Topic: Thimerosal
Thimerosal
05/27/2015

What is Cumulative Knowledge, and Why Should it Interest Me?

Cumulative Knowledge is determined by ascribing a numerical value to all the articles indexed on our database. The GreenMedInfo.com algorithm appraises a study's overall evidentiary power and quality by generating a numerical value. This "Cumulative Knowledge" score incorporates variables such as study type, with the following types listed in descending order by their power: Meta-Analysis, Human Study, Human: Case Study, Animal: Transgenic, Animal, In Vitro, Review, and Commentary. The cumulative total will provide you an idea about the depth and quality of information that this topic has accumulated on our site. For instance, if you downloaded a document on "Cancers: All", you might see "Curcumin" with a Cumulative Knowledge of 677 and Resveratrol with a Cumulative Knowledge of 175. This does not mean that Curcumin is better, but just that we have gathered more quality research on the Substance Curcumin. Click here to read a more in depth explanation.

How are Topics and Articles Sorted in this PDF?

Articles in this document are placed within their respective Topic category. If you download a document on the Disease "Cancers: All" and are interested in all articles pertaining to the Substance "Curcumin" with regard to "Cancers: All", you will find them under the "Curcumin" sub-section underneath the Cumulative Knowledge section. Topics are sorted based on their Cumulative Knowledge in relation to the main topic of the download. In the previous example, it would be in relation to "Cancers: All". Articles are then sorted based on the articles Published Date. Articles are sorted in a descending fashion, which means that the most recent articles are displayed first. Articles may appear more than once in this document. For each Topic that an Article contains, it will be displayed in that sub-section. For example, if an Article contains the Substances "Pterostilbene" and "Resveratrol", the article will be displayed under each Topic.

Quick Summary: 34 Diseases

<table>
<thead>
<tr>
<th>Name</th>
<th>Cumulative Knowledge</th>
<th>Article Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurodevelopmental Disorders</td>
<td>139</td>
<td>14</td>
</tr>
<tr>
<td>Autism Spectrum Disorders</td>
<td>114</td>
<td>19</td>
</tr>
<tr>
<td>Autism</td>
<td>82</td>
<td>8</td>
</tr>
<tr>
<td>Tic Disorders</td>
<td>61</td>
<td>4</td>
</tr>
<tr>
<td>Vaccine-induced Toxicity</td>
<td>48</td>
<td>8</td>
</tr>
<tr>
<td>Learning disorders</td>
<td>42</td>
<td>3</td>
</tr>
<tr>
<td>Attention Deficit Disorder</td>
<td>41</td>
<td>3</td>
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<tr>
<td>Mental Retardation</td>
<td>40</td>
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<tr>
<td>Speech Disorders</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Mercury Poisoning</td>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>Childhood Chemical Exposures</td>
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</tr>
<tr>
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<td>1</td>
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<td>20</td>
<td>1</td>
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<tr>
<td>Seizures</td>
<td>20</td>
<td>1</td>
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<td>Sexual Development: Dysfunctions and Abnormalities</td>
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<td>1</td>
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<td>Oxidative Stress</td>
<td>19</td>
<td>5</td>
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<tr>
<td>Mitochondrial Dysfunction</td>
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<tr>
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<td>12</td>
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As thimerosal was removed from childhood vaccines, the number of neurodevelopmental disorders decreased in the US. - GMI Summary

Article Published Date : Jun 01, 2006
Authors : David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Diseases : Childhood Chemical Exposures : CK(155) : AC(17), Neurodevelopmental Disorders : CK(149) : AC(13), Vaccine-induced Toxicity : CK(1242) : AC(180)
Problem Substances : Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions : Neurotoxic : CK(1116) : AC(188)
Exposure to mercury from thimerosal-containing vaccines was associated with an increased risk of neurodevelopmental problems in infants from 1992-1997. - GMI Summary

Article Published Date : Apr 01, 2005
Authors : David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Diseases : Attention Deficit Disorder : CK(397) : AC(12), Learning disorders : CK(154) : AC(36), Neurodevelopmental Disorders : CK(149) : AC(13), Seizures : CK(135) : AC(33), Speech Disorders : CK(30) : AC(2), Tic Disorders : CK(60) : AC(3)
Problem Substances : Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions : Neurotoxic : CK(1116) : AC(188)

Rates of autism, speech disorders, mental retardation, infantile spasms, and thinking abnormalities were higher in children exposed to higher thimerosal levels. - GMI Summary

