 2011 Jun ;164(4):546-59. Epub 2011 Jan 15. PMID:

21240569

Article Published Date : Jun 01, 2011

Authors : Kavindra Kumar Kesari, Sanjay Kumar, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Superoxide Dismutase Downregulation : CK(12) : AC(2)

Mobile phone radiation leads to cytotoxic and genotoxic damage in both immature and mature rats, with rate of damage being statistically higher in immature rats.

Pubmed Data : Int J Radiat Biol. 2013 Nov ;89(11):985-92. Epub 2013 Jun 21. PMID: 23718180

Article Published Date : Nov 01, 2013

Authors : Zülal Atlı Şekeroğlu, Ayşegül Akar, Vedat Şekeroğlu

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

Mobile phone radiation reduces sperm motility, perm linear velocity, sperm linearity index, and sperm acrosin activity and increases DNA fragmentation in vitro.

Pubmed Data : Int J Fertil Steril. 2015 Apr-Jun;9(1):129-36. Epub 2015 Apr 21. PMID: 25918601

Article Published Date : Apr 01, 2015

Authors : Adel Zalata, Ayman Z El-Samanoudy, Dalia Shaalan, Youssef El-Baiomy, Taymour Mostafa

Study Type : Human In Vitro
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Phase-modulated 1800 MHz electromagnetic field exposure induces genotoxic damage in human lymphocytes.

Pubmed Data : Bioelectromagnetics. 2002 Jan ;23(1):7-13. PMID: 11793401

Article Published Date : Jan 01, 2002

Authors : Guglielmo d'Ambrosio, Rita Massa, Maria Rosaria Scarfi, Olga Zeni

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

RF-EMF can significantly affect DNA transcription in cell- and tissue-specific manner.

Pubmed Data : Electromagn Biol Med. 2019 Sep 21:1-9. Epub 2019 Sep 21. PMID: 31542968

Article Published Date : Sep 21, 2019

Authors : Brunella Del Re, Ferdinando Bersani, Gianfranco Giorgi

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Radiofrequency electromagnetic fields induce chromosomal abnormalities in human peripheral blood lymphocytes.

Pubmed Data : Radiat Res. 2008 Jan ;169(1):28-37. PMID: 18159938

Article Published Date : Jan 01, 2008

Authors : Ronit Mazor, Avital Korenstein-Ilan, Alexander Barbul, Yael Eshet, Avi Shahadi, Eli Jerby, Rafi Korenstein

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Radiofrequency fields at 2.45 GHz can alter gene expression in human cells by a non-thermal mechanism.

Pubmed Data : Mutat Res. 2013 Jan 20 ;750(1-2):27-33. Epub 2012 Oct 8. PMID: 23059817

Article Published Date : Jan 20, 2013

Authors : Dmitry S Pesnya, Anton V Romanovsky

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Radiofrequency radiation at 900 MHz can lead to a perturbation in recombination frequency in mice.

Pubmed Data : Radiat Res. 2001 Nov ;156(5 Pt 1):495-502. PMID: 11604062

Article Published Date : Nov 01, 2001

Authors : P J Sykes, B D McCallum, M J Bangay, A M Hooker, A A Morley

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Radiofrequency radiation induces a wide range of adverse health effects, as substantiated by a significant body of literature.

Pubmed Data : Front Public Health. 2019 ;7:223. Epub 2019 Aug 13. PMID: 31457001

Article Published Date : Jan 01, 2019

Authors : Anthony B Miller, Margaret E Sears, L Lloyd Morgan, Devra L Davis, Lennart Hardell, Mark Oremus, Colin L Soskolne

Study Type : Human Study
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78)

Radiofrequency-electromagnetic field exposure induces DNA damage in a eurkaryotic cell system.

Pubmed Data : Mutagenesis. 2016 Mar ;31(2):187-92. Epub 2015 Oct 17. PMID: 26476436

Article Published Date : Mar 01, 2016

Authors : Bianca Gustavino, Giovanni Carboni, Roberto Petrillo, Giovanni Paoluzzi, Emanuele Santovetti, Marco Rizzoni

Study Type : Plant Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4) , Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Rats exposed to 900, 1800, and 2450 MHz electromagnetic fields exhibit DNA damage in brain tissue.

Pubmed Data : Toxicol Int. 2013 Jan ;20(1):19-24. PMID: 23833433

Article Published Date : Jan 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Sudhir Chandna, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Repeated 915 MHz irradiation could be a cause of DNA breaks in renal and liver cells.

Pubmed Data : Coll Antropol. 2011 Dec ;35(4):1259-64. PMID: 22397269

Article Published Date : Dec 01, 2011

Authors : Ivancica Trosić, Ivan Pavicić, Sanja Milković-Kraus, Marin Mladinić, Davor Zeljezić

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Subjects exposed to radiation from mobile towers exhibit statistically significant elevated levels biomarkers of DNA damage in peripheral blood lymphocytes.

Pubmed Data : Arch Environ Contam Toxicol. 2016 Apr ;70(3):615-25. Epub 2015 Aug 5. PMID: 26238667

Article Published Date : Apr 01, 2016

Authors : Sachin Gulati, Anita Yadav, Neeraj Kumar, Kanupriya, Neeraj K Aggarwal, Rajesh Kumar, Ranjan Gupta

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545) , DNA damage : CK(1482) : AC(545), DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Super-low intensity radiofrequency radiation at microwatt reasonant frequencies resulted in changes in genes and problems with chromatin conformation.

Pubmed Data : Biochim Biophys Acta. 1997 Oct 20 ;1336(3):465-73. PMID: 9367174

Article Published Date : Oct 20, 1997

Authors : Belyaev IYa, Y D Alipov, M Harms-Ringdahl

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Talking on the phone for more than four hours per day and pocketing mobile phones could be a risk factor for sperm DNA fragmentation.

Pubmed Data : J Endocrinol Invest. 2013 Dec ;36(11):970-4. Epub 2013 May 30. PMID: 23722985

Article Published Date : Dec 01, 2013

Authors : R Rago, P Salacone, L Caponecchia, A Sebastianelli, I Marcucci, A E Calogero, R Condorelli, E Vicari, G Morgia, V Favilla, S Cimino, A F Arcoria, S La Vignera

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The adverse effects of electromagnetic fields may be mediated by activation of voltage-gated calcium channels.

Pubmed Data : J Cell Mol Med. 2013 Aug ;17(8):958-65. Epub 2013 Jun 26. PMID: 23802593

Article Published Date : Aug 01, 2013

Authors : Martin L Pall

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48) , Voltage-Gated Calcium Channel Activation : CK(1) : AC(1)

The combined exposure to pulsed magnetic field and

oxidative stress lead to significant decrease of DNA methylation levels at different CpG sites.

Pubmed Data : Radiat Environ Biophys. 2017 05 ;56(2):193-200. Epub 2017 Mar 3. PMID: 28258386

Article Published Date : Jan 01, 2017

Authors : Gianfranco Giorgi, Chiara Pirazzini, Maria Giulia Bacalini, Cristina Giuliani, Paolo Garagnani, Miriam Capri, Ferdinando Bersani, Brunella Del Re

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The data in this study emphasized the dangerous effects of prolonged exposure to both ionized and radiofrequency radiation and indicated that chromosomal aberration analysis should be obligatory for individuals working at radio-relay stations.

Pubmed Data : Acta Med Okayama. 2001 Apr ;55(2):117-27. PMID: 11332198

Article Published Date : Apr 01, 2001

Authors : H Lalić, A Lekić, B Radosević-Stasić

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The genotoxic effects of electromagnetic field exposure may not be due to thermal effects.

Pubmed Data : Mutat Res. 2005 Jun 6 ;583(2):178-83. PMID: 15869902

Article Published Date : Jun 06, 2005

Authors : Elisabeth Diem, Claudia Schwarz, Franz Adlkofer, Oswald Jahn, Hugo Rüdiger

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)

Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

The results of this animal study suggest that low level microwave exposure at frequencies of 900, 1800, and 2450 MHz may lead to hazardous effects on brain.

Pubmed Data : Biomed Environ Sci. 2016 Dec ;29(12):858-867. PMID: **28081746**

Article Published Date : Dec 01, 2016

Authors : Pravin Suryakantrao Deshmukh, Kanu Megha, Namita Nasare, Basu Dev Banerjee, Rafat Sultana Ahmed, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

There is a high variability in response to 1800 MHz electromagnetic radiation between individual lymphocyte samples in vitro.

Pubmed Data : Mutat Res. 2005 Apr 4 ;582(1-2):42-52. PMID: **15781209**

Article Published Date : Apr 04, 2005

Authors : Laura Zotti-Martelli, Mario Peccatori, Valentina Maggini, Michela Ballardin, Roberto Barale

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

These data strongly indicate a genotoxic potential of intermittent EMF.

Pubmed Data : Mutat Res. 2002 Aug 26 ;519(1-2):1-13. PMID: 12160887

Article Published Date : Aug 26, 2002

Authors : Sabine Ivancsits, Elisabeth Diem, Alexander Pilger, Hugo W Rüdiger, Oswald Jahn

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

These findings suggest occupational exposure to pulsed microwaves could cause genetic and cell alterations and that oxidative stress may be one of the possible mechanisms of DNA and cell damage.

Pubmed Data : Int J Hyg Environ Health. 2011 Jan ;214(1):59-65. Epub 2010 Sep 15. PMID: 20833106

Article Published Date : Jan 01, 2011

Authors : Vera Garaj-Vrhovac, Goran Gajski, Senijo Pažanin, Antonio Sarolić, Ana-Marija Domijan, Dubravka Flajs, Maja Peraica

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

These results indicate that microwave radiation represents a potential DNA-damaging hazard.

Pubmed Data : Cell Biol Toxicol. 2009 Feb ;25(1):33-43. Epub 2008 Jan 23. PMID: 18214694

Article Published Date : Feb 01, 2009

Authors : Vera Garaj-Vrhovac, Visnja Orescanin

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201)

: AC(78)

These results suggest that exposure to high-field intensity MRI induces genotoxic effects in human lymphocytes.

Pubmed Data : Bioelectromagnetics. 2011 Oct ;32(7):535-42. Epub 2011 Mar 15. PMID: 21412810

Article Published Date : Oct 01, 2011

Authors : Joong Won Lee, Myeong Seong Kim, Yang Jee Kim, Young Joo Choi, Younghyun Lee, Hai Won Chung

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

These studies investigate micronuclei formation at different specific absorption rates, in conjunction with bleomycin, for 18 hours.

Pubmed Data : Mutat Res. 2003 Nov 10 ;541(1-2):81-9. PMID: 14568297

Article Published Date : Nov 10, 2003

Authors : Shin Koyama, Takehisa Nakahara, Kanako Wake, Masao Taki, Yasuhito Isozumi, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Diseases : Chemotherapy-Induced Toxicity: Bleomycin : CK(60) : AC(25) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78)

This paper discusses the implications of the findings that extremely low frequency electromagnetic fields exhibit genotoxic properties.

Pubmed Data : DNA Repair (Amst). 2004 Oct 5 ;3(10):1385-7. PMID: 15336633

Article Published Date : Oct 05, 2004

Authors : Michael J Crumpton, Andrew R Collins

Study Type : Human In Vitro
Additional Links

Diseases : DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

This review describes the hormetic effects attributed to electromagnetic fields.

Pubmed Data : Sci Total Environ. 2012 Jun 1 ;426:454-8. Epub 2012 Apr 24. PMID: 22534362

Article Published Date : Jun 01, 2012

Authors : Michael Repacholi

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

This review discusses the use of systems biology in understanding the biological effects of electromagnetic fields, with particular focus on induction of genomic instability and cancer.

Pubmed Data : Genes (Basel). 2019 06 25 ;10(6). Epub 2019 Jun 25. PMID: 31242701

Article Published Date : Jan 25, 2019

Authors : Jonne Naarala, Mikko Kolehmainen, Jukka Juutilainen

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78)

This study demonstrated the ability of extremely-low electromagnetic fields to impact fetal development in a tissue-specific way.

Pubmed Data : PLoS One. 2015 ;10(11):e0142259. Epub 2015 Nov 11. PMID: 26559811

Article Published Date : Jan 01, 2015

Authors : Ion Udroiu, Antonio Antoccia, Caterina Tanzarella, Livio Giuliani, Francesca Pacchierotti, Eugenia Cordelli, Patrizia Eleuteri, Paola Villani, Antonella Sgura

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

This study emphasizes the need for a DNA-based biological electromagnetic field exposure threshold and outlines the changes to DNA that can occur even at extremely low levels of exposure.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):71-8. Epub 2009 Mar 5. PMID: 19268550

Article Published Date : Aug 01, 2009

Authors : Martin Blank, Reba Goodman

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Cancers: All : CK(22165) : AC(7896) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Mutagenic : CK(24) : AC(13)

Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation.

Pubmed Data : Fertil Steril. 2011 Nov 22. Epub 2011 Nov 22. PMID: 22112647

Article Published Date : Nov 22, 2011

Authors : Conrado Avendaño, Ariela Mata, César A Sanchez Sarmiento, Gustavo F Doncel

Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Laptop Computer Use : CK(20) : AC(2), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Laptop computers : CK(20) : AC(2)

Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78)

Glutathione Down-Regulation (AC 13) (CK 37)

50 GHz microwave radiation induces oxidative stress and DNA damage in the rat brain.

Pubmed Data : Appl Biochem Biotechnol. 2009 Jul ;158(1):126-39. Epub 2008 Dec 17. PMID: 19089649

Article Published Date : Jul 01, 2009

Authors : Kavindra Kumar Kesari, J Behari

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

900 MHz pulse-modulated radiofrequency radiation induces oxidative stress in rat heart, lung, testis and liver tissues via lipid peroxidation, increased nitric oxide synthase, and antioxidant defense downregulation.

Pubmed Data : Gen Physiol Biophys. 2011 Mar ;30(1):84-9. PMID: 21460416

Article Published Date : Mar 01, 2011

Authors : Meric A Esmekaya, Cigdem Ozer, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Acute 60 Hz electromagnetic field exposure decreases superoxide dismutase and reduced glutathione activity in rats.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1088-94. Epub 2010 Aug 11. PMID: 20701462

Article Published Date : Dec 01, 2010

Authors : Jesús Martínez-Sámano, Patricia V Torres-Durán, Marco A Juárez-Oropeza, David Elías-Viñas, Leticia Verdugo-Díaz

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Animals exposed to 1.8 GHz radiofrequency field exhibit decreases in glutathione peroxidase, superoxide dismutase, and melatonin.

Pubmed Data : Int J Environ Res Public Health. 2015 Feb 12 ;12(2):2071-87. Epub 2015 Feb 12. PMID: 25685954

Article Published Date : Feb 12, 2015

Authors : Honglong Cao, Fenju Qin, Xueguan Liu, Jiajun Wang, Yi Cao, Jian Tong, Heming Zhao

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Oxidant : CK(122) : AC(48)

Exposure to electromagnetic fields far below current exposure limits results in increased biomarkers oxidative stress in rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(3):177-88. PMID: 16954120

Article Published Date : Jan 01, 2006

Authors : Ali Ihsan Yurekli, Mehmed Ozkan, Tunaya Kalkan, Hale Saybasili, Handan Tuncel, Pinar

Atukeren, Koray Gumustas, Selim Seker

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Olive leaf extract reduces oxidative stress and oxidative stress-related glucose metabolism disruption induced by 2.45 GHz Wi-Fi signals.

Pubmed Data : Environ Toxicol Pharmacol. 2013 Nov ;36(3):826-34. Epub 2013 Aug 3. PMID: 23994945

Article Published Date : Nov 01, 2013

Authors : Myriam Ben Salah, Hafedh Abdelmelek, Manef Abderraba

Study Type : Animal Study
Additional Links
Substances : Olive leaf extract : CK(189) : AC(85)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Glutathione Peroxidase 1 (GPx1) Up-Regulation : CK(3) : AC(2), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Superoxide Dismutase Up-regulation : CK(1039) : AC(415) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415), Superoxide Dismutase Up-regulation : CK(1039) : AC(415), Superoxide Dismutase Up-regulation : CK(1039) : AC(415) , Plant Extracts : CK(11762) : AC(4236), Plant Extracts : CK(11762) : AC(4236) , Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

One month of mobile phone radiation induces oxidative stress in the rat brain as demonstrated by elevated TBARS, reduced glutathione activity, and down-regulated antioxidant activity overall.

Pubmed Data : Bratisl Lek Listy. 2014 ;115(5):260-6. PMID: 25174055

Article Published Date : Jan 01, 2014

Study Type : Animal Study

Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Oxidant : CK(122) : AC(48)

Plasma level of lipid peroxides was significantly increased after 1, 2 and 4 h of exposure to radiofrequency fields of the cellular phone in standby position in volunteers.

Pubmed Data : J Pharm Biomed Anal. 2001 Nov ;26(4):605-8. PMID: 11516912

Article Published Date : Nov 01, 2001

Authors : Y M Moustafa, R M Moustafa, A Belacy, S H Abou-El-Ela, F M Ali

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Rats born to mothers exposed to Wi-Fi and cell phone electromagnetic fields exhibit elevated oxidative stress in kidneys and testes and may cause precocious puberty.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):221-9. Epub 2013 Oct 8. PMID: 24101576

Article Published Date : Dec 01, 2013

Authors : Alper Özorak, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Derviş Özçelik, Mehmet Okan Özkaya, Hasan Çetin, Mehmet Cemal Kahya, Seyit Ali Kose

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436), Puberty: Precocious : CK(2) : AC(2)
Additional Keywords : Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43)

: AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats exposed to mobile phone radiation in utero have elevated biomarkers of oxidative stress and histopathological changes in heart tissue.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):390-7. Epub 2014 Aug 28. PMID: **25166431**

Article Published Date : Jan 01, 2015

Authors : Sibel Türedi, Hatice Hancı, Zehra Topal, Deniz Ünal, Tolga Mercantepe, İlyas Bozkurt, Haydar Kaya, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

These findings suggest occupational exposure to pulsed microwaves could cause genetic and cell alterations and that oxidative stress may be one of the possible mechanisms of DNA and cell damage.

Pubmed Data : Int J Hyg Environ Health. 2011 Jan ;214(1):59-65. Epub 2010 Sep 15. PMID: **20833106**

Article Published Date : Jan 01, 2011

Authors : Vera Garaj-Vrhovac, Goran Gajski, Senijo Pažanin, Antonio Sarolić, Ana-Marija Domijan, Dubravka Flajs, Maja Peraica

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) ,

Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

These results suggest that direct chronic exposure to mobile phone caused severe biochemical and histopathological changes in the rat brain.

Pubmed Data : J Chem Neuroanat. 2016 12 ;78:10-19. Epub 2016 Jul 26. PMID: 27474378

Article Published Date : Jan 12, 2016

Authors : Shaymaa Hussein, Abdel-Aleem El-Saba, Mona K Galal

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Cyclooxygenase 2 Inhibitors : CK(1114) : AC(645) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Inflammatory : CK(312) : AC(92) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Neurotoxic : CK(1458) : AC(323) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Wi-Fi radiation leads to DNA damage in rat testes.

Pubmed Data : J Pediatr Urol. 2013 Apr ;9(2):223-9. Epub 2012 Mar 30. PMID: 22465825

Article Published Date : Apr 01, 2013

Authors : Halil I Atasoy, Mehmet Y Gunal, Pinar Atasoy, Serenay Elgun, Guler Bugdayci

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Hematoxic (AC 4) (CK 11)

2.45 GHz electromagnetic field induces a stress response in the rat hematopoietic system.

Pubmed Data : Toxicol Lett. 2004 Dec 1 ;154(1-2):125-32. PMID: 15475186

Article Published Date : Dec 01, 2004

Authors : Ivancica Trosic, Ivana Busljeta, Ivan Pavicic

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Hematoxic : CK(22) : AC(2)

Millimeter waves induces pathological reactions in the liver of experimental animals as reflected by hepatic biochemical indices and dystrophic and microcirculatory alterations in liver tissue.

Pubmed Data : Bull Exp Biol Med. 2018 Sep ;165(5):692-694. Epub 2018 Sep 17. PMID: 30225701

Article Published Date : Sep 01, 2018

Authors : B B Bantysh, A Yu Krylov, T I Subbotina, A A Khadartsev, D V Ivanov, A A Yashin

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hematoxic : CK(22) : AC(2) , Hepatotoxic : CK(335) : AC(96)

Mobile phone electromagnetic fields alter oxygen affinity and tertiary structure of normal human hemoglobin.

Pubmed Data : Int J Biol Macromol. 2009 Apr 1 ;44(3):278-85. PMID: 19263507

Article Published Date : Apr 01, 2009

Authors : Seyed Jafar Mousavy, Gholam Hossein Riazi, Mahmood Kamarei, Hadi Aliakbarian, Naghmeh Sattarahmady, Ahmad Sharifizadeh, Shahrokh Safarian, Faizan Ahmad, Ali Akbar Moosavi-Movahedi

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hematoxic : CK(22) : AC(2)

Mobile phone jammers alter blood cell factors.

Pubmed Data : J Biomed Phys Eng. 2018 Dec ;8(4):403-408. Epub 2018 Dec 1. PMID: 30568930

Article Published Date : Dec 01, 2018

Authors : M B Shojaeifard, S Jarideh, M Owjfard, S Nematollahii, T Talaei-Khozani, M Malekzadeh

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hematoxic : CK(22) : AC(2)

Hepatotoxic (AC 8) (CK 15)

Chronic 2450 MHz RF-EMF fields exposure leads to adverse effects on the liver including occasional necrosis and inflammatory infiltrate.

Pubmed Data : J Toxicol Environ Health A. 2015 ;78(6):353-6. PMID: 25734762

Article Published Date : Jan 01, 2015

Authors : K Holovská, V Almášiová, V Cigánková, K Beňová, E Račeková, M Martončíková

Study Type : Animal Study
Additional Links
Additional Keywords : , , , , ,
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Inflammatory : CK(312) : AC(92), Necrotic : CK(5) : AC(3)

Exposure to static magnetic fields induced hepatocyte apoptosis through a caspase-independent pathway involving mitochondrial apoptosis-inducing factor but not in the brain.

Pubmed Data : Environ Sci Pollut Res Int. 2015 Oct ;22(20):16060-6. Epub 2015 Jun 12. PMID: 26062464

Article Published Date : Oct 01, 2015

Authors : Soumaya Ghodbane, Mohamed Ammari, Aida Lahbib, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Extremely low-frequency electromagnetic fields induce oxidative stress in liver rat tissue.

Pubmed Data : Cell Biochem Biophys. 2011 Mar ;59(2):71-7. PMID: 20824388

Article Published Date : Mar 01, 2011

Authors : Mustafa Emre, Salih Cetiner, Sevil Zencir, Isa Unlukurt, Ibrahim Kahraman, Zeki Topcu

Study Type : In Vitro Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Oxidant : CK(122) : AC(48)

Long-term ELF-MF exposure may enhance the oxidative/nitrosative stress in liver tissue of the female rats.

Pubmed Data : J Radiat Res. 2008 Mar ;49(2):181-7. PMID: 18367817

Article Published Date : Mar 01, 2008

Authors : Nurten Erdal, Serkan Gürgül, Lülüfer Tamer, Lokman Ayaz

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Oxidant : CK(122) : AC(48)

Magnetic fields induce morphological changes in the rat liver which to which melatonin has a mild protective effect.

Pubmed Data : Okajimas Folia Anat Jpn. 2002 May ;79(1):25-31. PMID: 12199535

Article Published Date : May 01, 2002

Authors : Alpaslan Gökcimen, Fehmi Ozgüner, Erdal Karaöz, Sükrü Ozen, Gülsen Aydin

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Pharmacological Actions : Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Hepatotoxic : CK(335) : AC(96)

Millimeter waves induces pathological reactions in the liver of experimental animals as reflected by hepatic biochemical indices and dystrophic and microcirculatory alterations in liver tissue.

Pubmed Data : Bull Exp Biol Med. 2018 Sep ;165(5):692-694. Epub 2018 Sep 17. PMID: 30225701

Article Published Date : Sep 01, 2018

Authors : B B Bantysh, A Yu Krylov, T I Subbotina, A A Khadartsev, D V Ivanov, A A Yashin

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hematoxic : CK(22) : AC(2) , Hepatotoxic : CK(335) : AC(96)

Mobile phone exposure induces oxidative stress in the brain, kidneys, and liver and also increases liver enzyme activity.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):279-84. Epub 2014 Apr 8. PMID: 24712749

Article Published Date : Jan 01, 2015

Authors : Merhan Mamdouh Ragy

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , GGT : CK(63) : AC(9) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Radiofrequency radiation at 40 kHz induced hepatic injury in LEC rats.

Pubmed Data : J Vet Med Sci. 2011 Mar ;73(3):299-304. Epub 2010 Oct 13. PMID: 20953126

Article Published Date : Mar 01, 2011

Authors : Hiroshi Sakai, Noboru Horiguchi, Daiji Endoh, Kenji Nakayama, Masanobu Hayashi

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96)

Hypertensive (AC 1) (CK 10)

The reaction of the circulatory system to stress and electromagnetic fields emitted by mobile phones.

Pubmed Data : Med Pr. 2019 Jul 16 ;70(4):411-424. Epub 2019 Jun 27. PMID: 31249426

Article Published Date : Jul 15, 2019

Authors : Agata Szyjkowska, Elzbieta Gadzicka, Wiesław Szymczak, Alicja Bortkiewicz

Study Type : Human Study
Additional Links
Diseases : Electromagnetic Radiation : CK(136) : AC(22)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Hypertensive : CK(184) : AC(21)

Hypoglycemic (AC 1) (CK 2)

Short term exposure to mobile phone jammer radiation

has a hypoglycemic effect on adult male rats.

Pubmed Data : J Biomed Phys Eng. 2016 Mar ;6(1):27-32. Epub 2016 Mar 1. PMID: 27026952

Article Published Date : Mar 01, 2016

Authors : F Shekoohi Shooli, S A R Mortazavi, S Jarideh, S Nematollahii, F Yousefi, M Haghani, S M J Mortazavi, M B Shojaei-Fard

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hypoglycemic : CK(12) : AC(2)

Hypoxia (AC 1) (CK 2)

Ultra-high frequency electromagnetic radiation influences mitochondrial function through superoxide generation, formation of iron-nitrosyl complexes, and induction of cellular hypoxia as a result of electron transport chain abnormalities.

Pubmed Data : Int J Radiat Biol. 2014 May ;90(5):357-62. PMID: 24597749

Article Published Date : May 01, 2014

Authors : Anatoly Burlaka, Marina Selyuk, Marat Gafurov, Sergei Lukin, Viktoria Potaskalova, Evgeny Sidorik

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondria : CK(3) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hypoxia : CK(3) : AC(2) , Oxidant : CK(122) : AC(48)

Immunoreactive (AC 5) (CK 20)

Exposure of rats to extremely low-frequency electromagnetic fields (ELF-EMF) alters cytokines production.

Pubmed Data : Electromagn Biol Med. 2013 Mar ;32(1):1-8. Epub 2012 Oct 9. PMID: 23046051

Article Published Date : Feb 28, 2013

Authors : Iraj Salehi, Karim Ghazikhanlou Sani, Alireza Zamani

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33)

Immune activity of responding lymphocytes and monocytes can be intensified by 900 MHz microwaves.

Pubmed Data : Electromagn Biol Med. 2006 ;25(1):45-51. PMID: 16595333

Article Published Date : Jan 01, 2006

Authors : Wanda Stankiewicz, Marek P Dabrowski, Roman Kubacki, Elzbieta Sobiczewska, Stanisław Szmigielski

Study Type : Human In Vitro
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33) , Immunotoxic : CK(338) : AC(66)

Long-term exposure to low-density ELF-EMF may cause a decrease in adaptive immune response, especially in Th1 subset.