Article Published Date : Aug 01, 2006
Authors : David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Diseases : Autism : CK(570) : AC(65), Cognitive Decline/Dysfunction : CK(579) : AC(95), Infantile Spasms : CK(50) : AC(4), Mental Retardation : CK(71) : AC(7), Neurodevelopmental Disorders : CK(149) : AC(13)
Problem Substances : Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions : Neurotoxic : CK(1116) : AC(188)

Thimerosal exposure in infants significantly increases neurodevelopmental disorders in infants, e.g. autism, autism spectrum disorders, tics, attention deficit disorder, and emotional disturbances. - GMI Summary

Article Published Date : Aug 15, 2008
Authors : Heather A Young, David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Diseases : Attention Deficit Disorder : CK(397) : AC(12), Autism : CK(570) : AC(65), Autism Spectrum Disorders : CK(1286) : AC(112), Emotional Disorders : CK(71) : AC(6), Neurodevelopmental Disorders : CK(149) : AC(13)
Problem Substances : Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

Thimerosal exposure is associated with tics and delayed language acquisition in infants. - GMI Summary

Article Published Date : Nov 01, 2003
Authors : Thomas Verstraeten, Robert L Davis, Frank DeStefano, Tracy A Lieu, Philip H Rhodes, Steven B Black, Henry Shinefield, Robert T Chen,
Study Type : Meta Analysis
Additional Links
Diseases : Learning disorders : CK(154) : AC(36), Neurodevelopmental Disorders : CK(149) : AC(13), Tic Disorders : CK(60) : AC(3)
Problem Substances : Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions : Neurotoxic : CK(1116) : AC(188)

Administration of thimerosal-containing vaccines in the United States resulted in a significant number of children developing neurodevelopmental disorders. - GMI Summary
Mothers receiving thimerosal via Rho(D) immune globulin injection saw a significantly higher rate of autism in the children exposed to mercury in utero. - GMI Summary

There is an association between neurodevelopmental disorders and thimerosal-containing vaccines. - GMI Summary

Data demonstrates a negative neurodevelopmental impact of perinatal exposure to thimerosal. - GMI Summary

Maturational changes in amygdala volume and the binding capacity of an opioid antagonist in the amygdala was significantly altered in infant macaques receiving the vaccine schedule. - GMI Summary
**Anti Therapeutic Actions**: Vaccination: All : CK(4715) : AC(363), Vaccination: Animal Model : CK(41) : AC(17)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

**These findings implicate a genetic influence in autistic disorders and provides a model for investigating thimerosal related neurotoxicity.** - GMI Summary

- **Pubmed Data**: Mol Psychiatry. 2004 Sep ;9(9):833-45. PMID: [15184908](https://doi.org/10.1038/sj.mp.4001588)
- **Article Published Date**: Aug 31, 2004
- **Authors**: M Hornig, D Chian, W I Lipkin
- **Study Type**: Animal Study
- **Additional Links**
  - **Diseases**: Autism Spectrum Disorders : CK(1286) : AC(112), Autoimmune Diseases : CK(5523) : AC(880), Neurodevelopmental Disorders : CK(149) : AC(13)
  - **Additional Keywords**: Neurodevelopmental Disorders : CK(149) : AC(13)
  - **Problem Substances**: Thimerosal : CK(299) : AC(44)

**Culmination of the research that examines the effects of thimerosal in humans indicates that it is a poison at minute levels with a plethora of deleterious consequences.** - GMI Summary

- **Article Published Date**: Apr 14, 2015
- **Authors**: David A Geier, Paul G King, Brian S Hooker, José G Dórea, Janet K Kern, Lisa K Sykes, Mark R Geier
- **Study Type**: Review
- **Additional Links**
  - **Diseases**: Autism Spectrum Disorders : CK(1286) : AC(112), Neurodevelopmental Disorders : CK(149) : AC(13), Tic Disorders : CK(60) : AC(3)
  - **Problem Substances**: Thimerosal : CK(299) : AC(44)

**High susceptibility of neural stem cells to methylmercury toxicity: effects on cell survival and neuronal differentiation.** - GMI Summary

- **Article Published Date**: Mar 31, 2006
- **Authors**: Christoffer Tamm, Joshua Duckworth, Ola Hermanson, Sandra Ceccatelli
- **Study Type**: In Vitro Study
- **Additional Links**
  - **Diseases**: Neurodevelopmental Disorders : CK(149) : AC(13)
  - **Pharmacological Actions**: Antiproliferative : CK(1274) : AC(831), Apoptotic : CK(1758) : AC(1221)
  - **Additional Keywords**: Apoptotic : CK(1758) : AC(1221), Vaccine Adjuvant : CK(17) : AC(6)
  - **Problem Substances**: Thimerosal : CK(299) : AC(44)

**This study shows that inhibition of methionine synthase(MS) activity by ethanol, lead, mercury, aluminum and thimerosal suggesting that it may be an important target of neurodevelopmental toxins.** - GMI Summary

- **Pubmed Data**: Mol Psychiatry. 2004 Apr ;9(4):358-70. PMID: [14745455](https://doi.org/10.1038/mp.2004.39)
- **Article Published Date**: Mar 31, 2004
- **Authors**: M Waly, H Olteanu, R Banerjee, S-W Choi, J B Mason, B S Parker, S Sukumar, S Shim, A Sharma, J M Benzecry, V-A Power-Charnitsky, R C Deth
- **Study Type**: In Vitro Study
- **Additional Links**
  - **Diseases**: Attention Deficit Disorder : CK(397) : AC(12), Autism Spectrum Disorders : CK(1286) : AC(112), Neurodevelopmental Disorders : CK(149) : AC(13)
  - **Problem Substances**: Aluminum : CK(170) : AC(43), Ethanol : CK(22) : AC(7), Lead : CK(140) : AC(15), Thimerosal : CK(299) : AC(44)
  - **Adverse Pharmacological Actions**: Hypermethylation : CK(11) : AC(1)
Thimerosal exposure in infants significantly increases neurodevelopment disorders in infants, e.g. autism, autism spectrum disorders, tics, attention deficit disorder, and emotional disturbances. - GMI Summary

Article Published Date : Aug 15, 2008
Authors : Heather A Young, David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Diseases : Attention Deficit Disorder : CK(397) : AC(12), Autism : CK(570) : AC(65), Autism Spectrum Disorders : CK(1286) : AC(112), Emotional Disorders : CK(71) : AC(6), Neurodevelopmental Disorders : CK(149) : AC(13)
Problem Substances : Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

A meta-analysis reveals that thimerosal containing vaccines significantly increase the risk of neurodevelopmental disorders. - GMI Summary

Article Published Date : Aug 01, 2006
Authors : David A Geier, Mark R Geier
Study Type : Human Study
Additional Links
Problem Substances : Thimerosal : CK(299) : AC(44)

A subpopulation of eight individuals from four of the families showed thimerosal hypersensitivity. - GMI Summary

Article Published Date : Dec 31, 2012
Authors : Martyn A Sharpe, Taylor L Gist, David S Baskin
Study Type : Human Study
Additional Links
Problem Substances : Thimerosal : CK(299) : AC(44)

Administration of thimerosal-containing vaccines in the United States resulted in a significant number of children developing neurodevelopmental disorders. - GMI Summary

Pubmed Data : Int J Toxicol. 2004 Nov-Dec;23(6):369-76. PMID: 15764492
Article Published Date : Nov 01, 2004
Authors : David Geier, Mark R Geier
Study Type : Human Study
Additional Links
Diseases : Autism Spectrum Disorders : CK(1286) : AC(112), Neurodevelopmental Disorders : CK(149) : AC(13)
Problem Substances : Thimerosal : CK(299) : AC(44)

Children with autism were twice as likely as non-autistic controls to be born from mothers who had Rh incompatibilities with the developing fetus during pregnancy. - GMI Summary

Pubmed Data : J Matern Fetal Neonatal Med. 2007 May ;20(5):385-90. PMID: 17674242
In this reanalysis data shows that a statistically significant link appears between blood mercury levels and autistic disorder in children. - GMI Summary

Mercury levels are 1.9 times higher in subjects diagnosed with autism spectrum disorders. - GMI Summary

There is evidence supporting an association between increasing organic-Hg exposure from Thimerosal-containing childhood vaccines and the subsequent risk of an ASD. - GMI Summary

This study shows that autistic children had significantly reduced excretion levels of mercury via hair than the control group. - GMI Summary

A series of case studies demonstrate that thimerosal exposure is a major
**contributing factor to the pathogenesis of autism spectrum disorders.** - GMI Summary


Article Published Date: May 15, 2007

Authors: David A Geier, Mark R Geier

Study Type: Human: Case Report

Additional Links


Problem Substances: Thimerosal: CK(299) : AC(44)

Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

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**These findings implicate a genetic influence in autistic disorders and provides a model for investigating thimerosal related neurotoxicity.** - GMI Summary