Pubmed Data : Electromagn Biol Med. 2019 ;38(1):84-95. Epub 2018 Dec 6. PMID: 30518268

Article Published Date : Dec 31, 2018

Authors : Hanie Mahaki, Hamid Tanzadehpanah, Naghi Jabarivasal, Khosro Sardanian, Alireza Zamani

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33)

Microwave radiation by mobile phones may enhance allergen-induced wheal responses in association with substance P and vasoactive intestinal peptide in patients with atopic eczema/dermatitis syndrome.

Pubmed Data : Int Arch Allergy Immunol. 2002 Dec ;129(4):348-50. PMID: 12483040

Article Published Date : Dec 01, 2002

Authors : Hajime Kimata

Study Type : Human Study
Additional Links
Diseases : Atopic Dermatitis : CK(1422) : AC(182) , Eczema : CK(1423) : AC(183)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33)

Millimeter waves induce a Th1 type immune response in rats.

Pubmed Data : Bioelectromagnetics. 2003 Jul ;24(5):356-65. PMID: 12820293

Article Published Date : Jul 01, 2003

Authors : Vera Makar, Mahendra Logani, Imre Szabo, Marvin Ziskin

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33) , Immunotoxic : CK(338) : AC(66)

Immunotoxic (AC 13) (CK 46)

Electromagnetic field exposure may induce DNA damage, stimulate inflammation, and impact cell proliferation and differentiation.

Pubmed Data : Electromagn Biol Med. 2019 Aug 26:1-18. Epub 2019 Aug 26. PMID: 31450976

Article Published Date : Aug 26, 2019

Authors : Henry Lai

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Cell Cycle Inhibitor : CK(3) : AC(3) , Cytotoxic : CK(89) : AC(53) , Immunotoxic : CK(338) : AC(66) , Inflammatory : CK(312) : AC(92)

Electromagnetic fields directly activate macrophages, stimulating elevated levels of free radical production. This may lead to downstream carcinogenic, genotoxic, and melatonin-depleting effects.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):83-92. PMID: 15352165

Article Published Date : Sep 01, 2004

Authors : Myrtill Simkó, Mats-Olof Mattsson

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogen : CK(61) : AC(12) , Genotoxic : CK(201) : AC(78) , Immunotoxic : CK(338) : AC(66) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Electromagnetic fields disturb the immune system and alter tissue repair processes.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):157-77. Epub 2009 Apr 23. PMID: 19398310

Article Published Date : Aug 01, 2009

Authors : Olle Johansson

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Electromagnetic signals may affect the functional

capacity of the peripheral blood mononuclear cells by changing their adhesion ability.

Pubmed Data : Bratisl Lek Listy. 2009 ;110(9):526-9. PMID: **19827334**

Article Published Date : Jan 01, 2009

Authors : Ayten Atasoy, Yusuf Sevim, Ismail Kaya, Mustafa Yilmaz, Ahmet Durmus, Mehmet Sonmez, S B Omay, Feyyaz Ozdemir, Ercüment Ovali

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

GSM mobile phone radiation induces the expression of Epstein-Barr virus early antigens which are linked to various cancers.

Pubmed Data : Biomed Environ Sci. 2013 Jan ;26(1):76-8. PMID: **23294619**

Article Published Date : Jan 01, 2013

Authors : Yang Liu, Ming Lian Wang, Ru Gang Zhong, Xue Mei Ma, Qun Wang, Yi Zeng

Study Type : Human In Vitro
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Epstein-Barr Virus Infections : CK(132) : AC(47)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Immune activity of responding lymphocytes and monocytes can be intensified by 900 MHz microwaves.

Pubmed Data : Electromagn Biol Med. 2006 ;25(1):45-51. PMID: **16595333**

Article Published Date : Jan 01, 2006

Authors : Wanda Stankiewicz, Marek P Dabrowski, Roman Kubacki, Elzbieta Sobiczewska, Stanisław Szmigielski

Study Type : Human In Vitro
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33) , Immunotoxic : CK(338) : AC(66)

Low-intensity extremely high frequency electromagnetic radiation has a profound effect on immunity.

Pubmed Data : Biofizika. 2002 Jan-Feb;47(1):71-7. PMID: 11855293

Article Published Date : Jan 01, 2002

Authors : M P Kolomytseva, A B Gapeev, V B Sadovnikov, N K Chemeris

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Low-intensity extremely-high-frequency electromagnetic radiation influences immunogenesis under multiple repeated exposures in healthy mice.

Pubmed Data : Biofizika. 2001 Jul-Aug;46(4):753-60. PMID: 11558390

Article Published Date : Jul 01, 2001

Authors : K V Lushnikov, A B Gapeev, V B Sadovnikov, N K Cheremis

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Millimeter waves induce a Th1 type immune response in rats.

Pubmed Data : Bioelectromagnetics. 2003 Jul ;24(5):356-65. PMID: 12820293

Article Published Date : Jul 01, 2003

Authors : Vera Makar, Mahendra Logani, Imre Szabo, Marvin Ziskin

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunoreactive : CK(167) : AC(33) , Immunotoxic : CK(338) : AC(66)

Mobile phone radiofrequency may alter immune function

in the elderly.

Pubmed Data : Ann N Y Acad Sci. 2006 May ;1067:493-9. PMID: 16804032

Article Published Date : May 01, 2006

Authors : Miriam Capri, Stefano Salvioli, Serena Altilia, Federica Sevini, Daniel Remondini, Pietro Mesirca, Ferdinando Bersani, Daniela Monti, Claudio Franceschi

Study Type : Human Study
Additional Links
Diseases : Aging : CK(2716) : AC(676)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

These results indicate a decrease in phagocytic activity and an increase in inflammatory and cytotoxic responses in macrophages after continuous and combined exposure of multiple radiofrequency signals.

Pubmed Data : Int J Radiat Biol. 2018 06 ;94(6):607-618. Epub 2018 Apr 30. PMID: 29659305

Article Published Date : Jan 01, 2018

Authors : Alberto López-Furelos, Aarón A Salas-Sánchez, Francisco J Ares-Pena, José M Leiro-Vidal, Elena López-Martín

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

This Russian study adds further evidence to the association between autoimmunity and electromagnetic radiation.

Pubmed Data : Radiats Biol Radioecol. 2010 Jan-Feb;50(1):17-21. PMID: 20297676

Article Published Date : Jan 01, 2010

Authors : A A Ivanov, Iu G Grigor'ev, V N Mal'tsev, A M Ulanova, N M Stavrakova, V G Skachkova, O A Grigor'ev

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

This study adds evidence that electromagnetic fields may contribute to autoimmunity.

Pubmed Data : Bioelectromagnetics. 2010 Dec ;31(8):589-602. Epub 2010 Sep 20. PMID: 20857454

Article Published Date : Dec 01, 2010

Authors : Yury G Grigoriev, Oleg A Grigoriev, Alexander A Ivanov, Antonina M Lyaginskaya, Anton V Merkulov, Natalia B Shagina, Vyacheslav N Maltsev, Philippe Lévêque, Alla M Ulanova, Vyacheslav A Osipov, Alexander V Shafirkin

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(8201) : AC(1511)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Immunotoxic : CK(338) : AC(66)

Inflammatory (AC 13) (CK 30)

1800 MHz radiofrequency fields stimulates pro-inflammatory responses in microglia and astrocytes in vitro.

Pubmed Data : PLoS One. 2014 ;9(9):e108318. Epub 2014 Oct 2. PMID: 25275372

Article Published Date : Jan 01, 2014

Authors : Yonghui Lu, Mindi He, Yang Zhang, Shangcheng Xu, Lei Zhang, Yue He, Chunhai Chen, Chuan Liu, Huifeng Pi, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation : CK(6531) : AC(1986)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cycloogenase-2 enzyme upregulation : CK(1) : AC(1) , Inflammatory : CK(312) : AC(92), Interleukin-1 up-regulation : CK(2) : AC(1) , Interleukin-6 up-regulation : CK(18) : AC(5), Prostaglandin E2 up-regulation : CK(2) : AC(1) , Tumor necrosis factorα

(TNFα) up-regulation : CK(55) : AC(7)

2.45 GHz EMF exposure can initiate the activation of rat microglia cells and STAT3 signalling involves in EMF-induced microglial activation.

Pubmed Data : Int J Radiat Biol. 2010 Jan ;86(1):27-36. PMID: **20070213**

Article Published Date : Jan 01, 2010

Authors : Yutong Hao, Xuesen Yang, Chunhai Chen, Yuan-Wang, Xubu Wang, Maoquan Li, Zhengping Yu

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation: Brain : CK(8) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Neurotoxic : CK(1458) : AC(323)

2.45 GHz radiation exposure resulted in decreased protein kinase C activity in the hippocampus and increase in glial cell count in exposed rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(1):61-70. PMID: **16595335**

Article Published Date : Jan 01, 2006

Authors : R Paulraj, J Behari

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Inflammatory : CK(312) : AC(92)

50-Hz electromagnetic fields increase free radical release and IL-1B production by mouse macrophages.

Pubmed Data : J Cell Biochem. 2006 Sep 1 ;99(1):168-77. PMID: **16598759**

Article Published Date : Sep 01, 2006

Authors : Jana Frahm, Magaréta Lantow, Madeleine Lupke, Dieter G Weiss, Myrtill Simkó

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Oxidant : CK(122) : AC(48)

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900 MHz electromagnetic fields affect NF-kB induced inflammation and metabolic activity of melatonin.

Pubmed Data : J Microsc Ultrastruct. 2017 Oct-Dec;5(4):177-184. Epub 2017 Sep 14. PMID: 30023252

Article Published Date : Oct 01, 2017

Authors : Aymen A Warille, Gamze Altun, Abdalla A Elamin, Arife Ahsen Kaplan, Hamza Mohamed, Kıymet Kübra Yurt, Abubaker El Elhaj

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Melatonin Interference : CK(2) : AC(2)

Cell phone exposure 8 hours a day for 20 days produces kidney tissue damage in rats.

Pubmed Data : Urol J. 2013 ;10(2):886-91. PMID: 23801472

Article Published Date : Jan 01, 2013

Authors : Orhan Koca, Ali Murat Gökçe, Metin Ishak Öztürk, Feriha Ercan, Necati Yurdakul, Muhammet Ihsan Karaman

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64)
Additional Keywords : Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Renotoxic : CK(26) : AC(9)

Chronic 2450 MHz RF-EMF fields exposure leads to adverse effects on the liver including occasional necrosis and inflammatory infiltrate.

Pubmed Data : J Toxicol Environ Health A. 2015 ;78(6):353-6. PMID: 25734762

Article Published Date : Jan 01, 2015

Authors : K Holovská, V Almášiová, V Cigánková, K Beňová, E Račeková, M Martončíková

Study Type : Animal Study
Additional Links
Additional Keywords : , , , , ,
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Inflammatory : CK(312) : AC(92), Necrotic : CK(5) : AC(3)

Electromagnetic field exposure may induce DNA damage, stimulate inflammation, and impact cell proliferation and differentiation.

Pubmed Data : Electromagn Biol Med. 2019 Aug 26:1-18. Epub 2019 Aug 26. PMID: **31450976**

Article Published Date : Aug 26, 2019

Authors : Henry Lai

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Cell Cycle Inhibitor : CK(3) : AC(3) , Cytotoxic : CK(89) : AC(53) , Immunotoxic : CK(338) : AC(66), Inflammatory : CK(312) : AC(92)

Electromagnetic radiation induces structural changes in the brains of rats and impacts redox and inflammatory systems.

Pubmed Data : Turk Neurosurg. 2013 ;23(6):707-15. PMID: **24310452**

Article Published Date : Jan 01, 2013

Authors : Olcay Eser, Ahmet Songur, Cevat Aktas, Ergun Karavelioglu, Veli Caglar, Firdevs Aylak, Fehmi Ozguner, Mehmet Kanter

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Interleukin-1 beta downregulation : CK(1743) : AC(868)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Inflammatory : CK(312) : AC(92), Oxidant : CK(122) : AC(48)

Low-power microwave exposure may act on human mast cells by altering gene expression via a mechanism involving activation of protein kinase C, and at temperatures well below those known to induce a heat shock response.

Pubmed Data : Cell Biol Int. 2000 ;23(11):739-48. PMID: 10736198

Article Published Date : Jan 01, 2000

Authors : C Harvey, P W French

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92)

Mobile phone electromagnetic fields may contribute to inflammation of bladder tissue.

Pubmed Data : Int Braz J Urol. 2014 Jul-Aug;40(4):520-5. PMID: 25251956

Article Published Date : Jul 01, 2014

Authors : Orhan Koca, Ali Murat Gokce, Mehmet Akyuz, Feriha Ercan, Necati Yurdakul, Muhammet Ihsan Karaman

Study Type : Animal Study
Additional Links
Diseases : Interstitial Cystitis : CK(146) : AC(18)
Additional Keywords : Interstitial Cystitis : CK(146) : AC(18)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92)

Pulsed electromagnetic fields induce microglia polarization and inflammation in the brain.

Pubmed Data : J Biol Regul Homeost Agents. 2019 Jul-Aug;33(4):1051-1062. PMID: 31392878

Article Published Date : Jul 01, 2019

Authors : X J Zhang, M M Lv, X Q Zhu, L Y Tian, J J Li, Y P Shao, C J Gao, X D Sun

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Neurotoxic : CK(1458) : AC(323)

These results suggest that direct chronic exposure to mobile phone caused severe biochemical and histopathological changes in the rat brain.

Pubmed Data : J Chem Neuroanat. 2016 12 ;78:10-19. Epub 2016 Jul 26. PMID: 27474378

Article Published Date : Jan 12, 2016

Authors : Shaymaa Hussein, Abdel-Aleem El-Saba, Mona K Galal

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Cyclooxygenase 2 Inhibitors : CK(1114) : AC(645) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Inflammatory : CK(312) : AC(92) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Neurotoxic : CK(1458) : AC(323) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Interleukin-1 up-regulation (AC 1) (CK 5)

1800 MHz radiofrequency fields stimulates pro-inflammatory responses in microglia and astrocytes in vitro.

Pubmed Data : PLoS One. 2014 ;9(9):e108318. Epub 2014 Oct 2. PMID: 25275372

Article Published Date : Jan 01, 2014

Authors : Yonghui Lu, Mindi He, Yang Zhang, Shangcheng Xu, Lei Zhang, Yue He, Chunhai Chen, Chuan Liu, Huifeng Pi, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation : CK(6531) : AC(1986)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cycloogenase-2 enzyme upregulation : CK(1) : AC(1) , Inflammatory : CK(312) : AC(92), Interleukin-1 up-regulation : CK(2) : AC(1) , Interleukin-6 up-regulation : CK(18) : AC(5), Prostaglandin E2 up-regulation : CK(2) : AC(1) , Tumor necrosis factorα (TNFα) up-regulation : CK(55) : AC(7)

Interleukin-6 up-regulation (AC 1) (CK 5)

1800 MHz radiofrequency fields stimulates pro-inflammatory responses in microglia and astrocytes in vitro.

Pubmed Data : PLoS One. 2014 ;9(9):e108318. Epub 2014 Oct 2. PMID: 25275372

Article Published Date : Jan 01, 2014

Authors : Yonghui Lu, Mindi He, Yang Zhang, Shangcheng Xu, Lei Zhang, Yue He, Chunhai Chen, Chuan Liu, Huifeng Pi, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation : CK(6531) : AC(1986)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cycloogenase-2 enzyme upregulation : CK(1) : AC(1) , Inflammatory : CK(312) : AC(92), Interleukin-1 up-regulation : CK(2) : AC(1) , Interleukin-6 up-regulation : CK(18) : AC(5), Prostaglandin E2 up-regulation : CK(2) : AC(1) , Tumor necrosis factorα (TNFα) up-regulation : CK(55) : AC(7)

MCP-1 (CCL2) up-regulation (AC 1) (CK 5)

Extremely low frequency electromagnetic fields alter the expression of MCP-1 in certain cell types.

Pubmed Data : Saudi J Biol Sci. 2015 Jan ;22(1):75-84. Epub 2014 Aug 6. PMID: 25561888

Article Published Date : Jan 01, 2015

Authors : C D'Angelo, E Costantini, M A Kamal, M Reale

Study Type : Human In Vitro
Additional Links
Additional Keywords :
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : MCP-1 (CCL2) up-regulation : CK(2) : AC(1)

Malondialdehyde (MDA) Up-Regulation (AC 21) (CK 56)

50 days of exposure to 3 MT electromagnetic field induces oxidative stress and lipid peroxidation in rats, which is attentuated by vitamin E.

Pubmed Data : Basic Clin Neurosci. 2016 Oct ;7(4):315-322. PMID: 27872692

Article Published Date : Oct 01, 2016

Authors : Ahmad Ali Ghanbari, Kobra Shabani, Daryoush Mohammad Nejad

Study Type : Animal Study
Additional Links
Substances : Vitamin E : CK(2077) : AC(371)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

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900 MHz pulse-modulated radiofrequency radiation induces oxidative stress in rat heart, lung, testis and liver tissues via lipid peroxidation, increased nitric oxide synthase, and antioxidant defense downregulation.

Pubmed Data : Gen Physiol Biophys. 2011 Mar ;30(1):84-9. PMID: 21460416

Article Published Date : Mar 01, 2011

Authors : Meric A Esmekaya, Cigdem Ozer, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Electromagnetic field exposure increases oxidative stress and lipid peroxidation in the American cockroach.

Pubmed Data : J Comp Physiol A Neuroethol Sens Neural Behav Physiol. 2018 06 ;204(6):605-611. Epub 2018 May 2. PMID: 29721708

Article Published Date : Jan 01, 2018

Authors : Justyna Maliszewska, Patrycja Marciniak, Hanna Kletkiewicz, Joanna Wyszkowska, Anna Nowakowska, Justyna Rogalska

Study Type : Insect Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Electronic equipment repairers, exposed to ELF-EMF, are at a risk of oxidative stress and sleep insufficiency, which could be explained by lower plasma melatonin levels and higher MDA levels.

Pubmed Data : Indian J Occup Environ Med. 2010 Sep ;14(3):66-70. PMID: 21461157

Article Published Date : Sep 01, 2010

Authors : Mohamed El-Helaly, E Abu-Hashem

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Exposure to an 1800 MHz electromagnetic field slightly increases malondialdehyde levels in the kidney, brain, and liver in healthy and inflamed rats.

Pubmed Data : Int J Occup Med Environ Health. 2015 ;28(4):751-9. PMID: 26216313

Article Published Date : Jan 01, 2015

Authors : Paweł Bodera, Wanda Stankiewicz, Bożena Antkowiak, Małgorzata Paluch, Jarosław Kieliszek, Jaromir Sobiech, Marcin Niemcewicz

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Exposure to electromagnetic fields far below current exposure limits results in increased biomarkers oxidative stress in rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(3):177-88. PMID: 16954120

Article Published Date : Jan 01, 2006

Authors : Ali Ihsan Yurekli, Mehmed Ozkan, Tunaya Kalkan, Hale Saybasili, Handan Tuncel, Pinar Atukeren, Koray Gumustas, Selim Seker

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Exposure to static magnetic fields induced hepatocyte apoptosis through a caspase-independent pathway involving mitochondrial apoptosis-inducing factor but not in the brain.

Pubmed Data : Environ Sci Pollut Res Int. 2015 Oct ;22(20):16060-6. Epub 2015 Jun 12. PMID: 26062464

Article Published Date : Oct 01, 2015

Authors : Soumaya Ghodbane, Mohamed Ammari, Aida Lahbib, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Exposure to static magnetic fields induced oxidative stress in rat kidneys that can be prevented by treatment with selenium or vitamin E.

Pubmed Data : Gen Physiol Biophys. 2015 Jan ;34(1):23-32. Epub 2014 Nov 14. PMID: 25395602

Article Published Date : Jan 01, 2015

Authors : Soumaya Ghodbane, Aida Lahbib, Mohamed Ammari, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188) , Vitamin E : CK(2077) : AC(371)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Nephrotoxic : CK(179) : AC(43) , Oxidant : CK(122) : AC(48)

Melatonin prevents liver injury by microwave radiation in rats.

Pubmed Data : Bratisl Lek Listy. 2015 ;116(2):96-100. PMID: 25665474

Article Published Date : Jan 01, 2015

Authors : B Djordjevic, D Sokolovic, G Kocic, A Veljkovic, M Despotovic, J Basic, T Jevtovic-Stoimenov, D M Sokolovic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Additional Keywords : Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Mobile phone exposure induces oxidative stress in the brain, kidneys, and liver and also increases liver enzyme activity.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):279-84. Epub 2014 Apr 8. PMID: **24712749**

Article Published Date : Jan 01, 2015

Authors : Merhan Mamdouh Ragy

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , GGT : CK(63) : AC(9) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Mobile phone radiation exposure increases oxidative stress as evidenced by increased protein carbonyl and malondialdehyde, coupled with impaired cognition.

Pubmed Data : Indian J Biochem Biophys. 2013 Apr ;50(2):114-9. PMID: **23720885**

Article Published Date : Apr 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Basu Dev Banerjee, Mahesh Pandurang Abegaonkar,

Kanu Megha, Rafat Sultana Ahmed, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Oxidant : CK(122) : AC(48)

Mobile phone radiation induces oxidative stress in rat spermatozoa.

Pubmed Data : Appl Biochem Biotechnol. 2011 Jun ;164(4):546-59. Epub 2011 Jan 15. PMID: 21240569

Article Published Date : Jun 01, 2011

Authors : Kavindra Kumar Kesari, Sanjay Kumar, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Superoxide Dismutase Downregulation : CK(12) : AC(2)

Olive leaf extract reduces oxidative stress and oxidative stress-related glucose metabolism disruption induced by 2.45 GHz Wi-Fi signals.

Pubmed Data : Environ Toxicol Pharmacol. 2013 Nov ;36(3):826-34. Epub 2013 Aug 3. PMID: 23994945

Article Published Date : Nov 01, 2013

Authors : Myriam Ben Salah, Hafedh Abdelmelek, Manef Abderraba

Study Type : Animal Study
Additional Links
Substances : Olive leaf extract : CK(189) : AC(85)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Glutathione Peroxidase 1 (GPx1) Up-Regulation : CK(3) : AC(2), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Superoxide Dismutase Up-regulation : CK(1039) : AC(415) , Superoxide

Dismutase Up-regulation : CK(1039) : AC(415), Superoxide Dismutase Up-regulation : CK(1039) : AC(415), Superoxide Dismutase Up-regulation : CK(1039) : AC(415) , Plant Extracts : CK(11762) : AC(4236), Plant Extracts : CK(11762) : AC(4236) , Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Prenatal cell phone radiation exposure leads to elevated thymus and spleen malondialdehyde levels in 21-day-old male rats.

Pubmed Data : Biotech Histochem. 2015 ;90(7):535-43. Epub 2015 May 19. PMID: 25985826

Article Published Date : Jan 01, 2015

Authors : H Hancı, S Türedi, Z Topal, T Mercantepe, I Bozkurt, H Kaya, Ş Ersöz, B Ünal, E Odacı

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Protein carbonyl and malondialdehyde were upregulated in rats brains by extremely low frequency magnetic field exposure, indicative of oxidative stress.

Pubmed Data : Electromagn Biol Med. 2013 Sep ;32(3):363-72. Epub 2013 Jan 16. PMID: 23324065

Article Published Date : Sep 01, 2013

Authors : Mehmet Zulkuf Akdag, Suleyman Dasdag, Dilek Ulker Cakir, Beran Yokus, Goksel Kizil, Murat Kizil

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Rats exposed to mobile phone radiation in utero exhibit pathological changes in kidney tissue attributed to oxidative stress and decreased antioxidant activity.

Pubmed Data : Biotech Histochem. 2015 Feb ;90(2):93-101. Epub 2014 Aug 27. PMID: 25158858

Article Published Date : Feb 01, 2015

Authors : E Odacı, D Ünal, T Mercantepe, Z Topal, H Hancı, S Türedi, H S Erol, S Mungan, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats exposed to mobile phone radiation in utero have elevated biomarkers of oxidative stress and histopathological changes in heart tissue.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):390-7. Epub 2014 Aug 28. PMID: 25166431

Article Published Date : Jan 01, 2015

Authors : Sibel Türedi, Hatice Hancı, Zehra Topal, Deniz Ünal, Tolga Mercantepe, İlyas Bozkurt, Haydar Kaya, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

The low frequency electromagnetic fields generated by car electronics, physiotherapy equipment and LCD

monitors may be a cause of oxidative stress in the human body

Pubmed Data : Adv Clin Exp Med. 2015 Jan-Feb;24(1):31-5. PMID: 25923084

Article Published Date : Jan 01, 2015

Authors : Małgorzata Lewicka, Gabriela A Henrykowska, Krzysztof Pacholski, Artur Szczęsny, Maria Dziedziczak-Buczyńska, Andrzej Buczyński

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

These findings suggest occupational exposure to pulsed microwaves could cause genetic and cell alterations and that oxidative stress may be one of the possible mechanisms of DNA and cell damage.

Pubmed Data : Int J Hyg Environ Health. 2011 Jan ;214(1):59-65. Epub 2010 Sep 15. PMID: 20833106

Article Published Date : Jan 01, 2011

Authors : Vera Garaj-Vrhovac, Goran Gajski, Senijo Pažanin, Antonio Sarolić, Ana-Marija Domijan, Dubravka Flajs, Maja Peraica

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

These results suggest that direct chronic exposure to mobile phone caused severe biochemical and histopathological changes in the rat brain.

Pubmed Data : J Chem Neuroanat. 2016 12 ;78:10-19. Epub 2016 Jul 26. PMID: 27474378

Article Published Date : Jan 12, 2016

Authors : Shaymaa Hussein, Abdel-Aleem El-Saba, Mona K Galal

Study Type : Animal Study

Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Cyclooxygenase 2 Inhibitors : CK(1114) : AC(645) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Inflammatory : CK(312) : AC(92) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Neurotoxic : CK(1458) : AC(323) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Wi-Fi radiation leads to DNA damage in rat testes.

Pubmed Data : J Pediatr Urol. 2013 Apr ;9(2):223-9. Epub 2012 Mar 30. PMID: 22465825

Article Published Date : Apr 01, 2013

Authors : Halil I Atasoy, Mehmet Y Gunal, Pinar Atasoy, Serenay Elgun, Guler Bugdayci

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Mast cell degranulation stimulator (AC 2) (CK 11)

This article proposes a hypothesis that mast cell activation by electromagnetic fields may underpin the negative effects of electromagnetic radiation.

Pubmed Data : Med Hypotheses. 2000 Apr ;54(4):663-71. PMID: 10859662

Article Published Date : Apr 01, 2000

Authors : S Gangi, O Johansson

Study Type : Review
Additional Links

Diseases : Mast Cell: Over-Active : CK(6) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Mast cell degranulation stimulator : CK(2) : AC(1)

This study demonstrates that mast cells may degranulate as a result of exposure to TV and PC screens.

Pubmed Data : J Cutan Pathol. 2001 Nov ;28(10):513-9. PMID: 11737520

Article Published Date : Nov 01, 2001

Authors : O Johansson, S Gangi, Y Liang, K Yoshimura, C Jing, P Y Liu

Study Type : Human Study
Additional Links
Diseases : Mast Cell: Over-Active : CK(6) : AC(4)
Additional Keywords : Mast Cell: Over-Active : CK(6) : AC(4) , Mast Cell: Over-Active : CK(6) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Mast cell degranulation stimulator : CK(2) : AC(1)

Melatonin Interference (AC 21) (CK 65)

1800-MHz radiofrequency fields disturb plasma melatonin levels in rats.

Pubmed Data : J Toxicol Environ Health A. 2012 ;75(18):1120-8. PMID: 22891885

Article Published Date : Jan 01, 2012

Authors : Fenju Qin, Jie Zhang, Honglong Cao, Cao Yi, Jian Xiang Li, Jihua Nie, Li Li Chen, Jiajun Wang, Jian Tong

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461) , Testosterone : CK(164) : AC(29)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Melatonin Interference : CK(2) : AC(2)

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900 MHz electromagnetic fields affect NF-kB induced inflammation and metabolic activity of melatonin.

Pubmed Data : J Microsc Ultrastruct. 2017 Oct-Dec;5(4):177-184. Epub 2017 Sep 14. PMID: 30023252

Article Published Date : Oct 01, 2017

Authors : Aymen A Warille, Gamze Altun, Abdalla A Elamin, Arife Ahsen Kaplan, Hamza Mohamed, Kıymet Kübra Yurt, Abubaker El Elhaj

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Melatonin Interference : CK(2) : AC(2)

Animal studies demonstrate that exposure to pulsed static and extremely low frequency magnetic fields reduces melatonin levels.

Pubmed Data : Rev Environ Health. 1994 Jul-Dec;10(3-4):171-86. PMID: 7724876

Article Published Date : Jul 01, 1994

Authors : R J Reiter

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Melatonin Interference : CK(2) : AC(2)

Chronic exposure to microwave radiation may cause significant brain damage via melatonin reduction, capsase upregulation, and changes in cellular calcium.

Pubmed Data : Appl Biochem Biotechnol. 2012 Jan ;166(2):379-88. Epub 2011 Nov 29. PMID: 22134878

Article Published Date : Jan 01, 2012

Authors : Kavindra Kumar Kesari, Sanjay Kumar, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

Despite divergences in the reported results, ELF-MF and radio frequency electromagnetic field have to be considered as factors possibly influencing the circadian system function.

Pubmed Data : Biomed Res Int. 2014 ;2014:169459. Epub 2014 Jul 22. PMID: 25136557

Article Published Date : Jan 01, 2014

Authors : Bogdan Lewczuk, Grzegorz Redlarski, Arkadiusz Zak, Natalia Ziółkowska, Barbara Przybylska-Gornowicz, Marek Krawczuk

Study Type : Review
Additional Links
Diseases : Circadian Dysregulation : CK(165) : AC(34)
Additional Keywords : Circadian Rhythm : CK(23) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Melatonin Interference : CK(2) : AC(2)

Electromagnetic fields directly activate macrophages, stimulating elevated levels of free radical production. This may lead to downstream carcinogenic, genotoxic, and melatonin-depleting effects.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):83-92. PMID: 15352165

Article Published Date : Sep 01, 2004

Authors : Myrtill Simkó, Mats-Olof Mattsson

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogen : CK(61) : AC(12) , Genotoxic : CK(201) : AC(78) , Immunotoxic : CK(338) : AC(66) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Electromagnetic fields in neonatal incubators may interfere with melatonin and vagal tone in both neonates and caregivers.

Pubmed Data : J Matern Fetal Neonatal Med. 2019 Feb ;32(4):695-699. Epub 2017 Oct 23. PMID: 28988507

Article Published Date : Feb 01, 2019

Authors : Carlo Valerio Bellieni, Valentina Nardi, Giuseppe Buonocore, Sandra Di Fabio, Iole Pinto, Alberto Verrotti

Study Type : Review
Additional Links
Additional Keywords :
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Electromagnetic fields may interfere with melatonin synthesis in a season-dependent manner.

Pubmed Data : Sci Rep. 2015 Sep 18 ;5:14206. Epub 2015 Sep 18. PMID: 26381579

Article Published Date : Sep 18, 2015

Authors : Tereza Kolbabová, E Pascal Malkemper, Luděk Bartoš, Jacques Vanderstraeten, Marek Turčáni, Hynek Burda

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Additional Keywords : Melatonin : CK(1399) : AC(461)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Electronic equipment repairers, exposed to ELF-EMF, are at a risk of oxidative stress and sleep insufficiency, which could be explained by lower plasma melatonin levels and higher MDA levels.

Pubmed Data : Indian J Occup Environ Med. 2010 Sep ;14(3):66-70. PMID: 21461157

Article Published Date : Sep 01, 2010

Authors : Mohamed El-Helaly, E Abu-Hashem

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Exposure of non-human mammals to sinusoidal electric and/or magnetic fields as well as pulsed static magnetic fields often reduces pineal melatonin production.

Pubmed Data : Biomed Pharmacother. 1993 ;47(10):439-44. PMID: 8061243

Article Published Date : Jan 01, 1993

Authors : R J Reiter

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

High long-term exposure to extremely low frequency and radiofrequency electromagnetic fields may lead to breast cancer and Alzheimer's disease through amyloid-beta upregulation and melatonin downregulation.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):149-56. Epub 2009 Mar 10. PMID: 19278839

Article Published Date : Aug 01, 2009

Authors : Zoreh Davanipour, Eugene Sobel

Study Type : Review
Additional Links
Diseases : , Alzheimer's Disease : CK(2442) : AC(871) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Amyloid-Beta Upregulation : CK(3) : AC(2) , Carcinogenic (suspected) : CK(21) : AC(3), Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

Microwave exposure could adversely affect male fertility through melatonin downregulation in the testis.

Pubmed Data : Electromagn Biol Med. 2012 Sep ;31(3):223-32. PMID: 22897403

Article Published Date : Sep 01, 2012

Authors : Sanjay Kumar, J Behari, Rashmi Sisodia

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Mobile phone exposure may affect melatonin onset time.

Pubmed Data : Int J Radiat Biol. 2006 Feb ;82(2):69-76. PMID: **16546905**

Article Published Date : Feb 01, 2006

Authors : Andrew W Wood, Sarah P Loughran, Con Stough

Study Type : Human Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Prolonged use of cellular telephones may lead to reduced melatonin production, and elevated 60-Hz MF exposures may potentiate the effect.

Pubmed Data : Int J Radiat Biol. 2002 Nov ;78(11):1029-36. PMID: **12456290**

Article Published Date : Nov 01, 2002

Authors : J B Burch, J S Reif, C W Noonan, T Ichinose, A M Bachand, T L Koleber, M G Yost

Study Type : Human Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

The nocturnal peak of melatonin has been reported to be diminished, or time-shifted, or both, in rodents exposed to electric and/or magnetic fields.

Pubmed Data : Int J Occup Environ Health. 1996 Jan ;2(1):37-47. PMID: **9933863**

Article Published Date : Jan 01, 1996

Authors : Lambrozo, Touitou, Dab

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

The results support the hypothesis that electromagnetic field exposure can produce pineal gland melatonin suppression by affecting individual cells.

Pubmed Data : Bioelectromagnetics. 1998 ;19(2):123-7. PMID: 9492170

Article Published Date : Jan 01, 1998

Authors : L A Rosen, I Barber, D B Lyle

Study Type : Human In Vitro
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

These esults show the significance of disruption of melatonin due to exposure to weak EMFs, which may possibly lead to long-term health effects in humans.

Pubmed Data : Radiat Prot Dosimetry. 2013 May ;154(4):405-16. Epub 2012 Oct 10. PMID: 23051584

Article Published Date : May 01, 2013

Authors : Malka N Halgamuge

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

This review synthesizes the evidence of the carcinogenic effects of magnetic fields according to animal and cellular studies.

Pubmed Data : Environ Health Perspect. 1995 Mar ;103 Suppl 2:63-7. PMID: 7614950

Article Published Date : Mar 01, 1995

Authors : B Holmberg

Study Type : Review

Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2) , Tumorigenic : CK(16) : AC(11)

Various studies demonstrate that pineal and blood melatonin levels are depressed upon exposure to static magnetic fields.

Pubmed Data : J Cell Biochem. 1993 Apr ;51(4):394-403. PMID: **8098713**

Article Published Date : Apr 01, 1993

Authors : R J Reiter

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

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periodic exposure to pulsed DC or extremely low frequency electric or magnetic fields of sufficient intensity and duration can affect pineal gland function in certain individuals.

Pubmed Data : J Pineal Res. 1990 ;9(4):259-69. PMID: **2096195**

Article Published Date : Jan 01, 1990

Authors : B W Wilson, C W Wright, J E Morris, R L Buschbom, D P Brown, D L Miller, R Sommers-Flannigan, L E Anderson

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2)

Mutagenic (AC 1) (CK 1)

This study emphasizes the need for a DNA-based biological electromagnetic field exposure threshold and outlines the changes to DNA that can occur even at extremely low levels of exposure.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):71-8. Epub 2009 Mar 5. PMID: 19268550

Article Published Date : Aug 01, 2009

Authors : Martin Blank, Reba Goodman

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Cancers: All : CK(22165) : AC(7896) , DNA damage : CK(1482) : AC(545)
Additional Keywords : DNA damage : CK(1482) : AC(545) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Mutagenic : CK(24) : AC(13)

Necrotic (AC 3) (CK 6)

Chronic 2450 MHz RF-EMF fields exposure leads to adverse effects on the liver including occasional necrosis and inflammatory infiltrate.

Pubmed Data : J Toxicol Environ Health A. 2015 ;78(6):353-6. PMID: 25734762

Article Published Date : Jan 01, 2015

Authors : K Holovská, V Almášiová, V Cigánková, K Beňová, E Račeková, M Martončíková

Study Type : Animal Study
Additional Links
Additional Keywords : , , , , ,
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Inflammatory : CK(312) :

AC(92), Necrotic : CK(5) : AC(3)

Microscopic analyses reveal cochlear apoptosis and necrosis associated with exposure to both 900 MHz and 1800 MHz electromagnetic fields in rats.

Pubmed Data : J Laryngol Otol. 2014 May ;128(5):400-5. Epub 2014 May 1. PMID: 24784924

Article Published Date : May 01, 2014

Authors : E Seckin, F Suren Basar, S Atmaca, F F Kaymaz, A Suzer, A Akar, E Sunan, M Koyuncu

Study Type : Animal Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Necrotic : CK(5) : AC(3)

This study demonstrates the adverse effects of electromagnetic radiation on testicular parenchyma in rats.

Pubmed Data : J Toxicol Environ Health A. 2014 ;77(13):747-50. PMID: 24839928

Article Published Date : Jan 01, 2014

Authors : Viera Almášiová, Katarína Holovská, Viera Cigánková, Enikö Račeková, Kamila Fabianová, Marcela Martončíková

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Necrotic : CK(5) : AC(3)

Nephrotoxic (AC 3) (CK 6)

Exposure to static magnetic fields induced oxidative stress in rat kidneys that can be prevented by treatment with selenium or vitamin E.

Pubmed Data : Gen Physiol Biophys. 2015 Jan ;34(1):23-32. Epub 2014 Nov 14. PMID: 25395602

Article Published Date : Jan 01, 2015

Authors : Soumaya Ghodbane, Aida Lahbib, Mohamed Ammari, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188) , Vitamin E : CK(2077) : AC(371)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Nephrotoxic : CK(179) : AC(43) , Oxidant : CK(122) : AC(48)

Melatonin and caffeic acid phenethyl ester prevent renal tubular injury by reducing oxidative stress and protect the kidney from oxidative damage induced by 900 MHz mobile phone.

Pubmed Data : Mol Cell Biochem. 2005 Aug ;276(1-2):31-7. PMID: 16132682

Article Published Date : Aug 01, 2005

Authors : Fehmi Ozguner, Faruk Oktem, Abdullah Armagan, Ramazan Yilmaz, Ahmet Koyu, Reha Demirel, Huseyin Vural, Efkan Uz

Study Type : Animal Study
Additional Links
Substances : Caffeic acid phenethyl ester : CK(58) : AC(30) , Melatonin : CK(1399) : AC(461)
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Nephrotoxic : CK(179) : AC(43)

These findings suggest that GSM-like radiofrequency

radiation interferes with gene expression during early gestation and results in aberrations of bone morphogenetic protein expression in the newborn.

Pubmed Data : Bioelectromagnetics. 2004 Apr ;25(3):216-27. PMID: 15042631

Article Published Date : Apr 01, 2004

Authors : Athina Pyrpasopoulou, Vassiliki Kotoula, Angeliki Cheva, Prodromos Hytiroglou, Eleni Nikolakaki, Ioannis N Magras, Thomas D Xenos, Theodoros D Tsiboukis, Georgios Karkavelas

Study Type : Animal Study
Additional Links
Additional Keywords : Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Nephrotoxic : CK(179) : AC(43)

Neurotoxic (AC 123) (CK 612)

1.8 GHz EMF may inhibit ciliary beat frequency via a protein kinase C-dependent mechanism.

Pubmed Data : Laryngoscope. 2013 Feb ;123(2):315-20. Epub 2012 Oct 11. PMID: 23060235

Article Published Date : Feb 01, 2013

Authors : Seung Min In, Hyun Jun Kim, Rae Woong Park, Woojae Kim, Yoon-Myoung Gimm, Ikmo Park, Sungpyo Hong, Jeong Joo Hong, Jeong Hyun Oh, Hison Kahng, Eun Young Park

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

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10 GHz electromagnetic field radiation induces development delay and may affect fertility is Drosophilia melanogaster.

Pubmed Data : Int J Radiat Biol. 2006 Jun ;82(6):435-41. PMID: 16846978

Article Published Date : Jun 01, 2006

Authors : Emel Atli, Hacer Unlü

Study Type : Animal Study
Additional Links
Diseases : Infant Neurological Development : CK(58) : AC(9) , Infertility : CK(1359) : AC(316) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

1800 MHz radiofrequency radiation impairs neurite outgrowth of embryonic neural stem cells which are essential for embryonic brain development.

Pubmed Data : Sci Rep. 2014 May 29 ;4:5103. Epub 2014 May 29. PMID: **24869783**

Article Published Date : May 29, 2014

Authors : Chunhai Chen, Qinlong Ma, Chuan Liu, Ping Deng, Gang Zhu, Lei Zhang, Mindi He, Yonghui Lu, Weixia Duan, Liping Pei, Min Li, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Additional Keywords : , , , , , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

2.45 GHz EMF exposure can initiate the activation of rat microglia cells and STAT3 signalling involves in EMF-induced microglial activation.

Pubmed Data : Int J Radiat Biol. 2010 Jan ;86(1):27-36. PMID: **20070213**

Article Published Date : Jan 01, 2010

Authors : Yutong Hao, Xuesen Yang, Chunhai Chen, Yuan-Wang, Xubu Wang, Maoquan Li, Zhengping Yu

Study Type : Animal Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation: Brain : CK(8) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Neurotoxic : CK(1458) : AC(323)

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40 Hz microwave radiation enhanced EEG power in EEG alpha and beta frequency bands.

Pubmed Data : Phys Med Biol. 2009 Jun 7 ;54(11):3341-63. Epub 2009 May 8. PMID: 19430110

Article Published Date : Jun 07, 2009

Authors : Yuri Feldman, Alexander Puzenko, Paul Ben Ishai, Andreas Caduff, Issak Davidovich, Fadi Sakran, Aharon J Agranat

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

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835 MHz radiofrequency radiation exposure alters cellular calcium levels in the hippocampus of the rat brain.

Pubmed Data : Brain Res. 2010 Feb 8 ;1313:232-41. Epub 2009 Dec 5. PMID: 19968972

Article Published Date : Feb 08, 2010

Authors : Dhiraj Maskey, Minsoo Kim, Bijay Aryal, Jonu Pradhan, In-Young Choi, Ki-Sup Park, Taeho Son, Sae-Yong Hong, Seok Bae Kim, Hyung Gun Kim, Myeung Ju Kim

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

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872 MHz radiofrequency radiation may enhance oxidative stress in already stressed cells.

Pubmed Data : Radiat Res. 2008 Aug ;170(2):235-43. PMID: 18666817

Article Published Date : Aug 01, 2008

Authors : Anne Höytö, Jukka Luukkonen, Jukka Juutilainen, Jonne Naarala

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

9.9 GHz exposure results in calcium ion efflux, increased activity of ornithine decarboxylase, and decreased activity of protein kinase C in the brains of exposed rats.

Pubmed Data : Cell Biochem Biophys. 2012 May ;63(1):97-102. PMID: 22426826

Article Published Date : May 01, 2012

Authors : R Paulraj, J Behari

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

900-MHz electromagnetic fields induce histopathological changes in the rat hippocampus.

Pubmed Data : J Chem Neuroanat. 2019 Aug 26 ;101:101681. Epub 2019 Aug 26. PMID: 31465830

Article Published Date : Aug 26, 2019

Authors : Ayşe İkinci Keleş, Jens Randel Nyengaard, Ersan Odacı

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

According to this study, pulsed high-frequency electromagnetic fields can affect normal brain functioning

Pubmed Data : Neurosci Res. 2005 Nov ;53(3):265-70. Epub 2005 Aug 15. PMID: 16102863

Article Published Date : Nov 01, 2005

Authors : G Curcio, M Ferrara, F Moroni, G D'Inzeo, M Bertini, L De Gennaro

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Acute exposure to 900-MHz microwaves induces glial reactivity and biochemical modifications in the rat brain.

Pubmed Data : Neurobiol Dis. 2004 Dec ;17(3):445-54. PMID: 15571980

Article Published Date : Dec 01, 2004

Authors : Anne-Laure Mausset-Bonnefont, Hélène Hirbec, Xavier Bonnefont, Alain Privat, Jacques Vignon, René de Sèze

Study Type : Animal Study

Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Brain Inflammation : CK(686) : AC(352)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Acute low-level exposure to microwaves modulated at 7 Hz can affect cognitive processes such as attention and short-term memory in humans.

Pubmed Data : Int J Radiat Biol. 2002 Oct ;78(10):937-44. PMID: 12465659

Article Published Date : Oct 01, 2002

Authors : J Lass, V Tuulik, R Ferenets, R Riisalo, H Hinrikus

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Acute mobile phone radiation alters EEG readings in humans.

Pubmed Data : Clin Neurophysiol. 2002 Oct ;113(10):1623-32. PMID: 12350439

Article Published Date : Oct 01, 2002

Authors : Rodney J Croft, Jody S Chandler, Adrian P Burgess, Robert J Barry, John D Williams, Adam R Clarke

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Alterations seen in visual evoked potentials by extremely low frequency electric fields, at least partly, could be explained by lipid peroxidation in the retina and brain.

Pubmed Data : Electromagn Biol Med. 2016 ;35(1):65-74. Epub 2014 Dec 11. PMID: 25496054

Article Published Date : Jan 01, 2016

Authors : Deniz Kantar Gok, Deniz Akpinar, Enis Hidisoglu, Sukru Ozen, Aysel Agar, Piraye

Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Cell phone radiated radio frequency waves were effective on increasing brain tissue temperature and this temperature increase has cumulative effect on the tissue.

Pubmed Data : Int J Prev Med. 2018 ;9:40. Epub 2018 Apr 26. PMID: 29861880

Article Published Date : Jan 01, 2018

Authors : Farhad Forouharmajd, Siamak Pourabdian, Hossein Ebrahimi

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Cell phone radiation leads to neuronal loss in 8-week old rats.

Pubmed Data : Brain Res. 2015 Oct 22 ;1624:232-238. Epub 2015 Jul 31. PMID: 26239913

Article Published Date : Oct 22, 2015

Authors : Arzu Şahin, Ali Aslan, Orhan Baş, Ayşe İkinci, Cansu Özyılmaz, Osman Fikret Sönmez, Serdar Çolakoğlu, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Children : CK(10) : AC(1) , Children : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

Cell phones may alter neural activity of the avian brain.

Pubmed Data : Neurosci Lett. 2002 Nov 29 ;333(3):175-8. PMID: 12429376

Article Published Date : Nov 29, 2002

Authors : Robert C Beason, Peter Semm

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Cellular phone exposure may reversibly influence the human brain, inducing abnormal slow waves in EEG of awake persons.

Pubmed Data : Int J Neurosci. 2003 Jul ;113(7):1007-19. PMID: 12881192

Article Published Date : Jul 01, 2003

Authors : Alexander V Kramarenko, Uner Tan

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Chronic exposure to 1800 MHz microwaves during the early development stage may affect dendritic development and formation of excitatory synapses of hippocampal neurons in vitro.

Pubmed Data : Acta Pharmacol Sin. 2007 Dec ;28(12):1873-80. PMID: 18031599

Article Published Date : Dec 01, 2007

Authors : Wei Ning, Shu-jun Xu, Huai Chiang, Zheng-ping Xu, Su-ya Zhou, Wei Yang, Jian-hong Luo

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Chronic exposure to electromagnetic waves results in neuronal degeneration of the auditory system.

Pubmed Data : Acta Otolaryngol. 2015 Aug ;135(8):765-70. Epub 2015 Apr 2. PMID: 25836770

Article Published Date : Aug 01, 2015

Authors : Abdulkadir Özgür, Levent Tümkaya, Suat Terzi, Yıldıray Kalkan, Özlem Çelebi Erdivanlı, Engin Dursun

Study Type : Animal Study
Additional Links
Additional Keywords : , , ,
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Chronic exposure to microwave radiation may cause significant brain damage via melatonin reduction, capsase upregulation, and changes in cellular calcium.

Pubmed Data : Appl Biochem Biotechnol. 2012 Jan ;166(2):379-88. Epub 2011 Nov 29. PMID: 22134878

Article Published Date : Jan 01, 2012

Authors : Kavindra Kumar Kesari, Sanjay Kumar, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

Chronic low-intensity microwave exposure in the frequency range of 900 to 2450 MHz leads to cognitive decline and DNA damage in rats.

Pubmed Data : Int J Toxicol. 2015 May-Jun;34(3):284-90. Epub 2015 Mar 5. PMID: 25749756

Article Published Date : May 01, 2015

Authors : Pravin Suryakantrao Deshmukh, Namita Nasare, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Digvijay Singh, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Neurotoxic : CK(1458) : AC(323)

Chronic microwave exposure could induce cognitive deficit, possibly through alterations in the serotonergic

system.

Pubmed Data : Physiol Behav. 2015 Mar 1 ;140:236-46. Epub 2014 Dec 24. PMID: 25542888

Article Published Date : Mar 01, 2015

Authors : Hai-Juan Li, Rui-Yun Peng, Chang-Zhen Wang, Si-Mo Qiao, Zou Yong, Ya-Bing Gao, Xin-Ping Xu, Shao-Xia Wang, Ji Dong, Hong-Yan Zuo, Zhao Li, Hong-Mei Zhou, Li-Feng Wang, Xiang-Jun Hu

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426), Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

ELF-MFs alter the expression of the α-synuclein, which is specifically stimulated upon ELF-MFs exposure via both direct miR-34 targeting and oxidative stress.

Pubmed Data : Mol Neurobiol. 2018 Jul ;55(7):5698-5714. Epub 2017 Oct 16. PMID: 29039021

Article Published Date : Jul 01, 2018

Authors : Claudia Consales, Claudia Cirotti, Giuseppe Filomeni, Martina Panatta, Alessio Butera, Caterina Merla, Vanni Lopresto, Rosanna Pinto, Carmela Marino, Barbara Benassi

Study Type : In Vitro Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

EMF induces significant age- and dose-dependent changes in proliferating cell numbers within the rostal migratory stream.

Pubmed Data : Cell Mol Neurobiol. 2009 Sep ;29(6-7):981-90. Epub 2009 Mar 21. PMID: 19305951

Article Published Date : Sep 01, 2009

Authors : Judita Orendácová, Eniko Raceková, Martin Orendác, Marcela Martoncíková, Kamila Saganová, Kamila Lievajová, Henrieta Abdiová, Ján Labun, Ján Gálik

Study Type : Animal Study

Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

EMF modulates the responses of EEG oscillatory activity during cognitive processes.

Pubmed Data : Int J Radiat Biol. 2000 Dec ;76(12):1659-67. PMID: **11133048**

Article Published Date : Dec 01, 2000

Authors : C M Krause, L Sillanmäki, M Koivisto, A Häggqvist, C Saarela, A Revonsuo, M Laine, H Hämäläinen

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Electromagnetic field emissions may downregulate the synthesis of beta trace protein, the key enzyme in the synthesis of prostaglandin D2 an endogenous sleep-promoting neurohormone in the brain.

Pubmed Data : Int J Mol Med. 2010 Aug ;26(2):301-6. PMID: **20596612**

Article Published Date : Aug 01, 2010

Authors : Lennart Hardell, Fredrik Söderqvist, Michael Carlberg, Henrik Zetterberg, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Neurotoxic : CK(1458) : AC(323)

Electromagnetic field exposure at 900 MHz and 1800 MHz alters EEG readings.

Pubmed Data : Neurosci Lett. 2008 Aug 22 ;441(2):188-92. Epub 2008 Jun 18. PMID: **18577422**

Article Published Date : Aug 22, 2008

Authors : Chrissanthi D Hountala, Argiro E Maganioti, Charalambos C Papageorgiou, Eleni D

Nanou, Miltiades A Kyprianou, Vassilis G Tsiafakis, Andreas D Rabavilas, Christos N Capsalis

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Electromagnetic field exposure impacts spatial memory in mice.

Pubmed Data : Pathophysiology. 2010 Jun ;17(3):179-87. Epub 2009 Dec 1. PMID: 19954937

Article Published Date : Jun 01, 2010

Authors : A F Fragopoulou, P Miltiadous, A Stamatakis, F Stylianopoulou, S L Koussoulakos, L H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Electromagnetic fields induce astrocytoma proliferation in vitro.

Pubmed Data : Histol Histopathol. 2009 12 ;24(12):1551-61. PMID: 19795354

Article Published Date : Jan 12, 2009

Authors : C Pérez-Castejón, R N Pérez-Bruzón, M Llorente, N Pes, C Lacasa, T Figols, M Lahoz, C Maestú, A Vera-Gil, A Del Moral, M J Azanza

Study Type : Human In Vitro
Additional Links
Diseases : Astrocytoma : CK(12) : AC(6)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450), Apoptotic : CK(5217) : AC(3846) , Heat Shock Protein Inducer : CK(83) : AC(30)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Electromagnetic fields induce oxidative stress in the brain of rats, leading to aberrant neuronal functions.

Pubmed Data : Gen Physiol Biophys. 2014 ;33(1):81-90. Epub 2013 Dec 13. PMID: 24334533

Article Published Date : Jan 01, 2014

Authors : Pavan K Manikonda, Pilankatta Rajendra, D Devendranath, B Gunasekaran, Channakeshava, Shivakumara R S Aradhya, Rao B Sashidhar, Chivukula Subramanyam

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation causes age-related changes in the production of nitric oxide, which may lead to different courses of the proliferation cascade in newborn and young adult neurogenesis.

Pubmed Data : Acta Histochem. 2011 Nov ;113(7):723-8. Epub 2010 Oct 15. PMID: 20950843

Article Published Date : Nov 01, 2011

Authors : Judita Orendáčová, Martin Orendáč, Miroslav Mojžiš, Ján Labun, Marcela Martončíková, Kamila Saganová, Kamila Lievajová, Juraj Blaško, Henrieta Abdiová, Ján Gálik, Eniko Račeková

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Exposure to 42.25 GHz electromagnetic fields at a power of 50 mW/cm2 destroys the cytoplasm of unmyelinated and myelinated axons in rat skin.

Pubmed Data : Crit Rev Biomed Eng. 2000 ;28(3 - 4):641-58. PMID: 11108237

Article Published Date : Jan 01, 2000

Authors : S V Zavgorogny, Y P Khizhnyak, V N Voronkov, V B Sadovnikov

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Exposure to cell phone electromagnetic fields modifies the brain's responses significantly during a memory task.

Pubmed Data : Neuroreport. 2000 Mar 20 ;11(4):761-4. PMID: 10757515

Article Published Date : Mar 20, 2000

Authors : C M Krause, L Sillanmäki, M Koivisto, A Häggqvist, C Saarela, A Revonsuo, M Laine, H Hämäläinen

Study Type : Human Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Exposures to extremely low frequency magnetic field induces serious oxidative stress in the hippocampus and striatum and impaired hippocampal-dependent spatial learning and striatum-dependent habit learning in rats.

Pubmed Data : PLoS One. 2012 ;7(5):e32196. Epub 2012 May 3. PMID: 22570685

Article Published Date : Jan 01, 2012

Authors : Yonghua Cui, Zhiqiang Ge, Joshua Dominic Rizak, Chao Zhai, Zhu Zhou, Songjie Gong, Yi Che

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields increase oxidative stress and induces apoptosis. Incubation with N-acetylcysteine and glutathione reduces oxidative damage and prevents cell death.