Pubmed Data: Mol Psychiatry. 2004 Sep ;9(9):833-45. PMID: 15184908

Article Published Date: Aug 31, 2004

Authors: M Hornig, D Chian, W I Lipkin

Study Type: Animal Study

Additional Links

Diseases: Autism Spectrum Disorders: CK(1286) : AC(112), Autoimmune Diseases: CK(5523) : AC(880), Neurodevelopmental Disorders: CK(149) : AC(13)

Additional Keywords: Neurodevelopmental Disorders: CK(149) : AC(13)

Problem Substances: Thimerosal: CK(299) : AC(44)

Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

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**This study proposes the novel hypothesis that abnormalities involving the zinc-metalloprotease-BDNF axis may play a pivotal role in hyperconnectivity and megalencephaly observed in ASD.** - GMI Summary

Pubmed Data: Mol Brain. 2014 ;7:64. Epub 2014 Sep 3. PMID: 25182223

Article Published Date: Dec 31, 2013

Authors: Jae-Young Koh, Joon Seo Lim, Hyae-Ran Byun, Min-Heui Yoo

Study Type: Animal Study

Additional Links

Diseases: Autism Spectrum Disorders: CK(1286) : AC(112)

Problem Substances: Thimerosal: CK(299) : AC(44)

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**A comprehensive analysis is included on the comorbidities of autism and their corresponding analogs due to mercury exposure.** - GMI Summary

Pubmed Data: Med Hypotheses. 2001 Apr ;56(4):462-71. PMID: 11339848

Article Published Date: Mar 31, 2001

Authors: S Bernard, A Enayati, L Redwood, H Roger, T Binstock

Study Type: Review

Additional Links

Diseases: Autism Spectrum Disorders: CK(1286) : AC(112), Mercury Poisoning: CK(172) : AC(45)

Additional Keywords: Mercury Poisoning: CK(172) : AC(45), Mercury Poisoning: CK(172) : AC(45), Methylmercury: CK(2) : AC(1)

Problem Substances: Mercury: CK(131) : AC(17), Thimerosal: CK(299) : AC(44)

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**A review of medical literature has shown that exposure to organic or inorganic mercury can give rise to the symptoms and traits defining or commonly found in ASD individuals.** - GMI Summary


Article Published Date: Dec 31, 2001

Authors: S Bernard, A Enayati, H Roger, T Binstock, L Redwood

Study Type: Review

Additional Links
Culmination of the research that examines the effects of thimerosal in humans indicates that it is a poison at minute levels with a plethora of deleterious consequences. - GMI Summary

Scientific research does not support rejecting the link between the neurodevelopmental disorder of autism and toxic exposures. - GMI Summary

There appears to be little difference in the neurotoxicity of MeHg and EthylHg. - GMI Summary

There is a biological basis for mercury-induced autism spectrum disorders and the sexual dimorphism associated with disease prevalence. - GMI Summary

This study shows that inhibition of methionine synthase(MS) activity by ethanol, lead, mercury, aluminum and thimerosal suggesting that it may be an important target of neurodevelopmental toxins. - GMI Summary
### Rates of autism, speech disorders, mental retardation, infantile spasms, and thinking abnormalities were higher in children exposed to higher thimerosal levels. - GMI Summary


**Article Published Date**: Aug 01, 2006

**Authors**: David A Geier, Mark R Geier

**Study Type**: Meta Analysis

**Diseases**: Autism: CK(570) : AC(65), Cognitive Decline/Dysfunction: CK(579) : AC(95), Infantile Spasms: CK(50) : AC(4), Mental Retardation: CK(71) : AC(7), Neurodevelopmental Disorders: CK(149) : AC(13)

**Problem Substances**: Thimerosal: CK(299) : AC(44)

**Adverse Pharmacological Actions**: Neurotoxic: CK(1116) : AC(188)

### Thimerosal exposure in infants significantly increases neurodevelopment disorders in infants, e.g. autism, autism spectrum disorders, tics, attention deficit disorder, and emotional disturbances. - GMI Summary


**Article Published Date**: Aug 15, 2008

**Authors**: Heather A Young, David A Geier, Mark R Geier

**Study Type**: Meta Analysis

**Diseases**: Autism: CK(570) : AC(65), Cognitive Decline/Dysfunction: CK(579) : AC(95), Infantile Spasms: CK(50) : AC(4), Mental Retardation: CK(71) : AC(7), Neurodevelopmental Disorders: CK(149) : AC(13)

**Problem Substances**: Thimerosal: CK(299) : AC(44)

### A meta-analysis reveals that thimerosal containing vaccines significantly increase the risk of neurodevelopmental disorders. - GMI Summary