Pubmed Data : Mol Neurobiol. 2016 08 ;53(6):4247-4260. Epub 2015 Jul 30. PMID: 26223801

Article Published Date : Jan 01, 2016

Authors : Barbara Benassi, Giuseppe Filomeni, Costanza Montagna, Caterina Merla, Vanni Lopresto, Rosanna Pinto, Carmela Marino, Claudia Consales

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Extremely low-frequency magnetic field exposure induces oxidative stress in the rat brain.

Pubmed Data : Biol Trace Elem Res. 2010 Dec ;138(1-3):238-49. Epub 2010 Feb 23. PMID: 20177816

Article Published Date : Dec 01, 2010

Authors : Mehmet Zulkuf Akdag, Suleyman Dasdag, Engin Ulukaya, Ali Kemal Uzunlar, Mustafa Ayberk Kurt, Abdullah Taşkin

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

GSM-type radiation can induce seizures in rats following their facilitation by subconvulsive doses of picrotoxin, which has relevance in human epileptic disorders.

Pubmed Data : Neurosci Lett. 2006 May 1 ;398(1-2):139-44. Epub 2006 Jan 30. PMID: 16448750

Article Published Date : May 01, 2006

Authors : Elena López-Martín, José L Relova-Quinteiro, Rosalia Gallego-Gómez, Manuel Peleteiro-Fernández, Francisco J Jorge-Barreiro, Francisco J Ares-Pena

Study Type : Animal Study
Additional Links
Diseases : Epilepsy : CK(530) : AC(137) , Seizures : CK(298) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

High long-term exposure to extremely low frequency and radiofrequency electromagnetic fields may lead to breast cancer and Alzheimer's disease through amyloid-beta upregulation and melatonin downregulation.

Pubmed Data : Pathophysiology. 2009 Aug ;16(2-3):149-56. Epub 2009 Mar 10. PMID: 19278839

Article Published Date : Aug 01, 2009

Authors : Zoreh Davanipour, Eugene Sobel

Study Type : Review
Additional Links
Diseases : , Alzheimer's Disease : CK(2442) : AC(871) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , RF-EMF and Cancers : CK(4078) : AC(1287)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Amyloid-Beta Upregulation : CK(3) : AC(2) , Carcinogenic (suspected) : CK(21) : AC(3), Melatonin Interference : CK(2) : AC(2) , Neurotoxic : CK(1458) : AC(323)

In this meta-analysis, there was an observed increased risk of amytrophic lateral sclerosis in workers occupationally exposed to extremely low frequency electromagnetic fields.

Pubmed Data : Bioelectromagnetics. 2018 Feb ;39(2):156-163. Epub 2018 Jan 19. PMID: 29350413

Article Published Date : Feb 01, 2018

Authors : Anke Huss, Susan Peters, Roel Vermeulen

Study Type : Meta Analysis
Additional Links
Diseases : Amyotrophic Lateral Sclerosis : CK(567) : AC(140)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Liver antioxidant stores protect the brain from oxidative damage as a result of exposure to 900 MHz and 1800 MHz electromagnetic fields.

Pubmed Data : J Matern Fetal Neonatal Med. 2014 Dec ;27(18):1915-21. Epub 2014 Apr 9. PMID: 24580725

Article Published Date : Dec 01, 2014

Authors : Hasan Çetin, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Nural Pastacı, Mehmet Okan Özkaya

Study Type : Animal Study
Additional Links
Substances : Glutathione : CK(63) : AC(17) , Selenium : CK(999) : AC(188) , Vitamin A : CK(678) : AC(102), Vitamin E : CK(2077) : AC(371)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Neuroprotective Agents : CK(6374) : AC(2801)
Additional Keywords : Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents :

CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Long duration exposure to 900 MHz EMF leads to decreases the number of Purkinje cell in the female rat cerebellum.

Pubmed Data : Brain Res. 2010 Oct 14 ;1356:95-101. Epub 2010 Aug 4. PMID: 20691167

Article Published Date : Oct 14, 2010

Authors : Osman Fikret Sonmez, Ersan Odaci, Orhan Bas, Süleyman Kaplan

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

Long-term 1.8 GHZ RF-EMF induces memory impairments in rats that persist 2 weeks after radiation.

Pubmed Data : Electromagn Biol Med. 2013 Mar ;32(1):95-120. Epub 2013 Jan 15. PMID: 23320614

Article Published Date : Mar 01, 2013

Authors : Maria P Ntzouni, Aikaterini Skouroliakou, Nikolaos Kostomitsopoulos, Lukas H Margaritis

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Long-term 900 MHz electromagnetic wave exposure may

be detrimental to developing brains.

Pubmed Data : Neurol Sci. 2003 Oct ;24(3):111-6. PMID: **14600821**

Article Published Date : Oct 01, 2003

Authors : O O Erdinc, M C Baykul, O Ozdemir, S Ozkan, B Sirmagul, S D Oner, G Ozdemir

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Long-term exposure to cell phone radiation increases apoptosis and oxidative stress while depleting antioxidant activity in the brains of young and adult rats.

Pubmed Data : Cell Biochem Biophys. 2014 Nov ;70(2):845-55. PMID: **24801773**

Article Published Date : Nov 01, 2014

Authors : Tarek K Motawi, Hebatallah A Darwish, Yasser M Moustafa, Mohammed M Labib

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Long-term, excessive exposure to mobile phone electromagnetic fields leads to changes in Alzheimer's-related miRNA expression in the brain.

Pubmed Data : Int J Radiat Biol. 2015 Apr ;91(4):306-11. Epub 2015 Jan 27. PMID: **25529971**

Article Published Date : Apr 01, 2015

Authors : Suleyman Dasdag, Mehmet Zulkuf Akdag, Mehmet Emin Erdal, Nurten Erdal, Ozlem Izci Ay, Mustafa Ertan Ay, Senay Gorucu Yilmaz, Bahar Tasdelen, Korkut Yegin

Study Type : Animal Study
Additional Links
Additional Keywords : , , , ,
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Lotus seedpod procyanidins mitigate the oxidative effects and learning and memory damage caused by extremely low frequency electromagnetic fields on

Pubmed Data : Food Funct. 2013 Aug ;4(8):1252-62. PMID: 23764910

Article Published Date : Aug 01, 2013

Authors : Yuqing Duan, Zhigao Wang, Haihui Zhang, Yuanqing He, Rongzhu Lu, Rui Zhang, Guibo Sun, Xiaobo Sun

Study Type : Animal Study
Additional Links
Substances : Lotus : CK(153) : AC(108)
Diseases : Learning disorders : CK(194) : AC(53) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Plant Extracts : CK(11762) : AC(4236) , Proanthocyanidins : CK(203) : AC(54)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Low-level exposure to extremely low frequency microwaves can modify the activity of cholinergic system in the brain.

Pubmed Data : Int J Radiat Biol. 2004 Sep ;80(9):691-8. PMID: 15586889

Article Published Date : Sep 01, 2004

Authors : V Vorobyov, V Pesić, B Janać, Z Prolić

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mice exposed to intermediate-frequency magnetic fields exhibit alterations of memory function-related genes and an increase in inflammatory mediators and oxidative

stress.

Pubmed Data : Int J Environ Res Public Health. 2015 Apr 22 ;12(4):4406-21. Epub 2015 Apr 22. PMID: **25913185**

Article Published Date : Apr 22, 2015

Authors : Tin-Tin Win-Shwe, Shin Ohtani, Akira Ushiyama, Naoki Kunugita

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Microwave exposure alters EEG power and this study indicates individual sensitivity to exppsure.

Pubmed Data : Bioelectromagnetics. 2004 Sep ;25(6):431-40. PMID: **15300729**

Article Published Date : Sep 01, 2004

Authors : Hiie Hinrikus, Maie Parts, Jaanus Lass, Viiu Tuulik

Study Type : Human Study
Additional Links
Additional Keywords :
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Microwave exposure alters EEG readings and may change with individual sensitivity.

Pubmed Data : Bioelectromagnetics. 2008 Oct ;29(7):527-38. PMID: **18452168**

Article Published Date : Oct 01, 2008

Authors : Hiie Hinrikus, Maie Bachmann, Jaanus Lass, Deniss Karai, Viiu Tuulik

Study Type : Human Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Microwave exposure alters EEG readings in human subjects.

Pubmed Data : Conf Proc IEEE Eng Med Biol Soc. 2006 ;1:1597-600. PMID: 17946053

Article Published Date : Jan 01, 2006

Authors : Maie Bachmann, Jaanus Lass, Jaan Kalda, Maksim Säkki, Ruth Tomson, Viiu Tuulik, Hiie Hinrikus

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Microwave exposure at a rate of 1mW/cm2 increased levels of plasma corticosterone, glucocorticoid receptor nuclear translocation, and apoptosis in the rat hippocampus.

Pubmed Data : J Radiat Res. 2008 Mar ;49(2):163-70. Epub 2008 Jan 16. PMID: 18198477

Article Published Date : Mar 01, 2008

Authors : Maoquan Li, Yanyan Wang, Yanwen Zhang, Zhou Zhou, Zhengping Yu

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(485) : AC(91) , Neurotoxic : CK(1458) : AC(323)

Microwave exposure decreases mitochondrial membrane potential, increases DNA fragmentation, and induces apoptosis via a caspase-3-dependent pathway in vitro.

Pubmed Data : Int J Med Sci. 2014 ;11(5):426-35. Epub 2014 Mar 9. PMID: 24688304

Article Published Date : Jan 01, 2014

Authors : Hongyan Zuo, Tao Lin, Dewen Wang, Ruiyun Peng, Shuiming Wang, Yabing Gao, Xinping Xu, Yang Li, Shaoxia Wang, Li Zhao, Lifeng Wang, Hongmei Zhou

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Mitochondria : CK(3) : AC(3), Mitochondria : CK(3) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) ,

Neurotoxic : CK(1458) : AC(323)

Microwave exposure modulated at 14 and 21 Hz enhanced the EEG power in the alpha and beta frequency bands.

Pubmed Data : Int J Radiat Biol. 2008 Jan ;84(1):69-79. PMID: 18058332

Article Published Date : Jan 01, 2008

Authors : Hiie Hinrikus, Maie Bachmann, Jaanus Lass, Ruth Tomson, Viiu Tuulik

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Microwave radiation alters EEG readings, with the effects present even at 100-fold differences.

Pubmed Data : Bioelectromagnetics. 2013 May ;34(4):264-74. Epub 2012 Dec 31. PMID: 23280729

Article Published Date : May 01, 2013

Authors : Anna Suhhova, Maie Bachmann, Deniss Karai, Jaanus Lass, Hiie Hinrikus

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Microwave radiation can increase the expression of aquaporin 4 in the rat hippocampus.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2009 Sep ;27(9):534-8. PMID: 20137298

Article Published Date : Sep 01, 2009

Authors : Xiang Li, Xiang-jun Hu, Rui-yun Peng, Ya-bing Gao, Shui-ming Wang, Li-feng Wang, Xin-ping Xu, Zhen-tao Su, Guo-shan Yang

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Blood Brain Barrier Injury : CK(16) : AC(8) , Neurotoxic : CK(1458) : AC(323)

Microwave radiation induces spatial learning and

memory deficits in the rat which is blocked by simultaneous exposure to incoherent magnetic fields.

Pubmed Data : Physiol Behav. 2004 Oct 15 ;82(5):785-9. PMID: 15451642

Article Published Date : Oct 15, 2004

Authors : Henry Lai

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobiel phones modify brain excitability in humans.

Pubmed Data : Ann Neurol. 2006 Aug ;60(2):188-96. PMID: 16802289

Article Published Date : Aug 01, 2006

Authors : Florinda Ferreri, Giuseppe Curcio, Patrizio Pasqualetti, Luigi De Gennaro, Rita Fini, Paolo Maria Rossini

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Excitotoxic : CK(15) : AC(4) , Neurotoxic : CK(1458) : AC(323)

Mobile phone EMFs modulate cortical excitability in patients affected by focal epilepsy.

Pubmed Data : Brain Stimul. 2013 May ;6(3):448-54. Epub 2012 Aug 9. PMID: 22889717

Article Published Date : May 01, 2013

Authors : Mario Tombini, Giovanni Pellegrino, Patrizio Pasqualetti, Giovanni Assenza, Antonella Benvenga, Emma Fabrizio, Paolo Maria Rossini

Study Type : Human Study
Additional Links
Diseases : Epilepsy : CK(530) : AC(137)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Excitotoxic : CK(15) : AC(4) , Neurotoxic : CK(1458) : AC(323)

Mobile phone electromagnetic field exposure during sleep reduced waking after sleep onset and affected heart rate variability.

Pubmed Data : Bioelectromagnetics. 2003 May ;24(4):262-76. PMID: 12696086

Article Published Date : May 01, 2003

Authors : Reto Huber, Jürgen Schuderer, Thomas Graf, Kathrin Jütz, Alexander A Borbély, Niels Kuster, Peter Achermann

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone electromagnetic field radiation induces dose-dependent damage in developing neurons of chick embryo.

Pubmed Data : Nepal Med Coll J. 2012 Dec ;14(4):337-41. PMID: 24579548

Article Published Date : Dec 01, 2012

Authors : I V Ingole, S K Ghosh

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

Mobile phone electromagnetic fields may affect inter-hemispheric synchronization of the alpha EEG rhythms in epileptic patients.

Pubmed Data : Int J Psychophysiol. 2012 May ;84(2):164-71. Epub 2012 Feb 16. PMID: 22326594

Article Published Date : May 01, 2012

Authors : Fabrizio Vecchio, Mario Tombini, Paola Buffo, Giovanni Assenza, Giovanni Pellegrino, Antonella Benvenga, Claudio Babiloni, Paolo Maria Rossini

Study Type : Human Study
Additional Links
Diseases : Epilepsy : CK(530) : AC(137)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone exposure alters EEG alpha power.

Pubmed Data : Bioelectromagnetics. 2008 Jan ;29(1):1-10. PMID: **17786925**

Article Published Date : Jan 01, 2008

Authors : R J Croft, D L Hamblin, J Spong, A W Wood, R J McKenzie, C Stough

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone exposure alters cerebral blood flow.

Pubmed Data : Neuroreport. 2003 Nov 14 ;14(16):2019-23. PMID: **14600490**

Article Published Date : Nov 14, 2003

Authors : Christian Haarala, Sargo Aalto, Hubertus Hautzel, Laura Julkunen, Juha O Rinne, Matti Laine, Bernd Krause, Heikki Hämäläinen

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone exposure alters neural activity, particularly in proximity to the phone.

Pubmed Data : Clin Neurophysiol. 2004 Jan ;115(1):171-8. PMID: **14706485**

Article Published Date : Jan 01, 2004

Authors : Denise L Hamblin, Andrew W Wood, Rodney J Croft, Con Stough

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone exposure induces oxidative stress in the brain, kidneys, and liver and also increases liver enzyme activity.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):279-84. Epub 2014 Apr 8. PMID: **24712749**

Article Published Date : Jan 01, 2015

Authors : Merhan Mamdouh Ragy

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , GGT : CK(63) : AC(9) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Mobile phone handsets may have an effect on the resting alpha band of the human EEG.

Pubmed Data : Conf Proc IEEE Eng Med Biol Soc. 2008 ;2008:5680-3. PMID: **19164006**

Article Published Date : Jan 01, 2008

Authors : Nicholas Perentos, Rodney J Croft, Raymond J McKenzie, Dean Cvetkovic, Irena Cosic

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone radiation exposure at a specific absorption rate of 0.95W/kg caused a significant decrease in the number of Purkinje cells and a tendency for granule cells to increase in cerebellum.

Pubmed Data : Int J Radiat Biol. 2010 Jul ;86(7):548-54. PMID: **20545571**

Article Published Date : Jul 01, 2010

Authors : Murat C Rağbetli, Atif Aydinlioğlu, Necat Koyun, Cennet Rağbetli, Seyman Bektas, Serdar Ozdemir

Study Type : Animal Study
Additional Links
Diseases : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phone radiation may alter heart rate variability during call time.

Pubmed Data : Ind Health. 2008 Aug ;46(4):409-17. PMID: 18716391

Article Published Date : Aug 01, 2008

Authors : Ryszard Andrzejak, Rafal Poreba, Malgorzata Poreba, Arkadiusz Derkacz, Robert Skalik, Pawel Gac, Boguslaw Beck, Aleksandra Steinmetz-Beck, Witold Pilecki

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

Mobile phone radiation might induce regional changes in brain activity in a seizure-prone rats.

Pubmed Data : J Neurosci Res. 2009 May 1 ;87(6):1484-99. PMID: 19115403

Article Published Date : May 01, 2009

Authors : E López-Martín, J Bregains, J L Relova-Quinteiro, C Cadarso-Suárez, F J Jorge-Barreiro, F J Ares-Pena

Study Type : Animal Study
Additional Links
Diseases : Seizures : CK(298) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phones act on brain electric activity in humans.

Pubmed Data : Neurosci Lett. 2009 Oct 23 ;464(2):79-83. Epub 2009 Aug 21. PMID: 19699778

Article Published Date : Oct 23, 2009

Authors : Marina de Tommaso, Paolo Rossi, Rosaria Falsaperla, Vito De Vito Francesco, Roberta Santoro, Antonio Federici

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Mobile phones in talk-mode alter EEG readings in humans.

Pubmed Data : Australas Phys Eng Sci Med. 2003 Dec ;26(4):162-7. PMID: 14995060

Article Published Date : Dec 01, 2003

Authors : H D'Costa, G Trueman, L Tang, U Abdel-rahman, W Abdel-rahman, K Ong, I Cosic

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Ornithine decarboxylase activity is affected by radiofrequency radiation in rat primary neural cells

Pubmed Data : Int J Radiat Biol. 2007 Jun ;83(6):367-74. PMID: 17487676

Article Published Date : Jun 01, 2007

Authors : A Höytö, J Juutilainen, J Naarala

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Prepubescent rats exposed to chronic radiofrequency electromagnetic radiation exhibit learning and memory dysfunction attributed to structural brain changes and decreased viable hippocampal cell count.

Pubmed Data : Metab Brain Dis. 2015 Oct ;30(5):1193-206. Epub 2015 Jun 3. PMID: 26033310

Article Published Date : Oct 01, 2015

Authors : Sareesh Naduvil Narayanan, Raju Suresh Kumar, Kalesh M Karun, Satheesha B Nayak, P Gopalakrishna Bhat

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53), Memory Disorders : CK(666) : AC(218)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Pulse modulation of mobile phone electromagnetic fields

induces changes in the human waking and sleep EEG.

Pubmed Data : Eur J Neurosci. 2005 Feb ;21(4):1000-6. PMID: 15787706

Article Published Date : Feb 01, 2005

Authors : R Huber, V Treyer, J Schuderer, T Berthold, A Buck, N Kuster, H P Landolt, P Achermann

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Pulse-modulated mobile phone electromagnetic field exposure alters regional cerebral blood flow and sleep and waking EEG.

Pubmed Data : J Sleep Res. 2002 Dec ;11(4):289-95. PMID: 12464096

Article Published Date : Dec 01, 2002

Authors : R Huber, V Treyer, A A Borbély, J Schuderer, J M Gottselig, H-P Landolt, E Werth, T Berthold, N Kuster, A Buck, P Achermann

Study Type : Human Study
Additional Links
Diseases : Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Pulsed electromagnetic fields induce microglia polarization and inflammation in the brain.

Pubmed Data : J Biol Regul Homeost Agents. 2019 Jul-Aug;33(4):1051-1062. PMID: 31392878

Article Published Date : Jul 01, 2019

Authors : X J Zhang, M M Lv, X Q Zhu, L Y Tian, J J Li, Y P Shao, C J Gao, X D Sun

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Neurotoxic : CK(1458) : AC(323)

Pulsed radiofrequency radiation increases the expression of activating transcription factor 3, an indicator of cellular "stress", in the rat dorsal root ganglia.

Pubmed Data : Eur J Pain. 2006 Feb ;10(2):171-6. PMID: 16310722

Article Published Date : Feb 01, 2006

Authors : Wolfgang Hamann, Sherif Abou-Sherif, Stephen Thompson, Susan Hall

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

RF-EMF exposure reduced the number of neurites generated by rat cholinergic cells and primary corticol neurons, and this alteration correlates to increased expression of beta-thymosin mRNA.

Pubmed Data : Neurosci Lett. 2009 May 22 ;455(3):173-7. Epub 2009 Mar 24. PMID: 19429115

Article Published Date : May 22, 2009

Authors : Giovanna Del Vecchio, Alessandro Giuliani, Mercedes Fernandez, Pietro Mesirca, Ferdinando Bersani, Rosanna Pinto, Lucia Ardoino, Giorgio A Lovisolo, Luciana Giardino, Laura Calzà

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Radio frequency radiations irreversibly affect the structural and biochemical characteristics of acetylcholinesterase.

Pubmed Data : Biophys Chem. 2005 Mar 1 ;113(3):245-53. PMID: 15620509

Article Published Date : Mar 01, 2005

Authors : Mario Barteri, Alessandro Pala, Simona Rotella

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Radiofrequency electromagnetic radiation increases parasympathetic nervous system activity.

Pubmed Data : Bioelectromagnetics. 2018 May ;39(4):277-288. Epub 2018 Feb 22. PMID: 29469164

Article Published Date : May 01, 2018

Authors : Jakub Misek, Igor Belyaev, Viera Jakusova, Ingrid Tonhajzerova, Jan Barabas, Jan Jakus

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

Radiofrequency exposure decreases brain-derived neurotrophic factor and glial-derived neurotrophic factor in the auditory system of rats.

Pubmed Data : Neurosci Lett. 2014 Apr 3 ;564:78-82. Epub 2014 Feb 16. PMID: 24548626

Article Published Date : Apr 03, 2014

Authors : Dhiraj Maskey, Myeung Ju Kim

Study Type : Animal Study
Additional Links
Diseases : Hearing Disorders : CK(1) : AC(1)
Additional Keywords : Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1) , Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1), Hearing Disorders : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Radiofrequency radiation exposure leads to neuronal cells and changes in astrocyte morphology.

Pubmed Data : Neurosci Lett. 2012 Jan 11 ;506(2):292-6. Epub 2011 Nov 25. PMID: 22133805

Article Published Date : Jan 11, 2012

Authors : Dhiraj Maskey, Hye-Jin Kim, Hyung Gun Kim, Myeung Ju Kim

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

Radiofrequency radiation stimulates calcium efflux in neurons in vitro.

Pubmed Data : Bioelectromagnetics. 1989 ;10(2):197-202. PMID: **2540756**

Article Published Date : Jan 01, 1989

Authors : S K Dutta, B Ghosh, C F Blackman

Study Type : Human In Vitro
Additional Links
Additional Keywords :
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Rats born to mothers exposed to a 900 MHz electromagnetic field during pregnancy exhibit neuronal loss and pathological effects even after birth.

Pubmed Data : J Chem Neuroanat. 2016 09 ;75(Pt B):105-10. Epub 2015 Sep 21. PMID: **26391347**

Article Published Date : Jan 01, 2016

Authors : Ersan Odacı, Hatice Hancı, Ayşe İkinci, Osman Fikret Sönmez, Ali Aslan, Arzu Şahin, Haydar Kaya, Serdar Çolakoğlu, Orhan Baş

Study Type : Animal Study
Additional Links
Diseases : Brain Damage : CK(93) : AC(44)
Additional Keywords : Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Rats born to mothers exposed to mobile phone radiation exhibit altered electrophysiological properties of CA1 pyramidal neurons, deleteriously impacting cognition.

Pubmed Data : Toxicol Ind Health. 2016 Jun ;32(6):968-79. Epub 2014 Mar 6. PMID: **24604340**

Article Published Date : Jun 01, 2016

Authors : Moazamehosadat Razavinasab, Kasra Moazzami, Mohammad Shabani

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) ,

Learning disorders : CK(194) : AC(53)
Additional Keywords : Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Learning disorders : CK(194) : AC(53) , Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Rats exposed to mobile phone radiation present with higher oxidative stress, reduced antioxidant activity, and extensive neurodegeneration in the brain.

Pubmed Data : Neurol Res. 2014 Dec ;36(12):1072-9. Epub 2014 May 26. PMID: **24861496**

Article Published Date : Dec 01, 2014

Authors : Nidhi Saikhedkar, Maheep Bhatnagar, Ayushi Jain, Pooja Sukhwal, Chhavi Sharma, Neha Jaiswal

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Brain: Oxidative Stress : CK(79) : AC(46) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Reduced hippocampal glucose uptake may be associated with cognitive impairment caused by microwave exposure.

Pubmed Data : Physiol Behav. 2012 Jul 16 ;106(5):631-7. Epub 2012 Apr 28. PMID: **22564535**

Article Published Date : Jul 16, 2012

Authors : Yonghui Lu, Shangcheng Xu, Mindi He, Chunhai Chen, Lei Zhang, Chuan Liu, Fang Chu, Zhengping Yu, Zhou Zhou, Min Zhong

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Short-term mobile phone exposure can locally suppress brain energy metabolism in humans.

Pubmed Data : J Cereb Blood Flow Metab. 2011 Dec ;31(12):2293-301. Epub 2011 Sep 14. PMID: 21915135

Article Published Date : Dec 01, 2011

Authors : Myoung Soo Kwon, Victor Vorobyev, Sami Kännälä, Matti Laine, Juha O Rinne, Tommi Toivonen, Jarkko Johansson, Mika Teräs, Harri Lindholm, Tommi Alanko, Heikki Hämäläinen

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Super high frequency radiation induces changes in cat neurons. Nucleus-to-cytoplasm ratio seems to be subject to the greatest influence.

Pubmed Data : Radiats Biol Radioecol. 2009 May-Jun;49(3):365-71. PMID: 19637747

Article Published Date : May 01, 2009

Authors : I K Smoliarenko, O O Shugurov

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

Super high frequency waves at nonthermal intensity may alter the membrane potential of spinal cord neurons in cats.

Pubmed Data : Radiats Biol Radioecol. 2008 Jan-Feb;48(1):92-101. PMID: 18666585

Article Published Date : Jan 01, 2008

Authors : I K Smoliarenko, O A Shugurov, O O Shugurov

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Sympathetic resonance technology may attentuate alteration of neural function associated with mobile phone use.

Pubmed Data : J Altern Complement Med. 2002 Aug ;8(4):427-35. PMID: **12230903**

Article Published Date : Aug 01, 2002

Authors : Rodney J Croft, Jody S Chandler, Adrian P Burgess, Robert J Barry, John D Williams, Adam R Clarke

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

TETRA signals alter EEG and electrocardiogram readings consistent with vagal nerve stimulation in the chest.

Pubmed Data : Environ Res. 2016 Oct ;150:461-469. Epub 2016 Jul 13. PMID: **27419367**

Article Published Date : Oct 01, 2016

Authors : Adrian P Burgess, Nathalie C Fouquet, Stefano Seri, Malcolm B Hawken, Andrew Heard, David Neasham, Mark P Little, Paul Elliott

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

The documented changes in amino acid concentrations evidenced in this study may underlie the reported adverse effects of using mobile phones.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2011 Jul ;15(7):729-42. PMID: **21780540**

Article Published Date : Jul 01, 2011

Authors : N A Noor, H S Mohammed, N A Ahmed, N M Radwan

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The findings of this study add evidence to an association between magnetic field exposure and dementia.

Pubmed Data : Soz Praventivmed. 2006 ;51(4):210-20. PMID: 17193783

Article Published Date : Jan 01, 2006

Authors : Kerstin Hug, Martin Röösli, Regula Rapp

Study Type : Review
Additional Links
Diseases : Motor Neuron Disease : CK(506) : AC(111) , Neurodegenerative Diseases : CK(6185) : AC(1785)
Additional Keywords : Neurodegenerative Diseases : CK(6185) : AC(1785)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The findings of this study provide further evidence for a non-thermal biological effect of pulsed radio frequency electromagnetic fields.

Pubmed Data : Neuroreport. 2007 May 28 ;18(8):803-7. PMID: 17471070

Article Published Date : May 28, 2007

Authors : Sabine J Regel, Julie M Gottselig, Jürgen Schuderer, Gilberte Tinguely, Julia V Rétey, Niels Kuster, Hans-Peter Landolt, Peter Achermann

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The most promising arena for EMF research appears to be neurological effects, according to this analysis.

Pubmed Data : Front Public Health. 2016 ;4:193. Epub 2016 Sep 7. PMID: 27656641

Article Published Date : Jan 01, 2016

Authors : Fred Parham, Christopher J Portier, Xiaoqing Chang, Meike Mevissen

Study Type : Review
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785)
Additional Keywords : Neurodegenerative Diseases : CK(6185) : AC(1785)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The number and size of the synaptic vesicles in the hypothalamic presynaptic terminals were significantly decreased after RF-EMF exposure in rats.

Pubmed Data : Gen Physiol Biophys. 2019 Aug 14. Epub 2019 Aug 14. PMID: 31411574

Article Published Date : Aug 14, 2019

Authors : Ju Hwan Kim, Yang Hoon Huh, Hak Rim Kim

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The number of c-Fos immunoreactive cells in the rat dorsal horn was significantly increased for both continuous and pulsed radiofrequency radiation as compared with sham.

Pubmed Data : Anesthesiology. 2005 Jan ;102(1):125-31. PMID: 15618796

Article Published Date : Jan 01, 2005

Authors : Jan Van Zundert, Anton J A de Louw, Elbert A J Joosten, Alfons G H Kessels, Wiel Honig, Pieter J W C Dederen, Jan G Veening, Johan S H Vles, Maarten van Kleef

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The radiofrequency of cell phone prolongs the QT interval in human beings and it interferes with voltage criteria of ECG records in male patients with myocardial ischemia.

Pubmed Data : Ann Med Health Sci Res. 2012 Jul ;2(2):146-51. PMID: 23440607

Article Published Date : Jul 01, 2012

Authors : Ah Alhusseiny, Ms Al-Nimer, Ad Majeed

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

The results of this study indicate that an adaptation of the human brain to low-level microwave exposure is evident.

Pubmed Data : Conf Proc IEEE Eng Med Biol Soc. 2007 ;2007:4747-50. PMID: 18003066

Article Published Date : Jan 01, 2007

Authors : Maie Bachmann, Jekaterina Rubljova, Jaanus Lass, Ruth Tomson, Viiu Tuulik, Hiie Hinrikus

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The results of this study indicate that working in an occupation with high or medium-high magnetic field exposure may increase the risk of severe cognitive dysfunction.

Pubmed Data : Br J Med Med Res. 2014 Apr 16 ;4(8):1641-1662. PMID: 24839595

Article Published Date : Apr 16, 2014

Authors : Zoreh Davanipour, Chiu-Chen Tseng, Pey-Jiuan Lee, Kyriakos S Markides, Eugene Sobel

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

The results suggest that exposure to GSM electromagnetic field exerts some effects on central nervous system, including effects on long latency event related potentials.

Pubmed Data : Int J Occup Med Environ Health. 2010 ;23(2):191-9. PMID: 20682490

Article Published Date : Jan 01, 2010

Authors : Marek Bak, Adam Dudarewicz, Marek Zmyślony, Mariola Sliwinska-Kowalska

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

These findings suggest that EMF exposure may be harmful in young adults by impairing the antioxidant defenses directed at preventing iron-induced oxidative stress.

Pubmed Data : Neuroscience. 2011 Jul 14 ;186:39-47. Epub 2011 Apr 12. PMID: 21497179

Article Published Date : Jul 14, 2011

Authors : K Maaroufi, E Save, B Poucet, M Sakly, H Abdelmelek, L Had-Aissouni

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

These results indicate that acute exposure to EMF at high SARs impairs the ability of neurons to store information.

Pubmed Data : Electromagn Biol Med. 2013 Mar ;32(1):48-58. Epub 2012 Oct 9. PMID: 23046101

Article Published Date : Mar 01, 2013

Authors : B Partsvania, T Sulaberidze, L Shoshiashvili

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Neurotoxic : CK(1458) : AC(323)

These results indicate that exposure to radiofrequency EMF may affect the neurovegetative regulation.

Pubmed Data : Int J Occup Med Environ Health. 2012 Sep ;25(4):446-55. Epub 2012 Dec 6. PMID: 23224733

Article Published Date : Sep 01, 2012

Authors : Alicja Bortkiewicz, Elżbieta Gadzicka, Wiesław Szymczak, Marek Zmyślony

Study Type : Human Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Neurotoxic : CK(1458) : AC(323)

These results indicate that magnetosensory evoked potentials in rats are associated with increased glucose utilization in the cerebellum, thereby supporting evidence that EMF transduction occurred in the brain.

Pubmed Data : Synapse. 2009 May ;63(5):421-8. PMID: 19177512

Article Published Date : May 01, 2009

Authors : Clifton Frilot, Simona Carrubba, Andrew A Marino

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

These results indicate that working near a 1.5 Tesla MRI system may elicit neurobehavioral effects.

Pubmed Data : Magn Reson Med. 2003 Oct ;50(4):670-4. PMID: 14523950

Article Published Date : Oct 01, 2003

Authors : Frank de Vocht, Berna van-Wendel-de-Joode, Hans Engels, Hans Kromhout

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Additional Keywords : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

These results strengthen the positive association between amyotrophic lateral sclerosis and extremely-low electromagnetic field exposure.

Pubmed Data : Occup Environ Med. 2017 08 ;74(8):578-585. Epub 2017 Mar 29. PMID: 28356332

Article Published Date : Jan 01, 2017

Authors : Tom Koeman, Pauline Slottje, Leo J Schouten, Susan Peters, Anke Huss, Jan H Veldink, Hans Kromhout, Piet A van den Brandt, Roel Vermeulen

Study Type : Human Study
Additional Links
Diseases : Amyotrophic Lateral Sclerosis : CK(567) : AC(140)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

These results suggest that direct chronic exposure to mobile phone caused severe biochemical and histopathological changes in the rat brain.

Pubmed Data : J Chem Neuroanat. 2016 12 ;78:10-19. Epub 2016 Jul 26. PMID: 27474378

Article Published Date : Jan 12, 2016

Authors : Shaymaa Hussein, Abdel-Aleem El-Saba, Mona K Galal

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Cyclooxygenase 2 Inhibitors : CK(1114) : AC(645) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Inflammatory : CK(312) : AC(92) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Neurotoxic : CK(1458) : AC(323) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

These results suggest that occupational exposure to extremely low frequency magnetic fields result in a 1.63 increased risk of developing Alzheimer's disease.

Pubmed Data : Neurotoxicology. 2018 12 ;69:242-252. Epub 2017 Dec 24. PMID: 29278690

Article Published Date : Jan 12, 2018

Authors : Hamed Jalilian, Saeed Hosseini Teshnizi, Martin Röösli, Masoud Neghab

Study Type : Meta Analysis
Additional Links
Diseases :
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

These results support that long-term exposure to a GSM-like 2100MHz electromagnetic fields causes an increase in neuronal degeneration and apoptosis in the auditory system.

Pubmed Data : Braz J Otorhinolaryngol. 2017 Nov - Dec;83(6):691-696. Epub 2016 Nov 5. PMID:

27865708

Article Published Date : Dec 01, 2017

Authors : Metin Çeliker, Abdulkadir Özgür, Levent Tümkaya, Suat Terzi, Mustafa Yılmaz, Yıldıray Kalkan, Ender Erdoğan

Study Type : Animal Study
Additional Links
Diseases : Auditory Diseases : CK(3) : AC(2)
Additional Keywords : Auditory Diseases : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

This animal study demonstrates that prenatal mobile phone electromagnetic field exposure alters electrophysiological properties of neurons in rats.

Pubmed Data : Neuroscience. 2013 Oct 10 ;250:588-98. Epub 2013 Jul 29. PMID: 23906636

Article Published Date : Oct 10, 2013

Authors : M Haghani, M Shabani, K Moazzami

Study Type : Animal Study
Additional Links
Additional Keywords : Pregnancy : CK(10) : AC(1) , Pregnancy : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This animal study suggests RF-EMF radiation stresses the brain.

Pubmed Data : Korean J Physiol Pharmacol. 2017 Mar ;21(2):179-188. Epub 2017 Feb 21. PMID: 28280411

Article Published Date : Mar 01, 2017

Authors : Ju Hwan Kim, Da-Hyeon Yu, Hak Rim Kim

Study Type : Animal Study
Additional Links
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323)

This case report demonstrates a neurological abnormality in a patient after prolonged use of a mobile phone.

Pubmed Data : Occup Med (Lond). 2000 Jul ;50(5):366-8. PMID: 10975136

Article Published Date : Jul 01, 2000

Authors : B Hocking, R Westerman

Study Type : Human: Case Report
Additional Links
Diseases : Neurologic Disorders : CK(66) : AC(30)
Additional Keywords : Neurologic Disorders : CK(66) : AC(30)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This cohort study demonstrates a potential adverse effect of microwave radiofrequency electromagnetic fields on cognitive function that involve brain regions mostly exposed during mobile phone use.

Pubmed Data : Environ Health Perspect. 2018 07 ;126(7):077007. Epub 2018 Jul 23. PMID: 30044230

Article Published Date : Jan 01, 2018

Authors : Milena Foerster, Arno Thielens, Wout Joseph, Marloes Eeftens, Martin Röösli

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This review documents new data on neurodevelopmental and neurobehavioral changes due to exposure to wireless technologies.

Pubmed Data : Child Dev. 2018 01 ;89(1):129-136. Epub 2017 May 15. PMID: 28504324

Article Published Date : Jan 01, 2018

Authors : Cindy Sage, Ernesto Burgio

Study Type : Review
Additional Links
Diseases : Attention Deficit Disorder : CK(136) : AC(14) , Attention Deficit Hyperactivity Disorder :

CK(165) : AC(19), Autism : CK(617) : AC(73)
Additional Keywords : Autism : CK(617) : AC(73)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

This review summarizes the research on electromagnetic fields, oxidative stress, and its link to neurodegeneration.

Pubmed Data : Int J Cell Biol. 2012 ;2012:683897. Epub 2012 Sep 9. PMID: 22991514

Article Published Date : Jan 01, 2012

Authors : Claudia Consales, Caterina Merla, Carmela Marino, Barbara Benassi

Study Type : Review
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

This study proposes that electromagnetic fields may interfere with the calibration of the nervous system in infants and may provide a link to autism.

Pubmed Data : Med Hypotheses. 2006 ;67(2):378-82. Epub 2006 Mar 10. PMID: 16530334

Article Published Date : Jan 01, 2006

Authors : Ian M Thornton

Study Type : Review
Additional Links
Diseases : Autism Spectrum Disorders : CK(2789) : AC(399)
Additional Keywords : Autism Spectrum Disorders : CK(2789) : AC(399)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Ultra high frequency electromagnetic field induce changes in rat neuronal cells.

Pubmed Data : Med Tr Prom Ekol. 2000(5):5-8. PMID: 10881537

Article Published Date : Jan 01, 2000

Authors : V V Leshin

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323)

Neurotransmitter Interference (AC 4) (CK 16)

Dirty electricity is a chronic stressor and interferes with neurotransmitters.

Pubmed Data : Electromagn Biol Med. 2013 Dec ;32(4):500-7. Epub 2013 Jan 16. PMID: 23323864

Article Published Date : Dec 01, 2013

Authors : Samuel Milham, David Stetzer

Study Type : Human Study
Additional Links
Additional Keywords :
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Neurotransmitter Interference : CK(14) : AC(3)

High energetic radiofrequency exposure reduces GABA transmission in the rat cerebellum.

Pubmed Data : Brain Res. 2001 Aug 31 ;912(1):33-46. PMID: 11520491

Article Published Date : Aug 31, 2001

Authors : A L Mausset, R de Seze, F Montpeyroux, A Privat

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotransmitter Interference : CK(14) : AC(3)

Microwave exposure reduces phosphorylated synapsin I leading to impaired GABA release and cognitive dysfunction.

Pubmed Data : PLoS One. 2014 ;9(4):e95503. Epub 2014 Apr 17. PMID: 24743689

Article Published Date : Jan 01, 2014

Authors : Simo Qiao, Ruiyun Peng, Haitao Yan, Yabing Gao, Changzhen Wang, Shuiming Wang, Yong Zou, Xinping Xu, Li Zhao, Ji Dong, Zhentao Su, Xinxin Feng, Lifeng Wang, Xiangjun Hu

Study Type : Animal Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotransmitter Interference : CK(14) : AC(3) , Phosphorylated synapsin I (Ser-553) Downregulation : CK(4) : AC(2)

Ototoxic (AC 5) (CK 25)

Chronic mobile phone usage revealed high frequency hearing loss in the dominant ear compared to the non dominant ear.

Pubmed Data : Indian J Otolaryngol Head Neck Surg. 2014 Jan ;66(Suppl 1):169-72. Epub 2011 Dec 15. PMID: 24533378

Article Published Date : Jan 01, 2014

Authors : P Velayutham, Gopala Krishnan Govindasamy, R Raman, N Prepageran, K H Ng

Study Type : Human Study
Additional Links
Diseases : Hearing Loss : CK(112) : AC(28)
Additional Keywords : Hearing Loss : CK(112) : AC(28)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

Electromagnetic fields emitted by mobile phone can affect the normal electrophysiological activity of the auditory system.

Pubmed Data : Audiol Neurootol. 2011 ;16(4):270-6. Epub 2010 Nov 16. PMID: 21079392

Article Published Date : Jan 01, 2011

Authors : Antigoni E Kaprana, Theognosia S Chimona, Chariton E Papadakis, Stylianos G Velegrakis, Ioannis O Vardiambasis, Georgios Adamidis, George A Velegrakis

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

The auditory brainstem region is susceptible to chronic exposure to RF radiation, which may affect the function of the central auditory system.

Pubmed Data : Int J Mol Med. 2014 Aug ;34(2):409-19. Epub 2014 May 22. PMID: 24866721

Article Published Date : Aug 01, 2014

Authors : Dhiraj Maskey, Hyung Gun Kim, Myung-Whan Suh, Gu Seob Roh, Myeung Ju Kim

Study Type : Animal Study
Additional Links
Diseases : Auditory Diseases : CK(3) : AC(2)
Additional Keywords : Auditory Diseases : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

This review concludes that there is sufficient evidence to warrant cautionary use of mobile phones to prevent damage to the auditory pathway and the onset or worsening of tinnitus.

Pubmed Data : Braz J Otorhinolaryngol. 2016 Jan-Feb;82(1):97-104. Epub 2015 Sep 21. PMID: 26602000

Article Published Date : Jan 01, 2016

Authors : Luisa Nascimento Medeiros, Tanit Ganz Sanchez

Study Type : Review
Additional Links
Diseases : Tinnitus : CK(226) : AC(28)
Additional Keywords : Tinnitus : CK(226) : AC(28)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

This study shows changes in hearing thresholds of ears exposed to mobile phones compared to nonexposed ears in medical students.

Pubmed Data : J Postgrad Med. 2017 Oct-Dec;63(4):221-225. PMID: 28272071

Article Published Date : Oct 01, 2017

Authors : S Das, S Chakraborty, B Mahanta

Study Type : Human Study
Additional Links
Diseases : Auditory Diseases : CK(3) : AC(2)
Additional Keywords : Auditory Diseases : CK(3) : AC(2)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Ototoxic : CK(2) : AC(1)

Oxidant (AC 155) (CK 393)

0.1 mT magnetic field increases free radical production by phorbol 12-myristate 13- acetate oxidative burst.

Pubmed Data : FEBS Lett. 1995 Dec 4 ;376(3):164-6. PMID: 7498533

Article Published Date : Dec 04, 1995

Authors : S Roy, Y Noda, V Eckert, M G Traber, A Mori, R Liburdy, L Packer

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

1800 MHz RF-EMF fields result in cell type-dependent DNA damage and a significant increase in reactive oxygen species level, however researchers conclude it doesn't contribute to cell dysfunction.

Pubmed Data : PLoS One. 2013 ;8(1):e54906. Epub 2013 Jan 23. PMID: 23355902

Article Published Date : Jan 01, 2013

Authors : Shanshan Xu, Guangdi Chen, Chunjing Chen, Chuan Sun, Danying Zhang, Manuel Murbach, Niels Kuster, Qunli Zeng, Zhengping Xu

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

1800 MHz exposure results in significant increase in cellular reactive oxygen species in vitro.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):381-6. Epub 2015 Aug 28. PMID: 25119294

Article Published Date : Jan 01, 2015

Authors : Ana Marija Marjanovic, Ivan Pavicic, Ivancica Trosic

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Cooking : CK(49) : AC(28)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

1800 MHz increases oxidative stress and apoptosis in mouse-derived sperm cells, but N-acetyl cysteine and autophagy prevented EMF-associated cell death.

Pubmed Data : Toxicol Lett. 2014 Aug 4 ;228(3):216-24. Epub 2014 May 9. PMID: 24813634

Article Published Date : Aug 04, 2014

Authors : Kaijun Liu, Guowei Zhang, Zhi Wang, Yong Liu, Jianyun Dong, Xiaomei Dong, Jinyi Liu, Jia Cao, Lin Ao, Shaoxiang Zhang

Study Type : In Vitro Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)

Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265) , Sperm Count: Low : CK(72) : AC(12), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Additional Keywords : Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1), Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1) , Autophagy : CK(1) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

2.4 GHz electromagnetic field exposure increases DNA oxidation in brain and plasma and plasma protein oxidation in rats. Garlic reduces biomarkers of both DNA and protein oxidation, suggesting it protects against the adverse effects of EMF radiation.

Pubmed Data : Int J Radiat Biol. 2014 Oct ;90(10):892-6. Epub 2014 Jun 25. PMID: **24844368**

Article Published Date : Oct 01, 2014

Authors : HaticeŞ Gürler, Birşen Bilgici, Ayşegül K Akar, Leman Tomak, Abdülkerim Bedir

Study Type : Animal Study
Additional Links
Substances : Garlic : CK(1099) : AC(367)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Genoprotective : CK(413) : AC(148) , Radioprotective : CK(1247) : AC(406)
Additional Keywords : Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406) , Radioprotective : CK(1247) : AC(406), Plant Extracts : CK(11762) : AC(4236) , Plant Extracts : CK(11762) : AC(4236)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

2.45 GHz electromagnetic radiation exposure stimulates proliferation in human leukemia cancer cells via oxidative stress and calcium influx.

Pubmed Data : Int J Radiat Biol. 2012 Jun ;88(6):449-56. Epub 2012 May 2. PMID: **22489926**

Article Published Date : Jun 01, 2012

Authors : Mustafa Nazıroğlu, Bilal Ciğ, Salih Doğan, Abdulhadi Cihangir Uğuz, Selin Dilek,

Dahdouh Faouzi

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48) , Proliferative : CK(17) : AC(6)

2.45 GHz microwave exposure increases lipid peroxidation status in rats and is attentuated by vitamin C and vitamin E.

Pubmed Data : Niger Postgrad Med J. 2003 Dec ;10(4):243-6. PMID: **15045019**

Article Published Date : Dec 01, 2003

Authors : M A Aweda, S Gbenebitse, R O Meidinyo

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792) , Vitamin E : CK(2077) : AC(371)
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

3G cell phone exposure impacts brain function by inducing oxidative stress, DNA fragmentation, and apoptosis through the p38 MAPK pathway.

Pubmed Data : Cell Biochem Biophys. 2014 Mar ;68(2):347-58. PMID: **23949848**

Article Published Date : Mar 01, 2014

Authors : Kavindra Kumar Kesari, Ramovatar Meena, Jayprakash Nirala, Jitender Kumar, H N Verma

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136), Neurologic Disorders : CK(66) : AC(30) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) :

AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 GHz microwave radiation exposure at a specific absorption rate of 0.014 W/kg induces oxidative and genotoxic stress in rats.

Pubmed Data : Indian J Exp Biol. 2010 Jun ;48(6):586-92. PMID: 20882761

Article Published Date : Jun 01, 2010

Authors : Sanjay Kumar, Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 GHz microwave radiation induces oxidative stress and DNA damage in the rat brain.

Pubmed Data : Appl Biochem Biotechnol. 2009 Jul ;158(1):126-39. Epub 2008 Dec 17. PMID: 19089649

Article Published Date : Jul 01, 2009

Authors : Kavindra Kumar Kesari, J Behari

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

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50 Hz electromagnetic fields induce genomic instability in exposed cells.

Pubmed Data : Mutat Res. 2014 Feb ;760:33-41. Epub 2013 Dec 26. PMID: 24374227

Article Published Date : Feb 01, 2014

Authors : Jukka Luukkonen, Anu Liimatainen, Jukka Juutilainen, Jonne Naarala

Study Type : Human In Vitro

Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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50 Hz electromagnetic fields induce superoxide anion release via NADPH oxidase in vitro.

Pubmed Data : Free Radic Res. 2004 Sep ;38(9):985-93. PMID: 15621717

Article Published Date : Sep 01, 2004

Authors : Madeleine Lupke, Jana Rollwitz, Myrtill Simkó

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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50 Hz electromagnetic fields stimulate superoxide radical anion formation in human K562 cells which is attentuated by melatonin.

Pubmed Data : Radiat Environ Biophys. 2010 Nov ;49(4):731-41. Epub 2010 Jun 26. PMID: 20582429

Article Published Date : Nov 01, 2010

Authors : Ann-Christine Mannerling, Myrtill Simkó, Kjell Hansson Mild, Mats-Olof Mattsson

Study Type : Human In Vitro
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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50 days of exposure to 3 MT electromagnetic field induces oxidative stress and lipid peroxidation in rats, which is attentuated by vitamin E.

Pubmed Data : Basic Clin Neurosci. 2016 Oct ;7(4):315-322. PMID: 27872692

Article Published Date : Oct 01, 2016

Authors : Ahmad Ali Ghanbari, Kobra Shabani, Daryoush Mohammad Nejad

Study Type : Animal Study
Additional Links
Substances : Vitamin E : CK(2077) : AC(371)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

50-Hz electromagnetic fields increase free radical release and IL-1B production by mouse macrophages.

Pubmed Data : J Cell Biochem. 2006 Sep 1 ;99(1):168-77. PMID: 16598759

Article Published Date : Sep 01, 2006

Authors : Jana Frahm, Magaréta Lantow, Madeleine Lupke, Dieter G Weiss, Myrtill Simkó

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Oxidant : CK(122) : AC(48)

50-Hz magnetic field affects iron homeostasis in vitro.

Pubmed Data : Int J Radiat Biol. 2019 03 ;95(3):368-377. Epub 2019 Jan 4. PMID: 30513241

Article Published Date : Jan 01, 2019

Authors : Claudia Consales, Martina Panatta, Alessio Butera, Giuseppe Filomeni, Caterina Merla, Maria Teresa Carrì, Carmela Marino, Barbara Benassi

Study Type : Human In Vitro
Additional Links
Diseases : Amyotrophic Lateral Sclerosis : CK(567) : AC(140)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

50-Hz magnetic field increases intracellular reactive oxygen species in amniotic epithelial cells.

Pubmed Data : Int J Radiat Biol. 2016 ;92(3):148-55. Epub 2016 Feb 5. PMID: 26850078

Article Published Date : Jan 01, 2016

Authors : Baihuan Feng, Liping Qiu, Chunmei Ye, Liangjing Chen, Yiti Fu, Wenjun Sun

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

50-Hz magnetic field induces a clustering of epidermal growth factor receptor in human amniotic epithelial cells mediated by Nox-induced superoxide.

Pubmed Data : Int J Radiat Biol. 2016 10 ;92(10):596-602. Epub 2016 Jul 21. PMID: 27442448

Article Published Date : Jan 10, 2016

Authors : Baihuan Feng, Ahui Dai, Liangjing Chen, Liping Qiu, Yiti Fu, Wenjun Sun

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

50-Hz magnetic fields are able to potentiate cellular damage induced in vitro by oxidizing agents.

Pubmed Data : Bioelectromagnetics. 1997 ;18(2):125-31. PMID: 9084863

Article Published Date : Jan 01, 1997

Authors : M Fiorani, B Biagiarelli, F Vetrano, G Guidi, M Dachà, V Stocchi

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

50-MHz magnetic field exposure induces micronuclei formation and superoxide production in a seemingly dose-dependent way.

Pubmed Data : J R Soc Interface. 2016 Jan ;13(114):20150995. PMID: 26791000

Article Published Date : Jan 01, 2016

Authors : Kavindra Kumar Kesari, Jukka Juutilainen, Jukka Luukkonen, Jonne Naarala

Study Type : Human In Vitro
Additional Links
Diseases : Neuroblastoma : CK(86) : AC(53)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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60 Hz electromagnetic field exposure may increase oxidative stress and lipid peroxidation in rats.

Pubmed Data : J Diabetes Metab Disord. 2014 ;13(1):85. Epub 2014 Aug 13. PMID: **25152870**

Article Published Date : Jan 01, 2014

Authors : Soroush Seifirad, Shahrokh Farzampour, Mitra Nourbakhsh, Mahsa Mohammad Amoli, Maryam Razzaghy-Azar, Bagher Larijani

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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60 Hz electromagnetic fields deteriorate the antioxidant defensive system by reactive oxygen species.

Pubmed Data : J Photochem Photobiol B. 2004 Jan 23 ;73(1-2):43-8. PMID: **14732250**

Article Published Date : Jan 23, 2004

Authors : Byung-Cheon Lee, Hyeon-Min Johng, Jae-Kwan Lim, Ji Hoon Jeong, Ku Youn Baik, Tae Jeong Nam, Jung Ho Lee, Jungdae Kim, Uy Dong Sohn, Gilwon Yoon, Sanghoon Shin, Kwang-Sup Soh

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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60 Hz electromagnetic fields potentiate superoxide dismutase release by polymorphonuclear leukocytes in response to phorbol 12-myristate 13-acetate.

Pubmed Data : Biochim Biophys Acta. 1999 Oct 18 ;1472(1-2):359-67. PMID: **10572957**

Article Published Date : Oct 18, 1999

Authors : R Khadir, J L Morgan, J J Murray

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

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60 Hz sinusoidal magnetic field induces single and double-strand DNA breaks through the involvement of free radicals.

Pubmed Data : Environ Health Perspect. 2004 May ;112(6):687-94. PMID: **15121512**

Article Published Date : May 01, 2004

Authors : Henry Lai, Narendra P Singh

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Apoptotic : CK(5217) : AC(3846)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

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872 MHz radiofrequency radiation may enhance oxidative stress in already stressed cells.

Pubmed Data : Radiat Res. 2008 Aug ;170(2):235-43. PMID: **18666817**

Article Published Date : Aug 01, 2008

Authors : Anne Höytö, Jukka Luukkonen, Jukka Juutilainen, Jonne Naarala

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

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900 MHz electromagnetic field exposure exacerbates the neurotoxic effect of hydrogen peroxide in rat primary cortical neurons.

Pubmed Data : Bioelectromagnetics. 2009 Oct ;30(7):564-72. PMID: **19479910**

Article Published Date : Oct 01, 2009

Authors : Giovanna Del Vecchio, Alessandro Giuliani, Mercedes Fernandez, Pietro Mesirca, Ferdinando Bersani, Rosanna Pinto, Lucia Ardoino, Giorgio A Lovisolo, Luciana Giardino, Laura Calzà

Study Type : In Vitro Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Acute doses of electromagnetic radiation produced by mobile phones on the rat's antioxidant status is significantly higher than those of fractionated doses of the same type of radiation.

Pubmed Data : Pak J Biol Sci. 2007 Dec 1 ;10(23):4271-4. PMID: 19086584

Article Published Date : Dec 01, 2007

Authors : M A Elhag, Ghada M Nabil, Atef M M Attia

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Alterations seen in visual evoked potentials by extremely low frequency electric fields, at least partly, could be explained by lipid peroxidation in the retina and brain.