**Article Published Date**: Aug 01, 2006

**Authors**: David A Geier, Mark R Geier

**Study Type**: Human Study


**Problem Substances**: Thimerosal: CK(299) : AC(44)

### Mercury levels are 1.9 times higher in subjects diagnosed with autism spectrum disorders. - GMI Summary


**Article Published Date**: Jan 01, 2010

**Authors**: David A Geier, Tapan Audhya, Janet K Kern, Mark R Geier
There is an association between neurodevelopmental disorders and thimerosal-containing vaccines. - GMI Summary


There is evidence supporting an association between increasing organic-Hg exposure from Thimerosal-containing childhood vaccines and the subsequent risk of an ASD. - GMI Summary


The vaccine adjuvant thimerosal is cytotoxic to neuronal cells. - GMI Summary


There is a biological basis for mercury-induced autism spectrum disorders and the sexual dimorphism associated with disease prevalence. - GMI Summary


Topic: Tic Disorders

Exposure to mercury from thimerosal-containing vaccines was associated with an increased risk of neurodevelopmental problems in infants from 1992-1997. - GMI Summary
Thimerosal exposure in infants is associated with an increase risk for tics. - GMI Summary

Thimerosal exposure is associated with tics and delayed language acquisition in infants. - GMI Summary

Culmination of the research that examines the effects of thimerosal in humans indicates that it is a poison at minute levels with a plethora of deleterious consequences. - GMI Summary

Topic: Vaccine-induced Toxicity

As thimerosal was removed from childhood vaccines, the number of neurodevelopmental disorders decreased in the US. - GMI Summary
**There is evidence supporting an association between increasing organic-Hg exposure from Thimerosal-containing childhood vaccines and the subsequent risk of an ASD.** - GMI Summary


**Article Published Date**: Dec 31, 2012

**Authors**: David A Geier, Brian S Hooker, Janet K Kern, Paul G King, Lisa K Sykes, Mark R Geier

**Study Type**: Human Study

**Additional Links**

**Diseases**: Autism: CK(570) : AC(65), Autism Spectrum Disorders : CK(1286) : AC(112), Mercury Poisoning : CK(172) : AC(45), Vaccine-induced Toxicity : CK(1242) : AC(180)

**Anti Therapeutic Actions**: Vaccination: All : CK(4715) : AC(363)

**Problem Substances**: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

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**Thimerosal containing vaccines may cause atopy in children.** - GMI Summary

**Pubmed Data**: Contact Dermatitis. 1999 Feb;40(2):94-7. PMID: 10048654

**Article Published Date**: Feb 01, 1999

**Authors**: A Patrizi, L Rizzoli, C Vincenzi, P Trevisi, A Tosti

**Study Type**: Human Study

**Additional Links**

**Diseases**: Atopic Dermatitis : CK(719) : AC(84), Atopic Disease : CK(91) : AC(9), Atopic Hypersensitivity : CK(10) : AC(1), Vaccine-induced Toxicity : CK(1242) : AC(180)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

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**Maturational changes in amygdala volume and the binding capacity of an opioid antagonist in the amygdala was significantly altered in infant macaques receiving the vaccine schedule.** - GMI Summary


**Article Published Date**: Dec 31, 2009

**Authors**: Laura Hewitson, Brian J Lopresti, Carol Stott, N Scott Mason, Jaime Tomko

**Study Type**: Animal Study

**Additional Links**

**Diseases**: Amygdala: Damage/Abnormalities : CK(12) : AC(1), Neurodevelopmental Disorders : CK(149) : AC(13), Vaccine-induced Toxicity : CK(1242) : AC(180)

**Anti Therapeutic Actions**: Vaccination: All : CK(4715) : AC(363), Vaccination: Animal Model : CK(41) : AC(17)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

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**Neonatal exposure to thimerosal-containing vaccines might induce excitotoxic brain injuries, leading to neurodevelopmental disorders. DHEA may protect against mercury-induced neurotoxicity.** - GMI Summary


**Article Published Date**: Oct 21, 2011

**Authors**: Michalina Duszczyk-Budhathoki, Mieszko Olczak, Malgorzata Lehner, Maria Dorota Majewska

**Study Type**: Animal Study

**Additional Links**

**Substances**: DHEA (Dehydroepiandrosterone) : CK(209) : AC(34)

**Diseases**: Excitotoxicity : CK(57) : AC(34), Mercury Poisoning : CK(172) : AC(45), Vaccine-induced Toxicity : CK(1242) : AC(180)