Pubmed Data : Electromagn Biol Med. 2016 ;35(1):65-74. Epub 2014 Dec 11. PMID: 25496054

Article Published Date : Jan 01, 2016

Authors : Deniz Kantar Gok, Deniz Akpinar, Enis Hidisoglu, Sukru Ozen, Aysel Agar, Piraye Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Aluminum and ELF-MF may impact on learning memory and potentiate oxidative stress in mice.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):243-52. Epub 2013 Oct 26. PMID: 24158621

Article Published Date : Dec 01, 2013

Authors : Yuanxin Deng, Yanwen Zhang, Shujie Jia, Junkang Liu, Yanxia Liu, Weiwei Xu, Lei Liu

Study Type : Animal Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Aluminum : CK(533) : AC(185)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Animals exposed to 1.8 GHz radiofrequency field exhibit decreases in glutathione peroxidase, superoxide dismutase, and melatonin.

Pubmed Data : Int J Environ Res Public Health. 2015 Feb 12 ;12(2):2071-87. Epub 2015 Feb 12. PMID: **25685954**

Article Published Date : Feb 12, 2015

Authors : Honglong Cao, Fenju Qin, Xueguan Liu, Jiajun Wang, Yi Cao, Jian Tong, Heming Zhao

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Oxidant : CK(122) : AC(48)

Both extremely low-frequency electromagnetic fields and radiofrequency electromagnetic fields induce DNA damage in vitro, but in different ways.

Pubmed Data : Radiat Res. 2015 Mar ;183(3):305-14. Epub 2015 Feb 17. PMID: **25688995**

Article Published Date : Mar 01, 2015

Authors : Weixia Duan, Chuan Liu, Lei Zhang, Mindi He, Shangcheng Xu, Chunhai Chen, Huifeng Pi, Peng Gao, Yanwen Zhang, Min Zhong, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Cell-specific redox may explain the differential effects of electromagnetic fields.

Pubmed Data : Curr Med Chem. 2007 ;14(10):1141-52. PMID: 17456027

Article Published Date : Jan 01, 2007

Authors : Myrtill Simkó

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

ELF-EMF exerts differential effects depending on the exogenous conditions.

Pubmed Data : Bioelectromagnetics. 2012 Dec ;33(8):641-51. Epub 2012 Apr 25. PMID: 22535669

Article Published Date : Dec 01, 2012

Authors : Rafał Jakub Bułdak, Renata Polaniak, Lukasz Bułdak, Krystyna Zwirska-Korczala, Magdalena Skonieczna, Aleksandra Monsiol, Michał Kukla, Anna Duława-Bułdak, Ewa Birkner

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

ELF-MF applied for 30 min/day for 10 days can affect free radical generation in the brain.

Pubmed Data : J Physiol Pharmacol. 2011 Dec ;62(6):657-61. PMID: 22314568

Article Published Date : Dec 01, 2011

Authors : Elzbieta Ciejka, P Kleniewska, B Skibska, A Goraca

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

ELF-MFs alter the expression of the α-synuclein, which is

specifically stimulated upon ELF-MFs exposure via both direct miR-34 targeting and oxidative stress.

Pubmed Data : Mol Neurobiol. 2018 Jul ;55(7):5698-5714. Epub 2017 Oct 16. PMID: 29039021

Article Published Date : Jul 01, 2018

Authors : Claudia Consales, Claudia Cirotti, Giuseppe Filomeni, Martina Panatta, Alessio Butera, Caterina Merla, Vanni Lopresto, Rosanna Pinto, Carmela Marino, Barbara Benassi

Study Type : In Vitro Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

ELF-MFs may evoke the changesin the levels of biogenic amines, amino acids, and nitric oxide in the rat brain.

Pubmed Data : Korean J Physiol Pharmacol. 2015 Jan ;19(1):15-20. Epub 2014 Dec 31. PMID: 25605992

Article Published Date : Jan 01, 2015

Authors : Yoon Hee Chung, Young Joo Lee, Ho Sung Lee, Su Jin Chung, Cheol Hee Lim, Keon Woong Oh, Uy Dong Sohn, Eon Sub Park, Ji Hoon Jeong

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Effects of electromagnetic fields exposure on the antioxidant defense system.

Pubmed Data : J Microsc Ultrastruct. 2017 Oct-Dec;5(4):167-176. Epub 2017 Aug 2. PMID: 30023251

Article Published Date : Sep 30, 2017

Authors : Elfide Gizem Kıvrak, Kıymet Kübra Yurt, Arife Ahsen Kaplan, Işınsu Alkan, Gamze Altun

Study Type : Review
Additional Links
Diseases : Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic field exposure induces oxidative stress in human cells but is overcome by stable antioxidant enzyme function.

Pubmed Data : Photochem Photobiol Sci. 2014 Jul ;13(7):1082-92. Epub 2014 Jun 2. PMID: 24886806

Article Published Date : Jul 01, 2014

Authors : Yahya Sefidbakht, Ali Akbar Moosavi-Movahedi, Saman Hosseinkhani, Fariba Khodagholi, Masoud Torkzadeh-Mahani, Forough Foolad, Reza Faraji-Dana

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields are a mild stressor that alter oxidative stress balance in the brain of rats.

Pubmed Data : Arch Med Res. 2012 Apr ;43(3):183-9. Epub 2012 May 3. PMID: 22560984

Article Published Date : Apr 01, 2012

Authors : Jesús Martínez-Sámano, Patricia V Torres-Durán, Marco Antonio Juárez-Oropeza, Leticia Verdugo-Díaz

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields directly activate macrophages, stimulating elevated levels of free radical production. This may lead to downstream carcinogenic, genotoxic, and melatonin-depleting effects.

Pubmed Data : J Cell Biochem. 2004 Sep 1 ;93(1):83-92. PMID: 15352165

Article Published Date : Sep 01, 2004

Authors : Myrtill Simkó, Mats-Olof Mattsson

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogen : CK(61) : AC(12) , Genotoxic : CK(201) : AC(78) , Immunotoxic : CK(338) : AC(66) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Electromagnetic fields emitted from mobile phones induce oxidative damage in guinea pig brains.

Pubmed Data : Brain Res. 2007 Sep 12 ;1169:120-4. Epub 2007 Jul 17. PMID: 17674954

Article Published Date : Sep 12, 2007

Authors : Ismail Meral, Handan Mert, Nihat Mert, Yeter Deger, Ibrahim Yoruk, Ayşen Yetkin, Siddik Keskin

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields induce lipid peroxidation in human blood platelets.

Pubmed Data : Rocz Akad Med Bialymst. 2005 ;50 Suppl 1:23-5. PMID: 16119619

Article Published Date : Jan 01, 2005

Authors : A Buczyński, K Pacholski, M Dziedziczak-Buczyńska, G Henrykowska, A Jerominko

Study Type : Human In Vitro
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields induce oxidative stress in aquatic organisms, suggesting a possible negative effect of transmission lines.

Pubmed Data : Int J Radiat Biol. 2017 08 ;93(8):818-830. Epub 2017 May 25. PMID: 28452248

Article Published Date : Jan 01, 2017

Authors : Marko Miliša, Domagoj Đikić, Tvrtko Mandić, Dino Grozić, Ivan Čolić, Ana Ostojić

Study Type : Animal Study, Environmental
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields induce oxidative stress in the brain of rats, leading to aberrant neuronal functions.

Pubmed Data : Gen Physiol Biophys. 2014 ;33(1):81-90. Epub 2013 Dec 13. PMID: 24334533

Article Published Date : Jan 01, 2014

Authors : Pavan K Manikonda, Pilankatta Rajendra, D Devendranath, B Gunasekaran, Channakeshava, Shivakumara R S Aradhya, Rao B Sashidhar, Chivukula Subramanyam

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Electromagnetic fields induce reactive oxygen species generation and differentiation of human bone marrow derived mesenchymal stem cells through epidermal growth factor receptor in vitro.

Pubmed Data : Neurochem Int. 2013 Mar ;62(4):418-24. Epub 2013 Feb 11. PMID: 23411410

Article Published Date : Mar 01, 2013

Authors : Jeong-Eun Park, Young-Kwon Seo, Hee-Hoon Yoon, Chan-Wha Kim, Jung-Keug Park, Songhee Jeon

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48) , Proliferative : CK(17) : AC(6)

Electromagnetic fields may alter biological function through calcium channels and reactive oxygen species.

Pubmed Data : Cell Physiol Biochem. 2010 ;26(6):947-58. Epub 2011 Jan 4. PMID: 21220925

Article Published Date : Jan 01, 2010

Authors : Caterina Morabito, Simone Guarnieri, Giorgio Fanò, Maria A Mariggiò

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields may induce oxidative stress in human neuronal cells.

Pubmed Data : PLoS One. 2014 ;9(8):e104973. Epub 2014 Aug 15. PMID: **25127118**

Article Published Date : Jan 01, 2014

Authors : Marcella Reale, Mohammad A Kamal, Antonia Patruno, Erica Costantini, Chiara D'Angelo, Miko Pesce, Nigel H Greig

Study Type : Human In Vitro
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic fields may interact with cryptochrome to promote carcinogenesis.

Pubmed Data : Proc Biol Sci. 2018 05 30 ;285(1879). PMID: **29794049**

Article Published Date : Jan 30, 2018

Authors : Jukka Juutilainen, Mikko Herrala, Jukka Luukkonen, Jonne Naarala, P J Hore

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Oxidant : CK(122) : AC(48)

Electromagnetic fields may interact with mammalian cryptochrome to alter redox balance in cells.

Pubmed Data : PLoS Biol. 2018 10 ;16(10):e3000018. Epub 2018 Oct 2. PMID: **30278038**

Article Published Date : Jan 10, 2018

Authors : Lukas Landler, David A Keays

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Oxidant : CK(122) : AC(48)

Electromagnetic pulse radiation induces oxidative stress and apoptosis, leading to brain damage in rats.

Pubmed Data : PLoS One. 2014 ;9(3):e91019. Epub 2014 Mar 10. PMID: **24614080**

Article Published Date : Jan 01, 2014

Authors : Bin Deng, Hao Xu, Jin Zhang, Jin Wang, Li-Chun Han, Li-Ya Li, Guang-Li Wu, Yan-Ning Hou, Guo-Zhen Guo, Qiang Wang, Han-Fei Sang, Li-Xian Xu

Study Type : Animal Study
Additional Links
Diseases : Brain Damage : CK(93) : AC(44) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation causes age-related changes in the production of nitric oxide, which may lead to different courses of the proliferation cascade in newborn and young adult neurogenesis.

Pubmed Data : Acta Histochem. 2011 Nov ;113(7):723-8. Epub 2010 Oct 15. PMID: **20950843**

Article Published Date : Nov 01, 2011

Authors : Judita Orendáčová, Martin Orendáč, Miroslav Mojžiš, Ján Labun, Marcela Martončíková, Kamila Saganová, Kamila Lievajová, Juraj Blaško, Henrieta Abdiová, Ján Gálik, Eniko Račeková

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation exacerbates free radical production in iron-treated cells in vitro.

Pubmed Data : Bioelectromagnetics. 2004 Jul ;25(5):324-8. PMID: **15197754**

Article Published Date : Jul 01, 2004

Authors : Marek Zmyślony, Piotr Politanski, Elzbieta Rajkowska, Wieslaw Szymczak, Jolanta Jajte

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Electromagnetic radiation from Wi-Fi or cell phones placed within 10cm of cell cultures results in increased oxidative stress and apoptosis.

Pubmed Data : Biochim Biophys Acta. 2015 Oct ;1848(10 Pt B):2756-65. Epub 2015 Feb 19. PMID: 25703814

Article Published Date : Oct 01, 2015

Authors : Bilal Çiğ, Mustafa Nazıroğlu

Study Type : Human In Vitro
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Oxidative Stress : CK(6519) : AC(2436), Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265) , Radiation Induced Illness : CK(1048) : AC(265), Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation induces oxidative stress and DNA damage in the earthworm.

Pubmed Data : Ecotoxicol Environ Saf. 2013 Apr ;90:7-12. Epub 2013 Jan 24. PMID: 23352129

Article Published Date : Apr 01, 2013

Authors : Mirta Tkalec, Anamaria Stambuk, Maja Srut, Krešimir Malarić, Göran I V Klobučar

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Electromagnetic radiation induces structural changes in the brains of rats and impacts redox and inflammatory systems.

Pubmed Data : Turk Neurosurg. 2013 ;23(6):707-15. PMID: 24310452

Article Published Date : Jan 01, 2013

Authors : Olcay Eser, Ahmet Songur, Cevat Aktas, Ergun Karavelioglu, Veli Caglar, Firdevs Aylak, Fehmi Ozguner, Mehmet Kanter

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Interleukin-1 beta downregulation : CK(1743) : AC(868)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Inflammatory : CK(312) : AC(92), Oxidant : CK(122) : AC(48)

Electronic equipment repairers, exposed to ELF-EMF, are at a risk of oxidative stress and sleep insufficiency, which could be explained by lower plasma melatonin levels and higher MDA levels.

Pubmed Data : Indian J Occup Environ Med. 2010 Sep ;14(3):66-70. PMID: **21461157**

Article Published Date : Sep 01, 2010

Authors : Mohamed El-Helaly, E Abu-Hashem

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Sleep Disorders : CK(722) : AC(92)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Melatonin Interference : CK(2) : AC(2) , Oxidant : CK(122) : AC(48)

Epidemiological studies document an increased incidence of cancers among long-term users of mobile phones which is supported by mechanistic evidence

Pubmed Data : Exp Oncol. 2010 Jul ;32(2):54-60. PMID: **20693976**

Article Published Date : Jul 01, 2010

Authors : I Yakymenko, E Sidorik

Study Type : Review
Additional Links

Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Carcinogenic (suspected) : CK(21) : AC(3), Oxidant : CK(122) : AC(48)

Exposure of quail embryos to 900 MHz results in an overproduction of free radicals and DNA damage.

Pubmed Data : Exp Oncol. 2013 Sep ;35(3):219-25. PMID: 24084462

Article Published Date : Sep 01, 2013

Authors : A Burlaka, O Tsybulin, E Sidorik, S Lukin, V Polishuk, S Tsehmistrenko, I Yakymenko

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic : CK(1000) : AC(144) , Genotoxic : CK(201) : AC(78), Oxidant : CK(122) : AC(48)

Exposure to 2400 MHz induces oxidative stress in the brains and ovaries of female rats. Exposure, especially in the prenatal period, results in delayed puberty and postnatal growth restriction.

Pubmed Data : Electromagn Biol Med. 2015 Mar ;34(1):63-71. Epub 2014 Jan 24. PMID: 24460416

Article Published Date : Mar 01, 2015

Authors : Ozlem Sangun, Bumin Dundar, Hakan Darici, Selcuk Comlekci, Duygu Kumbul Doguc, Suheyla Celik

Study Type : Animal Study
Additional Links
Diseases : , Oxidative Stress : CK(6519) : AC(2436) , Puberty: Delayed : CK(2) : AC(1)
Additional Keywords : Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1), Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1) , Puberty: Delayed : CK(2) : AC(1), Puberty: Delayed : CK(2) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)

Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to ELF-MFs may act as a risk factor for the occurrence of oxidative stress-based nervous system pathologies associated with ageing.

Pubmed Data : Int J Biochem Cell Biol. 2008 ;40(12):2762-70. Epub 2008 Jun 10. PMID: 18585472

Article Published Date : Jan 01, 2008

Authors : Stefano Falone, Alessandro Mirabilio, Maria Cristina Carbone, Vincenzo Zimmitti, Silvia Di Loreto, Maria Addolorata Mariggiò, Rosa Mancinelli, Carmine Di Ilio, Fernanda Amicarelli

Study Type : Animal Study
Additional Links
Diseases : Aging : CK(2716) : AC(676) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to cell phone waves can decrease sperm viability and motility in rats.

Pubmed Data : Int J Fertil Steril. 2013 Apr ;7(1):21-8. Epub 2013 Mar 6. PMID: 24520459

Article Published Date : Apr 01, 2013

Authors : Masoud Ghanbari, Seyed Bagher Mortazavi, Ali Khavanin, Mozafar Khazaei

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to electromagnetic fields far below current exposure limits results in increased biomarkers oxidative stress in rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(3):177-88. PMID: 16954120

Article Published Date : Jan 01, 2006

Authors : Ali Ihsan Yurekli, Mehmed Ozkan, Tunaya Kalkan, Hale Saybasili, Handan Tuncel, Pinar Atukeren, Koray Gumustas, Selim Seker

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Exposure to extremely low electromagnetic fields induces oxidative stress in the rat ovary and uterus.

Pubmed Data : Electromagn Biol Med. 2016 ;35(3):245-59. Epub 2016 Apr 12. PMID: 27070942

Article Published Date : Jan 01, 2016

Authors : Deniz Akpınar, Deniz Kantar Gok, Enis Hidisoglu, Mutay Aslan, Sukru Ozen, Aysel Agar, Piraye Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to low magnetic field at 40 Hz, 7 mT for 30 min/day and 60 min/day for 2 weeks significantly increased the total glutathione levels in the skeletal muscle compared to controls.

Pubmed Data : Med Pr. 2014 ;65(3):343-9. PMID: 25230563

Article Published Date : Jan 01, 2014

Authors : Elzbieta Ciejka, Ewa Jakubowska, Paulina Zelechowska, Halina Huk-Kolega, Agata Kowalczyk, Anna Goraca

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to static magnetic field causes accumulation of reactive oxygen species in Vicia faba L. and natural

radioactivity of soil exaggerates oxidative stress.

Pubmed Data : Mutat Res. 2012 Jan 24 ;741(1-2):116-21. Epub 2011 Nov 16. PMID: 22108253

Article Published Date : Jan 24, 2012

Authors : Fatemeh Javani Jouni, Parviz Abdolmaleki, Faezeh Ghanati

Study Type : Plant Study
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Exposure to static magnetic fields induced oxidative stress in rat kidneys that can be prevented by treatment with selenium or vitamin E.

Pubmed Data : Gen Physiol Biophys. 2015 Jan ;34(1):23-32. Epub 2014 Nov 14. PMID: 25395602

Article Published Date : Jan 01, 2015

Authors : Soumaya Ghodbane, Aida Lahbib, Mohamed Ammari, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188) , Vitamin E : CK(2077) : AC(371)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Nephrotoxic : CK(179) : AC(43) , Oxidant : CK(122) : AC(48)

Exposures to extremely low frequency magnetic field induces serious oxidative stress in the hippocampus and striatum and impaired hippocampal-dependent spatial learning and striatum-dependent habit learning in rats.

Pubmed Data : PLoS One. 2012 ;7(5):e32196. Epub 2012 May 3. PMID: 22570685

Article Published Date : Jan 01, 2012

Authors : Yonghua Cui, Zhiqiang Ge, Joshua Dominic Rizak, Chao Zhai, Zhu Zhou, Songjie Gong, Yi Che

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Oxidative Stress : CK(6519) :

AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic field induces anxiety-like behavior which is mediated by oxidative stress.

Pubmed Data : Environ Sci Pollut Res Int. 2017 Sep ;24(27):21693-21699. Epub 2017 Jul 29. PMID: 28756602

Article Published Date : Sep 01, 2017

Authors : Natasa Z Djordjevic, Milica G Paunović, Aleksandar S Peulić

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Anxiogenic : CK(6) : AC(3) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields increase oxidative stress and induces apoptosis. Incubation with N-acetylcysteine and glutathione reduces oxidative damage and prevents cell death.

Pubmed Data : Mol Neurobiol. 2016 08 ;53(6):4247-4260. Epub 2015 Jul 30. PMID: 26223801

Article Published Date : Jan 01, 2016

Authors : Barbara Benassi, Giuseppe Filomeni, Costanza Montagna, Caterina Merla, Vanni Lopresto, Rosanna Pinto, Carmela Marino, Claudia Consales

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields induce lipid peroxidation in the brain and retina of rats.

Pubmed Data : Electromagn Biol Med. 2012 Dec ;31(4):436-48. Epub 2012 Oct 9. PMID: 23045992

Article Published Date : Dec 01, 2012

Authors : Deniz Akpinar, Nihal Ozturk, Sukru Ozen, Aysel Agar, Piraye Yargicoglu

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields induce reactive oxygen species generation by a different pathway than traditional oxidants.

Pubmed Data : Toxicol Lett. 2010 Feb 15 ;192(3):330-6. Epub 2009 Nov 12. PMID: 19913603

Article Published Date : Feb 15, 2010

Authors : Jana Frahm, Mats-Olof Mattsson, Myrtill Simkó

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Heat Shock Protein Inducer : CK(83) : AC(30)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields may alter the redox status of muscle cells.

Pubmed Data : Free Radic Biol Med. 2010 Feb 15 ;48(4):579-89. Epub 2009 Dec 11. PMID: 20005945

Article Published Date : Feb 15, 2010

Authors : Caterina Morabito, Francesca Rovetta, Mariano Bizzarri, Giovanna Mazzoleni, Giorgio Fanò, Maria A Mariggiò

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields may induce anxiety-like behavior and oxidative stress.

Pubmed Data : Behav Brain Res. 2019 02 1 ;359:630-638. Epub 2018 Oct 2. PMID: 30290199

Article Published Date : Jan 01, 2019

Authors : Seyed Asaad Karimi, Iraj Salehi, Teimor Shykhi, Samad Zare, Alireza Komaki

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Anxiogenic : CK(6) : AC(3) , Oxidant : CK(122) : AC(48)

Extremely low frequency electromagnetic fields stimulates oxidative stress in human keratinocytes.

Pubmed Data : Biotechnol Appl Biochem. 2017 May ;64(3):415-422. Epub 2016 Oct 10. PMID: 27001710

Article Published Date : May 01, 2017

Authors : Cinzia Calcabrini, Umberto Mancini, Roberta De Bellis, Anna Rita Diaz, Maddalena Martinelli, Luigi Cucchiarini, Piero Sestili, Vilberto Stocchi, Lucia Potenza

Study Type : Human In Vitro
Additional Links
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency magnetic field induces lipid peroxidation and reactive oxygen species in mouse cerebellum.

Pubmed Data : Gen Physiol Biophys. 2011 Dec ;30(4):415-21. PMID: 22131325

Article Published Date : Dec 01, 2011

Authors : Li Y Chu, Jong H Lee, Yun S Nam, Yu J Lee, Won-Hee Park, Byung-Cheon Lee, Daejin Kim, Yoon H Chung, Ji H Jeong

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low frequency magnetic fields induce alterations and oxidative stress at a cellular level in the uterus and ovaries of rats after long-term exposure.

Pubmed Data : Med Sci Monit. 2006 Jun ;12(6):BR215-20. Epub 2006 May 29. PMID: 16733479

Article Published Date : Jun 01, 2006

Authors : Feyzan Aksen, M Zulkuf Akdag, Aydin Ketani, Beran Yokus, Abdurrahman Kaya, Suleyman Dasdag

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Extremely low-frequency electric fields at different intensities may induce lipid peroxidation.

Pubmed Data : Neuroscience. 2014 Jul 11 ;272:154-66. Epub 2014 May 6. PMID: 24811084

Article Published Date : Jul 11, 2014

Authors : D Kantar Gok, D Akpinar, P Yargicoglu, S Ozen, M Aslan, N Demir, N Derin, A Agar

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Extremely low-frequency electromagnetic fields induce oxidative stress in liver rat tissue.

Pubmed Data : Cell Biochem Biophys. 2011 Mar ;59(2):71-7. PMID: 20824388

Article Published Date : Mar 01, 2011

Authors : Mustafa Emre, Salih Cetiner, Sevil Zencir, Isa Unlukurt, Ibrahim Kahraman, Zeki Topcu

Study Type : In Vitro Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Oxidant : CK(122) : AC(48)

Extremely low-frequency magnetic field exposure induces oxidative stress in the rat brain.

Pubmed Data : Biol Trace Elem Res. 2010 Dec ;138(1-3):238-49. Epub 2010 Feb 23. PMID: 20177816

Article Published Date : Dec 01, 2010

Authors : Mehmet Zulkuf Akdag, Suleyman Dasdag, Engin Ulukaya, Ali Kemal Uzunlar, Mustafa

Ayberk Kurt, Abdullah Taşkin

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Extremely low-frequency magnetic field increases the ability of hydrogen peroxide to induce mutations in pTN89 plasmids.

Pubmed Data : Mutat Res. 2004 May 9 ;560(1):27-32. PMID: 15099821

Article Published Date : May 09, 2004

Authors : Shin Koyama, Takehisa Nakahara, Hideki Hirose, Gui-Rong Ding, Yoshio Takashima, Yasuhito Isozumi, Junji Miyakoshi

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Extremely-low frequency EMF exposure increases reactive oxygen species in bone marrow cells.

Pubmed Data : Electromagn Biol Med. 2010 Aug ;29(3):122-30. PMID: 20707646

Article Published Date : Aug 01, 2010

Authors : Inhan-Garip Ayşe, Akan Zafer, Oncul Sule, Işal-Turgut Işil, Tunaya Kalkan

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Findings from this study indicate the possible role of increased oxidative stress in the pathophysiology of adverse effects of electromagnetic radiation.

Pubmed Data : Cell Biochem Funct. 2002 Dec ;20(4):279-83. PMID: 12415560

Article Published Date : Dec 01, 2002

Authors : M Kemal Irmak, Ersin Fadillioğlu, Mukaddes Güleç, Hasan Erdoğan, Murat Yağmurca, Omer Akyol

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Free radical concentration increase within the cell caused by radiofrequency/microwave radiation seems to be a biologically relevant hypothesis to give clear insight into the RF/MW action at non-thermal level of radiation.

Pubmed Data : Arh Hig Rada Toksikol. 2012 Sep ;63(3):407-16. PMID: 23152390

Article Published Date : Sep 01, 2012

Authors : Ana Marija Marjanović, Ivan Pavičić, Ivančica Trošić

Study Type : Review
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

GSM radiation destroys ovarian egg chambers in Drosophilia flies.

Pubmed Data : Cell Biochem Biophys. 2012 Jun ;63(2):121-32. PMID: 22367734

Article Published Date : Jun 01, 2012

Authors : Dimitris J Panagopoulos

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Gadolinium induces DNA damage which is enhanced by extremely low frequency electromagnetic fields.

Pubmed Data : Drug Chem Toxicol. 2014 Oct ;37(4):440-7. Epub 2014 Jan 30. PMID: 24479558

Article Published Date : Oct 01, 2014

Authors : Seunghyun Cho, Younghyun Lee, Sunyeong Lee, Young Joo Choi, Hai Won Chung

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Gadolinium : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

L-carnitine and selenium seem to have protective effects on the 2.45 GHz-induced oxidative stress in the rat brain.

Pubmed Data : Int J Radiat Biol. 2009 Aug ;85(8):680-9. PMID: 19637079

Article Published Date : Aug 01, 2009

Authors : Mustafa Naziroğlu, Nurhan Gümral

Study Type : Animal Study
Additional Links
Substances : Carnitine : CK(441) : AC(70), Selenium : CK(999) : AC(188)
Diseases : Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Liver antioxidant stores protect the brain from oxidative damage as a result of exposure to 900 MHz and 1800 MHz electromagnetic fields.

Pubmed Data : J Matern Fetal Neonatal Med. 2014 Dec ;27(18):1915-21. Epub 2014 Apr 9. PMID: 24580725

Article Published Date : Dec 01, 2014

Authors : Hasan Çetin, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Nural Pastacı, Mehmet Okan Özkaya

Study Type : Animal Study
Additional Links
Substances : Glutathione : CK(63) : AC(17) , Selenium : CK(999) : AC(188) , Vitamin A : CK(678) : AC(102), Vitamin E : CK(2077) : AC(371)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Mobile Phone-Induced Oxidative Stress : CK(85) : AC(18), Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Neuroprotective Agents : CK(6374) : AC(2801)
Additional Keywords : Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Neuroprotective Agents : CK(6374) : AC(2801), Neuroprotective Agents : CK(6374) : AC(2801) , Pregnancy And Fetal Growth :

CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Long-term ELF-MF exposure may enhance the oxidative/nitrosative stress in liver tissue of the female rats.

Pubmed Data : J Radiat Res. 2008 Mar ;49(2):181-7. PMID: 18367817

Article Published Date : Mar 01, 2008

Authors : Nurten Erdal, Serkan Gürgül, Lülüfer Tamer, Lokman Ayaz

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Oxidant : CK(122) : AC(48)

Long-term EMF exposure may be linked to higher levels of oxidative stress.

Pubmed Data : Environ Res. 2001 Jun ;86(2):198-207. PMID: 11437466

Article Published Date : Jun 01, 2001

Authors : K J Fernie, D M Bird

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Long-term exposure to an electromagnetic field affects bone and thyroid metabolism and also increases oxidative stress index by increasing the total oxidant status and decreasing the antioxidant status.

Pubmed Data : Onco Targets Ther. 2016 ;9:745-54. Epub 2016 Feb 12. PMID: 26929645

Article Published Date : Jan 01, 2016

Authors : Halil Kunt, İhsan Şentürk, Yücel Gönül, Mehmet Korkmaz, Ahmet Ahsen, Ömer Hazman,

Ahmet Bal, Abdurrahman Genç, Ahmet Songur

Study Type : Human Study
Additional Links
Diseases : Bone Diseases : CK(18) : AC(6) , Hypothyroidism : CK(584) : AC(90), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21) , Oxidant : CK(122) : AC(48)

Long-term exposure to cell phone radiation increases apoptosis and oxidative stress while depleting antioxidant activity in the brains of young and adult rats.

Pubmed Data : Cell Biochem Biophys. 2014 Nov ;70(2):845-55. PMID: 24801773

Article Published Date : Nov 01, 2014

Authors : Tarek K Motawi, Hebatallah A Darwish, Yasser M Moustafa, Mohammed M Labib

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Lotus seed procyanidins prevent oxidative stress by extremely low frequency electromagnetic fields in mice.

Pubmed Data : Biomed Pharmacother. 2016 Aug ;82:640-8. Epub 2016 Jun 13. PMID: 27470407

Article Published Date : Aug 01, 2016

Authors : Xiaoping Luo, Meng Chen, Yuqing Duan, Wenyi Duan, Haihui Zhang, Yuanqing He, Chunchun Yin, Guibo Sun, Xiaobo Sun

Study Type : Animal Study
Additional Links
Substances : Lotus : CK(153) : AC(108), Proanthocyanidins : CK(24) : AC(12)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Chemoprotective Agents : CK(356) : AC(146), Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Lotus seedpod procyanidins mitigate the oxidative effects and learning and memory damage caused by extremely low frequency electromagnetic fields on

Pubmed Data : Food Funct. 2013 Aug ;4(8):1252-62. PMID: 23764910

Article Published Date : Aug 01, 2013

Authors : Yuqing Duan, Zhigao Wang, Haihui Zhang, Yuanqing He, Rongzhu Lu, Rui Zhang, Guibo Sun, Xiaobo Sun

Study Type : Animal Study
Additional Links
Substances : Lotus : CK(153) : AC(108)
Diseases : Learning disorders : CK(194) : AC(53) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Additional Keywords : Plant Extracts : CK(11762) : AC(4236) , Proanthocyanidins : CK(203) : AC(54)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Low magnetic field used in magnetotherapy causes the significant changes of the generating the reactive forms of oxygen in the muscles which depend on the parameters of low magnetic field.

Pubmed Data : Pol Merkur Lekarski. 2010 Dec ;29(174):361-4. PMID: 21298985

Article Published Date : Dec 01, 2010

Authors : Elzbieta Ciejka, Beata Skibska, Paulina Kleniewska, Anna Goraca

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Low-frequency electromagnetic fields lowers the heart rate and impairs the antioxidant defense system in rats.

Pubmed Data : Wiad Lek. 2009 ;62(2):81-6. PMID: 20141054

Article Published Date : Jan 01, 2009

Authors : Elzbieta B Ciejka, Anna Goraca

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Male rat testes exposed to a 900 MHz electromagnetic field exhibited altered sperm quality and biochemical characteristics.

Pubmed Data : Biotech Histochem. 2016 ;91(1):9-19. Epub 2015 Oct 15. PMID: 26472053

Article Published Date : Jan 01, 2016

Authors : E Odacı, H Hancı, E Yuluğ, S Türedi, Y Aliyazıcıoğlu, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Apoptotic : CK(5217) : AC(3846) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Melatonin attentuates the spermatotoxic effects of radiofrequency radiation in mice.

Pubmed Data : Toxicol Ind Health. 2018 May ;34(5):315-327. Epub 2018 Mar 21. PMID: 29562845

Article Published Date : May 01, 2018

Authors : Neelam Pandey, Sarbani Giri

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436), Sperm Quality: Low : CK(222) : AC(48)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Genoprotective : CK(413) : AC(148)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Melatonin confers radioprotective effects against mobil phone-induced oxidative stress in the rat brain.

Pubmed Data : J Radiat Res. 2008 Nov ;49(6):579-86. Epub 2008 Sep 29. PMID: 18827438

Article Published Date : Nov 01, 2008

Authors : Dusan Sokolovic, Boris Djindjic, Jelenka Nikolic, Gordana Bjelakovic, Dusica Pavlovic, Gordana Kocic, Dejan Krstic, Tatjana Cvetkovic, Voja Pavlovic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Melatonin prevents liver injury by microwave radiation in rats.

Pubmed Data : Bratisl Lek Listy. 2015 ;116(2):96-100. PMID: 25665474

Article Published Date : Jan 01, 2015

Authors : B Djordjevic, D Sokolovic, G Kocic, A Veljkovic, M Despotovic, J Basic, T Jevtovic-Stoimenov, D M Sokolovic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Additional Keywords : Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Mice exposed to intermediate-frequency magnetic fields exhibit alterations of memory function-related genes and an increase in inflammatory mediators and oxidative stress.

Pubmed Data : Int J Environ Res Public Health. 2015 Apr 22 ;12(4):4406-21. Epub 2015 Apr 22. PMID: 25913185

Article Published Date : Apr 22, 2015

Authors : Tin-Tin Win-Shwe, Shin Ohtani, Akira Ushiyama, Naoki Kunugita

Study Type : Animal Study
Additional Links

Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Microwave exposure adversely affects male fertility, whereas pulsed electromagnetic field therapy is a non-invasive, simple technique that can be used as a scavenger agent to combat oxidative stress.

Pubmed Data : Clinics (Sao Paulo). 2011 ;66(7):1237-45. PMID: 21876981

Article Published Date : Jan 01, 2011

Authors : Sanjay Kumar, Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Microwave radiation induces apoptosis in rat myocardial cells through redox and metabolic mechanisms.

Pubmed Data : Can J Physiol Pharmacol. 2016 Aug ;94(8):849-57. Epub 2016 Mar 6. PMID: 27203380

Article Published Date : Aug 01, 2016

Authors : Wenhe Zhu, Yan Cui, Xianmin Feng, Yan Li, Wei Zhang, Junjie Xu, Huiyan Wang, Shijie Lv

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cardiotoxic : CK(810) : AC(124) , Oxidant : CK(122) : AC(48)

Microwaves are cytotoxic and genotoxic to the rat thymus and its effects are attentuated by melatonin.

Pubmed Data : Gen Physiol Biophys. 2013 Mar ;32(1):79-90. PMID: 23531837

Article Published Date : Mar 01, 2013

Authors : Dusan Sokolovic, Branka Djordjevic, Gordana Kocic, Andrej Veljkovic, Milena Marinkovic, Jelena Basic, Tatjana Jevtovic-Stoimenov, Zoran Stanojkovic, Danka M Sokolovic, Voja Pavlovic, Boris Djindjic, Dejan Krstic

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(1399) : AC(461)
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , DNA Repair Up-regulation : CK(67) : AC(16)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Mobile phone electromagnetic radiation leads to decreases in sperm count, increases in the lipid peroxidation damage in sperm cells, reduction in seminiferous tubules and testicular weight, and DNA damage in rats.

Pubmed Data : Indian J Exp Biol. 2014 Sep ;52(9):890-7. PMID: 25241589

Article Published Date : Sep 01, 2014

Authors : Sanjay Kumar, Jay Prakash Nirala, J Behari, R Paulraj

Study Type : Animal Study
Additional Links
Diseases : Sperm Count: Low : CK(72) : AC(12) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48) , Sperm Quality: Low : CK(222) : AC(48), Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Mobile phone exposure induces oxidative stress in the brain, kidneys, and liver and also increases liver enzyme activity.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):279-84. Epub 2014 Apr 8. PMID: 24712749

Article Published Date : Jan 01, 2015

Authors : Merhan Mamdouh Ragy

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , GGT : CK(63) : AC(9) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hepatotoxic : CK(335) : AC(96) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Mobile phone radiation exposure has a significant effect on the proteome of rat testes.

Pubmed Data : Electrophoresis. 2014 Dec ;35(23):3331-8. Epub 2014 Oct 18. PMID: **25146694**

Article Published Date : Dec 01, 2014

Authors : Masood Sepehrimanesh, Nasrin Kazemipour, Mehdi Saeb, Saeed Nazifi

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(1359) : AC(316) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Mobile phone radiation exposure increases oxidative stress as evidenced by increased protein carbonyl and malondialdehyde, coupled with impaired cognition.

Pubmed Data : Indian J Biochem Biophys. 2013 Apr ;50(2):114-9. PMID: **23720885**

Article Published Date : Apr 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Basu Dev Banerjee, Mahesh Pandurang Abegaonkar, Kanu Megha, Rafat Sultana Ahmed, Ashok Kumar Tripathi, Pramod Kumari Mediratta

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476), Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Oxidant : CK(122) : AC(48)

Mobile phone radiation induces oxidative stress and apoptosis in the rat endometrium and is ameliorated by vitamin C and E.

Pubmed Data : Adv Ther. 2006 Nov-Dec;23(6):957-73. PMID: 17276964

Article Published Date : Nov 01, 2006

Authors : Baha Oral, Mehmet Guney, Fehmi Ozguner, Nermin Karahan, Tamer Mungan, Selcuk Comlekci, Gokhan Cesur

Study Type : Animal Study
Additional Links
Substances : Vitamin C : CK(3397) : AC(792) , Vitamin E : CK(2077) : AC(371)
Diseases : Infertility: Female : CK(281) : AC(51) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932), Antioxidant : CK(9) : AC(4) , Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Mobile phone radiation overwhelms the antioxidant systems of mung bean root cells.

Pubmed Data : Sci Total Environ. 2009 Oct 15 ;407(21):5543-7. Epub 2009 Aug 13. PMID: 19682728

Article Published Date : Oct 15, 2009

Authors : Ved Parkash Sharma, Harminder Pal Singh, Ravinder Kumar Kohli, Daizy Rani Batish

Study Type : Plant Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758) , Malondialdehyde Down-regulation : CK(1452) : AC(466)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Nano-selenium protects cognition in rats exposed to 1800 MHz radiation.

Pubmed Data : Wei Sheng Yan Jiu. 2014 Jan ;43(1):16-21. PMID: 24564105

Article Published Date : Jan 01, 2014

Authors : Fenju Qin, Hongxia Yuan, Jihua Nie, Yi Cao, Jian Tong

Study Type : Review

Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Nanosecond pulsed electric field induces the formation of both intra- and extracellular hydrogen peroxide.

Pubmed Data : Arch Biochem Biophys. 2012 Nov 1 ;527(1):55-64. Epub 2012 Aug 15. PMID: 22910297

Article Published Date : Nov 01, 2012

Authors : Olga N Pakhomova, Vera A Khorokhorina, Angela M Bowman, Raminta Rodaitė-Riševičienė, Gintautas Saulis, Shu Xiao, Andrei G Pakhomov

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Nitric oxide synthase-dependent nitric oxide production is an important factor that contributes to electromagnetic pulse-induced blood-retinal barrier dysfunction.

Pubmed Data : Brain Res. 2009 Apr 6 ;1264:104-10. Epub 2009 Feb 3. PMID: 19368824

Article Published Date : Apr 06, 2009

Authors : Lianjun Lu, Hui Xu, Xiaowu Wang, Guozhen Guo

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

One month of mobile phone radiation induces oxidative stress in the rat brain as demonstrated by elevated TBARS, reduced glutathione activity, and down-regulated antioxidant activity overall.

Pubmed Data : Bratisl Lek Listy. 2014 ;115(5):260-6. PMID: 25174055

Article Published Date : Jan 01, 2014

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Oxidant : CK(122) : AC(48)

Overproduction of reactive oxygen species as a result of mobile phone radiation negatively impacts the male rat reproductive system.

Pubmed Data : Electromagn Biol Med. 2012 Sep ;31(3):213-22. PMID: 22897402

Article Published Date : Sep 01, 2012

Authors : Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Sperm Quality: Low : CK(222) : AC(48)
Additional Keywords : Sperm Quality: Low : CK(222) : AC(48)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Oxidative stress and hydrogen peroxide work synergistically to stimulate apoptosis.

Pubmed Data : Acta Biol Hung. 2010 Jun ;61(2):158-67. PMID: 20519170

Article Published Date : Jun 01, 2010

Authors : Ayse Inhan Garip, Z Akan

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Problem Substances : Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

Power frequency magnetic fields triggers autophagy in a

reactive oxygen species-dependent manner.

Pubmed Data : Int J Biochem Cell Biol. 2014 Dec ;57:108-14. Epub 2014 Oct 19. PMID: 25450462

Article Published Date : Dec 01, 2014

Authors : Yanfeng Chen, Ling Hong, Ying Zeng, Yunyun Shen, Qunli Zeng

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Prenatal cell phone radiation exposure leads to elevated thymus and spleen malondialdehyde levels in 21-day-old male rats.

Pubmed Data : Biotech Histochem. 2015 ;90(7):535-43. Epub 2015 May 19. PMID: 25985826

Article Published Date : Jan 01, 2015

Authors : H Hancı, S Türedi, Z Topal, T Mercantepe, I Bozkurt, H Kaya, Ş Ersöz, B Ünal, E Odacı

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Protein carbonyl and malondialdehyde were upregulated in rats brains by extremely low frequency magnetic field exposure, indicative of oxidative stress.

Pubmed Data : Electromagn Biol Med. 2013 Sep ;32(3):363-72. Epub 2013 Jan 16. PMID: 23324065

Article Published Date : Sep 01, 2013

Authors : Mehmet Zulkuf Akdag, Suleyman Dasdag, Dilek Ulker Cakir, Beran Yokus, Goksel Kizil, Murat Kizil

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Radiofrequency and extremely low frequency electromagnetic fields increase oxidative stress in rat testis tissue and causes a decrease in antioxidant level with the effects being more distinctive in diabetic rats.

Pubmed Data : Bratisl Lek Listy. 2017 ;118(5):278-282. PMID: 28516790

Article Published Date : Jan 01, 2017

Authors : D Kuzay, C Ozer, B Sirav, A G Canseven, N Seyhan

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Radiofrequency electromagnetic fields promote oxidative stress which is implicated in various disease states, including cancer. The evidence on its biological effects are sufficient to invoke precautionary principle and revise existing limits.

Pubmed Data : Int J Hyg Environ Health. 2018 04 ;221(3):367-375. Epub 2018 Feb 2. PMID: 29402696

Article Published Date : Jan 01, 2018

Authors : Agostino Di Ciaula

Study Type : Review
Additional Links
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Radiofrequency electromagnetic waves emitted from cell phones may lead to oxidative stress in human semen.

Pubmed Data : Fertil Steril. 2009 Oct ;92(4):1318-25. Epub 2008 Sep 20. PMID: 18804757

Article Published Date : Oct 01, 2009

Authors : Ashok Agarwal, Nisarg R Desai, Kartikeya Makker, Alex Varghese, Rand Mouradi, Edmund Sabanegh, Rakesh Sharma

Study Type : In Vitro Study
Additional Links

Diseases : DNA damage : CK(1482) : AC(545) , Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194) , Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Oxidant : CK(122) : AC(48)

Rats born to mothers exposed to Wi-Fi and cell phone electromagnetic fields exhibit elevated oxidative stress in kidneys and testes and may cause precocious puberty.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):221-9. Epub 2013 Oct 8. PMID: **24101576**

Article Published Date : Dec 01, 2013

Authors : Alper Özorak, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Derviş Özçelik, Mehmet Okan Özkaya, Hasan Çetin, Mehmet Cemal Kahya, Seyit Ali Kose

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436), Puberty: Precocious : CK(2) : AC(2)
Additional Keywords : Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats exposed to 900, 1800, and 2450 MHz electromagnetic fields exhibit DNA damage in brain tissue.

Pubmed Data : Toxicol Int. 2013 Jan ;20(1):19-24. PMID: **23833433**

Article Published Date : Jan 01, 2013

Authors : Pravin Suryakantrao Deshmukh, Kanu Megha, Basu Dev Banerjee, Rafat Sultana Ahmed, Sudhir Chandna, Mahesh Pandurang Abegaonkar, Ashok Kumar Tripathi

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function

: CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

Rats exposed to mobile phone radiation in utero exhibit pathological changes in kidney tissue attributed to oxidative stress and decreased antioxidant activity.

Pubmed Data : Biotech Histochem. 2015 Feb ;90(2):93-101. Epub 2014 Aug 27. PMID: **25158858**

Article Published Date : Feb 01, 2015

Authors : E Odacı, D Ünal, T Mercantepe, Z Topal, H Hancı, S Türedi, H S Erol, S Mungan, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats exposed to mobile phone radiation in utero have elevated biomarkers of oxidative stress and histopathological changes in heart tissue.

Pubmed Data : Electromagn Biol Med. 2015 ;34(4):390-7. Epub 2014 Aug 28. PMID: **25166431**

Article Published Date : Jan 01, 2015

Authors : Sibel Türedi, Hatice Hancı, Zehra Topal, Deniz Ünal, Tolga Mercantepe, İlyas Bozkurt, Haydar Kaya, Ersan Odacı

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(10121) : AC(1456) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic

Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

Rats exposed to mobile phone radiation present with higher oxidative stress, reduced antioxidant activity, and extensive neurodegeneration in the brain.

Pubmed Data : Neurol Res. 2014 Dec ;36(12):1072-9. Epub 2014 May 26. PMID: **24861496**

Article Published Date : Dec 01, 2014

Authors : Nidhi Saikhedkar, Maheep Bhatnagar, Ayushi Jain, Pooja Sukhwal, Chhavi Sharma, Neha Jaiswal

Study Type : Animal Study
Additional Links
Diseases : Anxiety Disorders : CK(1423) : AC(215) , Brain: Oxidative Stress : CK(79) : AC(46) , Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Lipid Peroxidation : CK(1178) : AC(476) , Neurodegenerative Diseases : CK(6185) : AC(1785) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

Selenium and L-carnitine protect against the oxidative effects of 2.45 GHz wireless devices in the rat heart.

Pubmed Data : Biol Trace Elem Res. 2011 Dec ;143(3):1640-50. Epub 2011 Mar 1. PMID: **21360060**

Article Published Date : Dec 01, 2011

Authors : Yasin Türker, Mustafa Nazıroğlu, Nurhan Gümral, Omer Celik, Mustafa Saygın, Selçuk Cömlekçi, Manuel Flores-Arce

Study Type : Animal Study
Additional Links
Substances : Carnitine : CK(441) : AC(70) , Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4) , Cardioprotective : CK(3412) : AC(1032) , Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Selenium prevents oxidative stress and apoptosis associated with mobile phone exposure.

Pubmed Data : Biol Trace Elem Res. 2014 Aug ;160(2):285-93. Epub 2014 Jun 27. PMID: 24965080

Article Published Date : Aug 01, 2014

Authors : Mehmet Cemal Kahya, Mustafa Nazıroğlu, Bilal Çiğ

Study Type : Human In Vitro
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Anti-Apoptotic : CK(1620) : AC(932), Antioxidant : CK(9) : AC(4), Cytoprotective : CK(190) : AC(94)
Additional Keywords : Cytoprotective : CK(190) : AC(94), Cytoprotective : CK(190) : AC(94), Cytoprotective : CK(190) : AC(94), Cytoprotective : CK(190) : AC(94)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Cytotoxic : CK(89) : AC(53), Oxidant : CK(122) : AC(48)

Short term exposure to electromagnetic fields induces oxidative stress in the teeth of growing rats.

Pubmed Data : Biol Trace Elem Res. 2015 Feb ;163(1-2):193-201. Epub 2014 Nov 14. PMID: 25395122\

Article Published Date : Feb 01, 2015

Authors : Zülfikar Zahit Çiftçi, Zühal Kırzıoğlu, Mustafa Nazıroğlu, Özlem Özmen

Study Type : Animal Study
Additional Links
Additional Keywords :
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Static magnetic fields alter glucose homeostasis via alteration in cellular redox.

Pubmed Data : Int J Radiat Biol. 2014 Dec ;90(12):1240-5. Epub 2014 Aug 4. PMID: 24899393

Article Published Date : Dec 01, 2014

Authors : Aïda Lahbib, Soumaya Ghodbane, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Human In Vitro
Additional Links
Diseases : Blood Sugar Problems : CK(11275) : AC(2123)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Static magnetic fields alter the redox balance of human neutrophils in vitro.

Pubmed Data : Electromagn Biol Med. 2013 Dec ;32(4):560-8. Epub 2013 Apr 30. PMID: 23631724

Article Published Date : Dec 01, 2013

Authors : Barbara Poniedziałek, Piotr Rzymski, Jacek Karczewski, Feliks Jaroszyk, Krzysztof Wiktorowicz

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Static magnetic fields cause the accumulation of hydrogen peroxide and nitric oxide in cultured tobacco shells.

Pubmed Data : Plant Sci. 2018 Dec ;277:139-144. Epub 2018 Aug 10. PMID: 30466579

Article Published Date : Dec 01, 2018

Authors : Farzaneh Mohammadi, Faezeh Ghanati, Mohsen Sharifi, Najmeh Ahmadian Chashmi

Study Type : In Vitro Study, Plant Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Static magnetic fields increase malondialdehyde and protein carbonyl groups in Saccharomyces cerevisiae.

Pubmed Data : PLoS One. 2019 ;14(1):e0209843. Epub 2019 Jan 4. PMID: 30608963

Article Published Date : Jan 01, 2019

Authors : Ameni Kthiri, Slah Hidouri, Tahri Wiem, Roua Jeridi, David Sheehan, Ahmed Landouls

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Static magnetic fields induce oxidative stress depending on the direction of the fields.

Pubmed Data : Biomed Res Int. 2017 ;2017:5675086. Epub 2017 Apr 12. PMID: 28497056

Article Published Date : Jan 01, 2017

Authors : Jonne Naarala, Kavindra Kumar Kesari, Ian McClure, Cristina Chavarriaga, Jukka Juutilainen, Carlos F Martino

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Static magnetic fields may interact with endothelial cells via a free radical mechanism.

Pubmed Data : Bioelectromagnetics. 2011 Sep ;32(6):506-8. Epub 2011 Mar 23. PMID: 21433034##

Article Published Date : Sep 01, 2011

Authors : Carlos F Martino

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Sub-acute exposure to static magnetic fields alters the antioxidant response by decreasing the level of total selenium in kidney, muscle, and brain of exposed rats.

Pubmed Data : Environ Toxicol Pharmacol. 2011 Jan ;31(1):100-6. Epub 2010 Sep 29. PMID: 21787674

Article Published Date : Jan 01, 2011

Authors : Soumaya Ghodbane, Salem Amara, Catherine Garrel, Josiane Arnaud, Véronique Ducros, Alain Favier, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Sub-acute exposure to static magnetic fields induce oxidative stress in rats, which may be prevented by a pretreatment with selenium.

Pubmed Data : Toxicol Ind Health. 2011 Nov ;27(10):949-55. Epub 2011 Apr 19. PMID: 21505001

Article Published Date : Nov 01, 2011

Authors : Soumaya Ghodbane, Salem Amara, Josiane Arnaud, Catherine Garrel, Henri Faure, Alain Favier, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(999) : AC(188)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidants : CK(14410) : AC(5758)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

The adverse effects of electromagnetic fields may be mediated by activation of voltage-gated calcium channels.

Pubmed Data : J Cell Mol Med. 2013 Aug ;17(8):958-65. Epub 2013 Jun 26. PMID: 23802593

Article Published Date : Aug 01, 2013

Authors : Martin L Pall

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48) , Voltage-Gated Calcium Channel Activation : CK(1) : AC(1)

The effects of radiation from commercial GSM 900 MHz cell phone on developing quail embryos signify a possibility for non-thermal impact of microwave on

embryogenesis.

Pubmed Data : Electromagn Biol Med. 2012 Mar ;31(1):75-86. Epub 2012 Jan 23. PMID: 22268787

Article Published Date : Mar 01, 2012

Authors : Olexandr Tsybulin, Evgeniy Sidorik, Sergiy Kyrylenko, Diane Henshel, Igor Yakymenko

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

The low frequency electromagnetic fields generated by car electronics, physiotherapy equipment and LCD monitors may be a cause of oxidative stress in the human body

Pubmed Data : Adv Clin Exp Med. 2015 Jan-Feb;24(1):31-5. PMID: 25923084

Article Published Date : Jan 01, 2015

Authors : Małgorzata Lewicka, Gabriela A Henrykowska, Krzysztof Pacholski, Artur Szczęsny, Maria Dziedziczak-Buczyńska, Andrzej Buczyński

Study Type : Human In Vitro
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48)

The results of this study indicate that both intermittent and continuous magnetic field exposures affect various tissues in a distinct manner because of having different tissue antioxidant status and responses.

Pubmed Data : Neurochem Res. 2009 Feb ;34(2):238-43. Epub 2008 Jun 18. PMID: 18563561

Article Published Date : Feb 01, 2009

Authors : Sule Coşkun, Barbaros Balabanli, Ayşe Canseven, Nesrin Seyhan

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476)
Pharmacological Actions : Malondialdehyde Down-regulation : CK(1452) : AC(466)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

The studies included in this review indicate that oxidative stress from exposure to Wi-Fi and mobile phone-induced EMR is a significant mechanism affecting female and male reproductive systems.

Pubmed Data : J Membr Biol. 2013 Dec ;246(12):869-75. Epub 2013 Oct 9. PMID: **24105626**

Article Published Date : Dec 01, 2013

Authors : Mustafa Nazıroğlu, Murat Yüksel, Seyit Ali Köse, Mehmet Okan Özkaya

Study Type : Review
Additional Links
Diseases : Infertility: Female : CK(281) : AC(51) , Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

These findings suggest that EMF exposure may be harmful in young adults by impairing the antioxidant defenses directed at preventing iron-induced oxidative stress.

Pubmed Data : Neuroscience. 2011 Jul 14 ;186:39-47. Epub 2011 Apr 12. PMID: **21497179**

Article Published Date : Jul 14, 2011

Authors : K Maaroufi, E Save, B Poucet, M Sakly, H Abdelmelek, L Had-Aissouni

Study Type : Animal Study
Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

This article discusses plausible mechanisms behind the interaction between electromagnetic fields and oxidative stress.

Pubmed Data : Environ Res. 2018 05 ;163:165-170. Epub 2018 Feb 22. PMID: **29438901**

Article Published Date : Jan 01, 2018

Authors : Frank Barnes, Ben Greenebaum

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

This review describes the hormetic effects attributed to electromagnetic fields.

Pubmed Data : Sci Total Environ. 2012 Jun 1 ;426:454-8. Epub 2012 Apr 24. PMID: 22534362

Article Published Date : Jun 01, 2012

Authors : Michael Repacholi

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

This review outlines some of the known biological effects of static magnetic fields.