**Pharmacological Actions**: Neuroprotective Agents : CK(1050) : AC(544)

**Problem Substances**: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

**Adverse Pharmacological Actions**: Neurotoxic : CK(1116) : AC(188)
There are lasting neuropathological changes in rat brain after intermittent neonatal administration of thimerosal. - GMI Summary


Authors: Mieszko Olczak, Michalina Duszczyk, Pawel Mierzejewski, Teresa Wierzb-Bobrowicz, Maria D Majewska

Study Type: Animal Study

Additional Links

Diseases: Infant Chemical Exposures: CK(165) : AC(24), Neurodegenerative Diseases: CK(2087) : AC(447), Vaccine-induced Toxicity: CK(1242) : AC(180)

Problem Substances: Thimerosal: CK(299) : AC(44)

Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

Compounds commonly used as preservatives in US licensed vaccine/biological preparations exhibit significant toxicity and may not comply with the US Code of Federal Regulations for preservatives. - GMI Summary


Authors: David A Geier, Sarah K Jordan, Mark R Geier

Study Type: In Vitro Study

Additional Links

Diseases: Vaccine-induced Toxicity: CK(1242) : AC(180)

Problem Substances: 2-phenoxyethanol: CK(2) : AC(2), Adjuvant: CK(18) : AC(6), Benzethonium chloride: CK(2) : AC(2), Phenol: CK(2) : AC(2), Thimerosal: CK(299) : AC(44)

Review: Thimerosal use represents a medical crisis. - GMI Summary

Pubmed Data: J Toxicol Environ Health B Crit Rev. 2007 Dec;10(8):575-96. PMID: 18049924

Authors: David A Geier, Lisa K Sykes, Mark R Geier

Study Type: Review

Additional Links

Diseases: Mercury Poisoning: CK(172) : AC(45), Vaccine-induced Toxicity: CK(1242) : AC(180)

Problem Substances: Thimerosal: CK(299) : AC(44)

Topic: Learning disorders

Exposure to mercury from thimerosal-containing vaccines was associated with an increased risk of neurodevelopmental problems in infants from 1992-1997. - GMI Summary


Authors: David A Geier, Mark R Geier

Study Type: Meta Analysis

Additional Links

Diseases: Attention Deficit Disorder: CK(397) : AC(12), Learning disorders: CK(154) : AC(36), Neurodevelopmental Disorders: CK(149) : AC(13), Seizures: CK(135) : AC(33), Speech Disorders: CK(30) : AC(2), Tic Disorders: CK(60) : AC(3)

Problem Substances: Thimerosal: CK(299) : AC(44)

Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

Thimersol exposure is associated with tics and delayed language acquisition in infants. - GMI Summary

**Data demonstrates a negative neurodevelopmental impact of perinatal exposure to thimerosal.** - GMI Summary

**Pubmed Data**: Cerebellum. 2012 Jun ;11(2):575-86. PMID: 22015705
**Article Published Date**: May 31, 2012
**Authors**: Z L Sulkowski, T Chen, S Midha, A M Zavacki, Elizabeth M Sajdel-Sulkowska
**Study Type**: Animal Study

**Topic: Attention Deficit Disorder**

**Exposure to mercury from thimerosal-containing vaccines was associated with an increased risk of neurodevelopmental problems in infants from 1992-1997.** - GMI Summary

**Article Published Date**: Apr 01, 2005
**Authors**: David A Geier, Mark R Geier
**Study Type**: Meta Analysis

**Thimerosal exposure in infants significantly increases neurodevelopmental disorders in infants, e.g. autism, autism spectrum disorders, tics, attention deficit disorder, and emotional disturbances.** - GMI Summary

**Article Published Date**: Aug 15, 2008
**Authors**: Heather A Young, David A Geier, Mark R Geier
**Study Type**: Meta Analysis

**This study shows that inhibition of methionine synthase(MS) activity by ethanol, lead, mercury, aluminum and thimerosal suggesting that it may be an important target of neurodevelopmental toxins.** - GMI Summary

**Pubmed Data**: Mol Psychiatry. 2004 Apr ;9(4):358-70. PMID: 14745455
**Topic: Mental Retardation**

*Rates of autism, speech disorders, mental retardation, infantile spasms, and thinking abnormalities were higher in children exposed to higher thimerosal levels.* - GMI Summary


*Article Published Date*: Aug 01, 2006

*Authors*: David A Geier, Mark R Geier

*Study Type*: Meta Analysis

**Additional Links**


*Problem Substances*: Thimerosal: CK(299) : AC(44)

*Adverse Pharmacological Actions*: Neurotoxic: CK(1116) : AC(188)

*A meta-analysis reveals that thimerosal containing vaccines significantly increase the risk of neurodevelopmental disorders.* - GMI Summary


*Article Published Date*: Aug 01, 2006

*Authors*: David A Geier, Mark R Geier

*Study Type*: Human Study

**Additional Links**


*Problem Substances*: Thimerosal: CK(299) : AC(44)

**There is an association between neurodevelopmental disorders and thimerosal-containing vaccines.** - GMI Summary


*Article Published Date*: Jun 01, 2003

*Authors*: Mark R Geier, David A Geier

*Study Type*: Human Study

**Additional Links**


*Problem Substances*: Thimerosal: CK(299) : AC(44)

**Topic: Speech Disorders**

*Exposure to mercury from thimerosal-containing vaccines was associated with an increased risk of neurodevelopmental problems in infants from 1992-1997.* - GMI Summary

A meta-analysis reveals that thimerosal containing vaccines significantly increase the risk of neurodevelopmental disorders. - GMI Summary


2001: Depending on the immunization schedule, vaccine formulation, and infant weight, cumulative exposure of infants to mercury from thimerosal during the first 6 months of life may exceed EPA guidelines. - GMI Summary

Pubmed Data: Pediatrics. 2001 May;107(5):1147-54. PMID: 11331700

There is evidence supporting an association between increasing organic-Hg exposure from Thimerosal-containing childhood vaccines and the subsequent risk of an ASD. - GMI Summary


A series of case studies demonstrate that thimerosal exposure is a major contributing factor to the pathogenesis of autism spectrum disorders. - GMI Summary

Neonatal exposure to thimerosal-containing vaccines might induce excitotoxic brain injuries, leading to neurodevelopmental disorders. DHEA may protect against mercury-induced neurotoxicity. - GMI Summary

Article Published Date: Oct 21, 2011
Authors: Michalina Duszycky-Budhathoki, Mieszko Olczak, Malgorzata Lehner, Maria Dorota Majewska
Study Type: Animal Study
Additional Links
Problem Substances: Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

A comprehensive analysis is included on the comorbidities of autism and their corresponding analogs due to mercury exposure. - GMI Summary

Pubmed Data: Med Hypotheses. 2001 Apr ;56(4):462-71. PMID: 11339848
Article Published Date: Mar 31, 2001
Authors: S Bernard, A Enayati, L Redwood, H Roger, T Binstock
Study Type: Review
Additional Links
Diseases: Autism Spectrum Disorders : CK(1286) : AC(112), Mercury Poisoning : CK(172) : AC(45), Vaccine-induced Toxicity : CK(1242) : AC(180)
Additional Keywords: Neuroprotective Agents : CK(1050) : AC(544)
Problem Substances: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

Review: Thimerosal use represents a medical crisis. - GMI Summary

Pubmed Data: J Toxicol Environ Health B Crit Rev. 2007 Dec;10(8):575-96. PMID: 18049924
Article Published Date: Dec 01, 2007
Authors: David A Geier, Lisa K Sykes, Mark R Geier
Study Type: Review
Additional Links
Diseases: Mercury Poisoning : CK(172) : AC(45), Vaccine-induced Toxicity : CK(1242) : AC(180)
Problem Substances: Thimerosal : CK(299) : AC(44)

There appears to be little difference in the neurotoxicity of MeHg and EthylHg. - GMI Summary

Pubmed Data: Mol Psychiatry. 2002 ;7 Suppl 2:S40-1. PMID: 12142946
Article Published Date: Dec 31, 2001
Authors: M Aschner, S J Walker
Study Type: Review
Additional Links
Additional Keywords: Neurotoxicity : CK(37) : AC(15), Methylmercury : CK(2) : AC(1)
Problem Substances: Thimerosal : CK(299) : AC(44)

Topic: Childhood Chemical Exposures
As thimerosal was removed from childhood vaccines, the number of neurodevelopmental disorders decreased in the US. - GMI Summary

Article Published Date : Jun 01, 2006
Authors : David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Diseases : Childhood Chemical Exposures : CK(155) : AC(17), Neurodevelopmental Disorders : CK(149) : AC(13), Vaccine-induced Toxicity : CK(1242) : AC(180)
Problem Substances : Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions : Neurotoxic : CK(1116) : AC(188)

Topic: Cognitive Decline/Dysfunction

Rates of autism, speech disorders, mental retardation, infantile spasms, and thinking abnormalities were higher in children exposed to higher thimerosal levels. - GMI Summary