Pubmed Data : Biomed Res Int. 2013 ;2013:602987. Epub 2013 Aug 6. PMID: 24027759

Article Published Date : Jan 01, 2013

Authors : Soumaya Ghodbane, Aida Lahbib, Mohsen Sakly, Hafedh Abdelmelek

Study Type : Review
Additional Links
Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Oxidant : CK(122) : AC(48)

This review summarizes the research on electromagnetic fields, oxidative stress, and its link to neurodegeneration.

Pubmed Data : Int J Cell Biol. 2012 ;2012:683897. Epub 2012 Sep 9. PMID: 22991514

Article Published Date : Jan 01, 2012

Authors : Claudia Consales, Caterina Merla, Carmela Marino, Barbara Benassi

Study Type : Review
Additional Links
Diseases : Neurodegenerative Diseases : CK(6185) : AC(1785)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Neurotoxic : CK(1458) : AC(323) , Oxidant : CK(122) : AC(48)

This study demonstrated the ability of extremely-low electromagnetic fields to impact fetal development in a tissue-specific way.

Pubmed Data : PLoS One. 2015 ;10(11):e0142259. Epub 2015 Nov 11. PMID: 26559811

Article Published Date : Jan 01, 2015

Authors : Ion Udroiu, Antonio Antoccia, Caterina Tanzarella, Livio Giuliani, Francesca Pacchierotti, Eugenia Cordelli, Patrizia Eleuteri, Paola Villani, Antonella Sgura

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(204) : AC(39) , DNA damage : CK(1482) : AC(545)
Additional Keywords : Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48)

This study demonstrates that electromagnetic fields can have signficant oxidative effects in animals.

Pubmed Data : Radiats Biol Radioecol. 2010 Jan-Feb;50(1):22-7. PMID: 20297677

Article Published Date : Jan 01, 2010

Authors : Iu G Grigor'ev, V F Mikhaĭlov, A A Ivanov, V N Mal'tsev, A M Ulanova, N M Stavrakova, I A Nikolaeva, O A Grigor'ev

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

This study is a diagnostic test that seeks to test the radical pair hypothesis.

Pubmed Data : J Am Chem Soc. 2004 Jul 7 ;126(26):8102-3. PMID: 15225036

Article Published Date : Jul 07, 2004

Authors : Kevin B Henbest, Philipp Kukura, Christopher T Rodgers, P J Hore, Christiane R Timmel

Study Type : Human Study
Additional Links

Diseases : Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1), Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48)

Ultra-high frequency electromagnetic radiation influences mitochondrial function through superoxide generation, formation of iron-nitrosyl complexes, and induction of cellular hypoxia as a result of electron transport chain abnormalities.

Pubmed Data : Int J Radiat Biol. 2014 May ;90(5):357-62. PMID: 24597749

Article Published Date : May 01, 2014

Authors : Anatoly Burlaka, Marina Selyuk, Marat Gafurov, Sergei Lukin, Viktoria Potaskalova, Evgeny Sidorik

Study Type : Animal Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(329) : AC(136)
Additional Keywords : Mitochondrial Dysfunction : CK(329) : AC(136), Mitochondria : CK(3) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13), Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Hypoxia : CK(3) : AC(2) , Oxidant : CK(122) : AC(48)

Phosphorylated synapsin I (Ser-553) Downregulation (AC 2) (CK 4)

Microwave exposure reduces phosphorylated synapsin I leading to impaired GABA release and cognitive dysfunction.

Pubmed Data : PLoS One. 2014 ;9(4):e95503. Epub 2014 Apr 17. PMID: 24743689

Article Published Date : Jan 01, 2014

Authors : Simo Qiao, Ruiyun Peng, Haitao Yan, Yabing Gao, Changzhen Wang, Shuiming Wang, Yong Zou, Xinping Xu, Li Zhao, Ji Dong, Zhentao Su, Xinxin Feng, Lifeng Wang, Xiangjun Hu

Study Type : Animal Study
Additional Links
Diseases : Memory Disorders : CK(666) : AC(218)
Additional Keywords : Memory Disorders : CK(666) : AC(218)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Neurotransmitter Interference : CK(14) : AC(3) , Phosphorylated synapsin I (Ser-553) Downregulation : CK(4) : AC(2)

Proliferative (AC 5) (CK 21)

2.45 GHz electromagnetic radiation exposure stimulates proliferation in human leukemia cancer cells via oxidative stress and calcium influx.

Pubmed Data : Int J Radiat Biol. 2012 Jun ;88(6):449-56. Epub 2012 May 2. PMID: 22489926

Article Published Date : Jun 01, 2012

Authors : Mustafa Nazıroğlu, Bilal Ciğ, Salih Doğan, Abdulhadi Cihangir Uğuz, Selin Dilek, Dahdouh Faouzi

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48) , Proliferative : CK(17) : AC(6)

Electromagnetic fields induce reactive oxygen species generation and differentiation of human bone marrow derived mesenchymal stem cells through epidermal

growth factor receptor in vitro.

Pubmed Data : Neurochem Int. 2013 Mar ;62(4):418-24. Epub 2013 Feb 11. PMID: 23411410

Article Published Date : Mar 01, 2013

Authors : Jeong-Eun Park, Young-Kwon Seo, Hee-Hoon Yoon, Chan-Wha Kim, Jung-Keug Park, Songhee Jeon

Study Type : Human In Vitro
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Oxidant : CK(122) : AC(48) , Proliferative : CK(17) : AC(6)

Electromagnetic irradiation from mobile phones induces the activation of the ERK cascade and thereby induces transcription and other cellular processes.

Pubmed Data : Biochem J. 2007 Aug 1 ;405(3):559-68. PMID: 17456048

Article Published Date : Aug 01, 2007

Authors : Joseph Friedman, Sarah Kraus, Yirmi Hauptman, Yoni Schiff, Rony Seger

Study Type : In Vitro Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Proliferative : CK(17) : AC(6)

Extremely low frequency electromagnetic fields promote the differentiation of acute promyelocytic leukemia cells by all-trans retinoic acid.

Pubmed Data : Cell Physiol Biochem. 2018 ;46(1):389-400. Epub 2018 Mar 23. PMID: 29590658

Article Published Date : Jan 01, 2018

Authors : Alfredo Errico Provenzano, Stefano Amatori, Maria Gemma Nasoni, Giuseppe Persico, Sergio Russo, Anna Rita Mastrogiacomo, Alessandro Gambarara, Mirco Fanelli

Study Type : Human In Vitro
Additional Links
Diseases : Leukemias : CK(479) : AC(215)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Proliferative : CK(17) : AC(6)

N-acetyl cysteine blocks the proliferative effects of power frequency magnetic fields in vitro.

Pubmed Data : Int J Mol Sci. 2016 Apr 6 ;17(4):510. Epub 2016 Apr 6. PMID: 27058530

Article Published Date : Apr 06, 2016

Authors : María Antonia Martínez, Alejandro Úbeda, Jorge Moreno, María Ángeles Trillo

Study Type : Human In Vitro
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(318) : AC(76)
Pharmacological Actions : Antiproliferative : CK(4773) : AC(3450)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Proliferative : CK(17) : AC(6)

Prostaglandin E2 up-regulation (AC 1) (CK 5)

1800 MHz radiofrequency fields stimulates pro-inflammatory responses in microglia and astrocytes in vitro.

Pubmed Data : PLoS One. 2014 ;9(9):e108318. Epub 2014 Oct 2. PMID: 25275372

Article Published Date : Jan 01, 2014

Authors : Yonghui Lu, Mindi He, Yang Zhang, Shangcheng Xu, Lei Zhang, Yue He, Chunhai Chen, Chuan Liu, Huifeng Pi, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation : CK(6531) : AC(1986)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cycloogenase-2 enzyme upregulation : CK(1) : AC(1) , Inflammatory : CK(312) : AC(92), Interleukin-1 up-regulation : CK(2) : AC(1) , Interleukin-6 up-regulation : CK(18) : AC(5), Prostaglandin E2 up-regulation : CK(2) : AC(1) , Tumor necrosis factorα

(TNFα) up-regulation : CK(55) : AC(7)

Radiotoxic (AC 5) (CK 25)

Convective air warming systems could be a source of biologically-active and harmful extremely low frequency electromagnetic field.

Pubmed Data : Iran J Public Health. 2014 Dec ;43(12):1635-9. PMID: 26171355

Article Published Date : Dec 01, 2014

Authors : Kwang Rae Cho, Myoung-Hun Kim, Myoung Jin Ko, Jae Wook Jung, Ki Hwa Lee, Yei-Heum Park, Yong Han Kim, Ki Hoon Kim, Jin Soo Kim

Study Type : Environmental
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Radiotoxic : CK(22) : AC(4)

Electromagnetic field exposure may disrupt thyroid function, which is attentuated by zinc supplementation.

Pubmed Data : Am J Orthod. 1970 May ;57(5):538. PMID: PMC4908750

Article Published Date : May 01, 1970

Study Type : Human Study
Additional Links
Substances : Zinc : CK(1067) : AC(165)
Pharmacological Actions : Radioprotective : CK(1247) : AC(406)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(73) : AC(21) , Radiotoxic : CK(22) : AC(4)

Electromagnetic fields cause disruption of the cell's electrochemical balance and function through irregular gating of electrosensitive channels on the plasma membrane.

Pubmed Data : Biochem Biophys Res Commun. 2002 Oct 18 ;298(1):95-102. PMID: 12379225

Article Published Date : Oct 18, 2002

Authors : Dimitris J Panagopoulos, Andreas Karabarbounis, Lukas H Margaritis

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Radiotoxic : CK(22) : AC(4)

Exposure to electromagnetic fields from laptop use of "laptop" computers likely carry adverse health risks to the adult's body and to the fetus.

Pubmed Data : Arch Environ Occup Health. 2012 Jan ;67(1):31-6. PMID: 22315933

Article Published Date : Jan 01, 2012

Authors : C V Bellieni, I Pinto, A Bogi, N Zoppetti, D Andreuccetti, G Buonocore

Study Type : Human Study
Additional Links
Diseases : Prenatal Radiation Exposure : CK(16) : AC(5)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Laptop Computer Use : CK(20) : AC(2)
Problem Substances : Laptop computers : CK(20) : AC(2)
Adverse Pharmacological Actions : Radiotoxic : CK(22) : AC(4)

Microwave radiation has a significant impact on the reproductive system of male rats.

Pubmed Data : Appl Biochem Biotechnol. 2010 Sep ;162(2):416-28. Epub 2009 Sep 19. PMID: 19768389

Article Published Date : Sep 01, 2010

Authors : Kavindra Kumar Kesari, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194)
Additional Keywords : Infertility: Male : CK(802) : AC(194)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Radiotoxic : CK(22) : AC(4)

Renotoxic (AC 4) (CK 8)

Cell phone exposure 8 hours a day for 20 days produces kidney tissue damage in rats.

Pubmed Data : Urol J. 2013 ;10(2):886-91. PMID: 23801472

Article Published Date : Jan 01, 2013

Authors : Orhan Koca, Ali Murat Gökçe, Metin Ishak Öztürk, Feriha Ercan, Necati Yurdakul, Muhammet Ihsan Karaman

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64)
Additional Keywords : Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Inflammatory : CK(312) : AC(92) , Renotoxic : CK(26) : AC(9)

Rats born to mothers exposed to Wi-Fi and cell phone electromagnetic fields exhibit elevated oxidative stress in kidneys and testes and may cause precocious puberty.

Pubmed Data : Biol Trace Elem Res. 2013 Dec ;156(1-3):221-9. Epub 2013 Oct 8. PMID: 24101576

Article Published Date : Dec 01, 2013

Authors : Alper Özorak, Mustafa Nazıroğlu, Ömer Çelik, Murat Yüksel, Derviş Özçelik, Mehmet Okan Özkaya, Hasan Çetin, Mehmet Cemal Kahya, Seyit Ali Kose

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436), Puberty: Precocious : CK(2) : AC(2)
Additional Keywords : Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2) , Puberty: Precocious : CK(2) : AC(2), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Electromagnetic Radiation: 2.4 GHz : CK(2) : AC(1), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(39) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Rats born to mothers who were exposed to 900 MHz electromagnetic fields during pregnancy exhibited kidney defects and apoptosis in kidney tissue.

Pubmed Data : Ren Fail. 2015 Mar ;37(2):305-9. Epub 2014 Nov 19. PMID: **25691088**

Article Published Date : Mar 01, 2015

Authors : Recep Bedir, Levent Tumkaya, İbrahim Şehitoğlu, Yıldıray Kalkan, Adnan Yilmaz, Osman Zikrullah Şahin

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64)
Additional Keywords : Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64) , Kidney Damage : CK(193) : AC(64), Pregnancy : CK(10) : AC(1) , Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Renotoxic : CK(26) : AC(9)

Rats exposed to mobile phone radiation in utero exhibit pathological changes in kidney tissue attributed to oxidative stress and decreased antioxidant activity.

Pubmed Data : Biotech Histochem. 2015 Feb ;90(2):93-101. Epub 2014 Aug 27. PMID: **25158858**

Article Published Date : Feb 01, 2015

Authors : E Odacı, D Ünal, T Mercantepe, Z Topal, H Hancı, S Türedi, H S Erol, S Mungan, H Kaya, S Çolakoğlu

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage : CK(193) : AC(64) , Oxidative Stress : CK(6519) : AC(2436)
Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Pregnancy : CK(10) : AC(1), Pregnancy And Fetal Growth : CK(10) : AC(1)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Renotoxic : CK(26) : AC(9)

Serotonin Down-Regulation (AC 1) (CK 2)

Pulsed electromagnetic radiation alters levels of serotonin, dopamine, and norepinephrine in various areas of the rat brain.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2013 Jul ;17(13):1782-8. PMID: 23852905

Article Published Date : Jul 01, 2013

Authors : H S Aboul Ezz, Y A Khadrawy, N A Ahmed, N M Radwan, M M El Bakry

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(2113) : AC(426) , Learning disorders : CK(194) : AC(53)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Serotonin Down-Regulation : CK(2) : AC(1)

Superoxide Dismutase Downregulation (AC 7) (CK 22)

50 GHz microwave radiation induces oxidative stress and DNA damage in the rat brain.

Pubmed Data : Appl Biochem Biotechnol. 2009 Jul ;158(1):126-39. Epub 2008 Dec 17. PMID: 19089649

Article Published Date : Jul 01, 2009

Authors : Kavindra Kumar Kesari, J Behari

Study Type : Animal Study

Additional Links
Diseases : Brain: Oxidative Stress : CK(79) : AC(46) , DNA damage : CK(1482) : AC(545)
Anti Therapeutic Actions : 5G Millimeter Wave Radiation : CK(8) : AC(7) , Electromagnetic Fields : CK(4873) : AC(1001), Electromagnetic Radiation : CK(80) : AC(42) , Electromagnetic Radiation: 60 GHZ : CK(1) : AC(1), Electromagnetic Radiation: 6-24 GHz (5G) : CK(1) : AC(1)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Glutathione Down-Regulation : CK(5) : AC(3), Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

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50 days of exposure to 3 MT electromagnetic field induces oxidative stress and lipid peroxidation in rats, which is attentuated by vitamin E.

Pubmed Data : Basic Clin Neurosci. 2016 Oct ;7(4):315-322. PMID: 27872692

Article Published Date : Oct 01, 2016

Authors : Ahmad Ali Ghanbari, Kobra Shabani, Daryoush Mohammad Nejad

Study Type : Animal Study
Additional Links
Substances : Vitamin E : CK(2077) : AC(371)
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Antioxidant : CK(9) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Acute 60 Hz electromagnetic field exposure decreases superoxide dismutase and reduced glutathione activity in rats.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1088-94. Epub 2010 Aug 11. PMID: 20701462

Article Published Date : Dec 01, 2010

Authors : Jesús Martínez-Sámano, Patricia V Torres-Durán, Marco A Juárez-Oropeza, David Elías-Viñas, Leticia Verdugo-Díaz

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Exposure to electromagnetic fields far below current exposure limits results in increased biomarkers oxidative

stress in rats.

Pubmed Data : Electromagn Biol Med. 2006 ;25(3):177-88. PMID: 16954120

Article Published Date : Jan 01, 2006

Authors : Ali Ihsan Yurekli, Mehmed Ozkan, Tunaya Kalkan, Hale Saybasili, Handan Tuncel, Pinar Atukeren, Koray Gumustas, Selim Seker

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(6519) : AC(2436) , Radiation Induced Illness : CK(1048) : AC(265)
Additional Keywords : Radiation Induced Illness : CK(1048) : AC(265)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Oxidant : CK(122) : AC(48) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Mobile phone radiation induces oxidative stress in rat spermatozoa.

Pubmed Data : Appl Biochem Biotechnol. 2011 Jun ;164(4):546-59. Epub 2011 Jan 15. PMID: 21240569

Article Published Date : Jun 01, 2011

Authors : Kavindra Kumar Kesari, Sanjay Kumar, Jitendra Behari

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(802) : AC(194) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1), Superoxide Dismutase Downregulation : CK(12) : AC(2)

Plasma level of lipid peroxides was significantly increased after 1, 2 and 4 h of exposure to radiofrequency fields of the cellular phone in standby position in volunteers.

Pubmed Data : J Pharm Biomed Anal. 2001 Nov ;26(4):605-8. PMID: 11516912

Article Published Date : Nov 01, 2001

Authors : Y M Moustafa, R M Moustafa, A Belacy, S H Abou-El-Ela, F M Ali

Study Type : Human Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(5) : AC(3) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

These results suggest that direct chronic exposure to mobile phone caused severe biochemical and histopathological changes in the rat brain.

Pubmed Data : J Chem Neuroanat. 2016 12 ;78:10-19. Epub 2016 Jul 26. PMID: 27474378

Article Published Date : Jan 12, 2016

Authors : Shaymaa Hussein, Abdel-Aleem El-Saba, Mona K Galal

Study Type : Animal Study
Additional Links
Diseases : Lipid Peroxidation : CK(1178) : AC(476) , Oxidative Stress : CK(6519) : AC(2436)
Pharmacological Actions : Cyclooxygenase 2 Inhibitors : CK(1114) : AC(645) , Malondialdehyde Down-regulation : CK(1452) : AC(466), Superoxide Dismutase Up-regulation : CK(1039) : AC(415)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Glutathione Down-Regulation : CK(5) : AC(3), Inflammatory : CK(312) : AC(92) , Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1) , Neurotoxic : CK(1458) : AC(323) , Superoxide Dismutase Downregulation : CK(12) : AC(2)

Thyroid Suppressive (AC 1) (CK 2)

Pulse modulated 900 MHz radiation inhibits thyroid hormone secretion and stimulates thyroid cell apoptosis.

Pubmed Data : Int J Radiat Biol. 2010 Dec ;86(12):1106-16. Epub 2010 Sep 1. PMID: 20807179

Article Published Date : Dec 01, 2010

Authors : Meriç Arda Eşmekaya, Nesrin Seyhan, Suna Ömeroğlu

Study Type : Animal Study
Additional Links
Diseases : Hypothyroidism : CK(584) : AC(90)
Additional Keywords : Hypothyroidism : CK(584) : AC(90)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Mobile Phone Radiation : CK(64) : AC(13)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7) , Endocrine Disruptor: Thyroid : CK(73) : AC(21), Thyroid Suppressive : CK(18) : AC(5)

Tumor necrosis factorα (TNFα) up-regulation (AC 1) (CK 5)

1800 MHz radiofrequency fields stimulates pro-inflammatory responses in microglia and astrocytes in vitro.

Pubmed Data : PLoS One. 2014 ;9(9):e108318. Epub 2014 Oct 2. PMID: 25275372

Article Published Date : Jan 01, 2014

Authors : Yonghui Lu, Mindi He, Yang Zhang, Shangcheng Xu, Lei Zhang, Yue He, Chunhai Chen, Chuan Liu, Huifeng Pi, Zhengping Yu, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Brain: Microglial Activation : CK(82) : AC(53) , Inflammation : CK(6531) : AC(1986)
Additional Keywords : Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4) , Brain Function : CK(7) : AC(4), Brain Function : CK(7) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Electromagnetic Radiation: 1.8 GHz : CK(1) : AC(1) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Cycloogenase-2 enzyme upregulation : CK(1) : AC(1) , Inflammatory : CK(312) : AC(92), Interleukin-1 up-regulation : CK(2) : AC(1) , Interleukin-6 up-regulation : CK(18) : AC(5), Prostaglandin E2 up-regulation : CK(2) : AC(1) , Tumor necrosis factorα (TNFα) up-regulation : CK(55) : AC(7)

Tumorigenic (AC 7) (CK 46)

A shift towards left sided tumor location for all adult gliomas was noted in this study following the introduction of mobile phones.

Pubmed Data : Asian Pac J Cancer Prev. 2012 ;13(11):5857-63. PMID: 23317269

Article Published Date : Jan 01, 2012

Authors : Micha Barchana, Menahem Margaliot, Irena Liphshitz

Study Type : Human Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Glioma : CK(333) : AC(169)
Additional Keywords : Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169), Glioma : CK(333) : AC(169) , Glioma : CK(333) : AC(169)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

Exposure to electromagnetic fields below the exposure limits for humans results in significantly more tumor formation in the lungs and livers of exposed animals compared to controls.

Pubmed Data : Biochem Biophys Res Commun. 2015 Apr 17 ;459(4):585-90. Epub 2015 Mar 6. PMID: **25749340**

Article Published Date : Apr 17, 2015

Authors : Alexander Lerchl, Melanie Klose, Karen Grote, Adalbert F X Wilhelm, Oliver Spathmann, Thomas Fiedler, Joachim Streckert, Volkert Hansen, Markus Clemens

Study Type : Animal Study
Additional Links
Diseases : Brain Cancer : CK(842) : AC(368) , Cancers: All : CK(22165) : AC(7896)
Additional Keywords : Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896) , Cancers: All : CK(22165) : AC(7896)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Tumorigenic : CK(16) : AC(11)

Occupational ELF exposure may play a role in the later stages of brain tumorigenesis.

Pubmed Data : Cancer Epidemiol Biomarkers Prev. 2014 Sep ;23(9):1863-72. Epub 2014 Jun 16. PMID: **24935666**

Article Published Date : Sep 01, 2014

Authors : Michelle C Turner, Geza Benke, Joseph D Bowman, Jordi Figuerola, Sarah Fleming, Martine Hours, Laurel Kincl, Daniel Krewski, Dave McLean, Marie-Elise Parent, Lesley Richardson, Siegal Sadetzki, Klaus Schlaefer, Brigitte Schlehofer, Joachim Schüz, Jack Siemiatycki, Martie van Tongeren, Elisabeth Cardis

Study Type : Human Study

Additional Links
Diseases : Brain Cancer : CK(842) : AC(368)
Additional Keywords : Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

This case series describes four women who developed breast cancer after carrying their phone against their breast up to 10 hours a day, for several years. All tumors developed underneath the position of the phone and had uncanny similarities.

Pubmed Data : Case Rep Med. 2013 ;2013:354682. Epub 2013 Sep 18. PMID: **24151509**

Article Published Date : Jan 01, 2013

Authors : John G West, Nimmi S Kapoor, Shu-Yuan Liao, June W Chen, Lisa Bailey, Robert A Nagourney

Study Type : Human: Case Report
Additional Links
Diseases : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738)
Additional Keywords : Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738) , Breast Cancer : CK(5066) : AC(1738), Breast Cancer : CK(5066) : AC(1738)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

This review synthesizes the evidence of the carcinogenic effects of magnetic fields according to animal and cellular studies.

Pubmed Data : Environ Health Perspect. 1995 Mar ;103 Suppl 2:63-7. PMID: **7614950**

Article Published Date : Mar 01, 1995

Authors : B Holmberg

Study Type : Review
Additional Links
Diseases : Cancers : CK(7) : AC(3)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)

Adverse Pharmacological Actions : Melatonin Interference : CK(2) : AC(2) , Tumorigenic : CK(16) : AC(11)

This study confirmed previous results demonstrating an association between mobile and cordless phone use and acoustic neuroma.

Pubmed Data : Int J Oncol. 2013 Oct ;43(4):1036-44. Epub 2013 Jul 22. PMID: 23877578

Article Published Date : Oct 01, 2013

Authors : Lennart Hardell, Michael Carlberg, Fredrik Söderqvist, Kjell Hansson Mild

Study Type : Human Study
Additional Links
Diseases : Acoustic Neuroma : CK(50) : AC(4)
Additional Keywords : Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4) , Acoustic Neuroma : CK(50) : AC(4), Acoustic Neuroma : CK(50) : AC(4)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

Vestibular schwannomas coincide with the more frequently used ear of mobile phones and tumor volume is strongly correlated with the amount of mobile phone use.

Pubmed Data : Tumour Biol. 2014 Jan ;35(1):581-7. Epub 2013 Aug 27. PMID: 23975478

Article Published Date : Jan 01, 2014

Authors : In Seok Moon, Bo Gyung Kim, Jinna Kim, Jong Dae Lee, Won-Sang Lee

Study Type : Human Study
Additional Links
Diseases : Schwannoma: Vestibular : CK(2) : AC(1)
Additional Keywords : Schwannoma: Vestibular : CK(2) : AC(1) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055) , Cellular Phones and Cancers : CK(2487) : AC(1055), Cellular Phones and Cancers : CK(2487) : AC(1055)
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Microwave Radiation : CK(8) : AC(4) , Mobile Phone Radiation : CK(64) : AC(13)
Problem Substances : Cell Phone Exposure : CK(19) : AC(4)
Adverse Pharmacological Actions : Carcinogenic (suspected) : CK(21) : AC(3) , Tumorigenic : CK(16) : AC(11)

Voltage-Gated Calcium Channel Activation (AC 3) (CK 4)

Electromagnetic fields disorder the electrochemical balance of the plasma membrane and consequently the whole cell function.

Pubmed Data : Biochem Biophys Res Commun. 2000 Jun 16 ;272(3):634-40. PMID: 10860806

Article Published Date : Jun 16, 2000

Authors : D J Panagopoulos, N Messini, A Karabarbounis, A L Philippetis, L H Margaritis

Study Type : Review
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Cytotoxic : CK(89) : AC(53) , Voltage-Gated Calcium Channel Activation : CK(1) : AC(1)

Radiofrequency electromagnetic fields alter calcium hoemostasis in the rat hippocampus.

Pubmed Data : Korean J Physiol Pharmacol. 2018 May ;22(3):277-289. Epub 2018 Apr 25. PMID: 29719450

Article Published Date : May 01, 2018

Authors : Ju Hwan Kim, Uy Dong Sohn, Hyung-Gun Kim, Hak Rim Kim

Study Type : Animal Study
Additional Links
Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42)
Adverse Pharmacological Actions : Voltage-Gated Calcium Channel Activation : CK(1) : AC(1)

The adverse effects of electromagnetic fields may be mediated by activation of voltage-gated calcium channels.

Pubmed Data : J Cell Mol Med. 2013 Aug ;17(8):958-65. Epub 2013 Jun 26. PMID: 23802593

Article Published Date : Aug 01, 2013

Authors : Martin L Pall

Study Type : Review

Additional Links

Diseases : DNA damage : CK(1482) : AC(545) , Oxidative Stress : CK(6519) : AC(2436)

Additional Keywords : Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436) , Oxidative Stress : CK(6519) : AC(2436), Oxidative Stress : CK(6519) : AC(2436)

Anti Therapeutic Actions : Electromagnetic Fields : CK(4873) : AC(1001) , Electromagnetic Radiation : CK(80) : AC(42), Laptop Computer Use : CK(20) : AC(2) , Microwave Radiation : CK(8) : AC(4), Mobile Phone Radiation : CK(64) : AC(13) , Wi-Fi Radiation : CK(43) : AC(14)

Problem Substances : Cell Phone Exposure : CK(19) : AC(4)

Adverse Pharmacological Actions : Genotoxic : CK(201) : AC(78) , Oxidant : CK(122) : AC(48) , Voltage-Gated Calcium Channel Activation : CK(1) : AC(1)

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