Article Published Date : Aug 01, 2006
Authors : David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Diseases : Autism : CK(570) : AC(65), Cognitive Decline/Dysfunction : CK(579) : AC(95), Infantile Spasms : CK(50) : AC(4), Mental Retardation : CK(71) : AC(7), Neurodevelopmental Disorders : CK(149) : AC(13)
Problem Substances : Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions : Neurotoxic : CK(1116) : AC(188)

Topic: Emotional Disorders

Thimersol exposure in infants significantly increases neurodevelopmental disorders in infants, e.g. autism, autism spectrum disorders, tics, attention deficit disorder, and emotional disturbances. - GMI Summary

Article Published Date : Aug 15, 2008
Authors : Heather A Young, David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Problem Substances : Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

Topic: Infantile Spasms

Rates of autism, speech disorders, mental retardation, infantile spasms, and thinking abnormalities were higher in children exposed to higher thimerosal levels. - GMI Summary

Article Published Date : Aug 01, 2006
Authors : David A Geier, Mark R Geier
Study Type : Meta Analysis
Additional Links
Diseases : Autism : CK(570) : AC(65), Cognitive Decline/Dysfunction : CK(579) : AC(95), Infantile Spasms : CK(1242) : AC(180)
**Topic: Seizures**

*Exposure to mercury from thimerosal-containing vaccines was associated with an increased risk of neurodevelopmental problems in infants from 1992-1997.* - GMI Summary


**Article Published Date**: Apr 01, 2005

**Authors**: David A Geier, Mark R Geier

**Study Type**: Meta Analysis

**Additional Links**

**Diseases**: Attention Deficit Disorder : CK(397) : AC(12), Learning disorders : CK(154) : AC(36), Neurodevelopmental Disorders : CK(149) : AC(13), Seizures : CK(135) : AC(33), Speech Disorders : CK(30) : AC(2), Tic Disorders : CK(60) : AC(3)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

**Adverse Pharmacological Actions**: Neurotoxic : CK(1116) : AC(188)

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**Topic: Sexual Development: Dysfunctions and Abnormalities**

*Thimerosal exposure is associated with increasing trends of premature puberty in 278,624 subjects from 1990-1996.* - GMI Summary

**Pubmed Data**: Indian J Med Res. 2010 Apr;131:500-7. PMID: 20424300

**Article Published Date**: Apr 01, 2010

**Authors**: David A Geier, Heather A Young, Mark R Geier

**Study Type**: Meta Analysis

**Additional Links**

**Diseases**: Sexual Development: Dysfunctions and Abnormalities : CK(78) : AC(10)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

**Adverse Pharmacological Actions**: Endocrine Disruptor : CK(482) : AC(88)

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**Topic: Oxidative Stress**

*A subpopulation of eight individuals from four of the families showed thimerosal hypersensitivity.* - GMI Summary


**Article Published Date**: Dec 31, 2012

**Authors**: Martyn A Sharpe, Taylor L Gist, David S Baskin

**Study Type**: Human Study

**Additional Links**

**Diseases**: Autism Spectrum Disorders : CK(1286) : AC(112), Mitochondrial Dysfunction : CK(157) : AC(57), Oxidative Stress : CK(2152) : AC(750)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

**Findings suggest that the epidemiological link between environmental mercury exposure and an increased risk of developing autism may be mediated through mitochondrial dysfunction.** - GMI Summary

**Pubmed Data**: J Toxicol. 2015 ;2015:573701. Epub 2015 Jan 21. PMID: 25688267

**Article Published Date**: Dec 31, 2014

**Authors**: Shannon Rose, Rebecca Wynne, Richard E Frye, Stepan Melnyk, S Jill James

**Study Type**: Human In Vitro
Data demonstrates a negative neurodevelopmental impact of perinatal exposure to thimerosal. - GMI Summary

Pubmed Data: Cerebellum. 2012 Jun;11(2):575-86. PMID: 22015705
Article Published Date: May 31, 2012
Authors: Z L Sulkowski, T Chen, S Midha, A M Zavacki, Elizabeth M Sajdel-Sulkowska
Study Type: Animal Study
Additional Links
Additional Keywords: Oxidative Stress: CK(2152): AC(750)
Problem Substances: Thimerosal: CK(299): AC(44)

The results of this study suggest that ethylmercury is a mitochondrial toxin in human astrocytes. - GMI Summary

Article Published Date: Dec 31, 2011
Authors: Martyn A Sharpe, Andrew D Livingston, David S Baskin
Study Type: In Vitro Study
Additional Links
Problem Substances: Thimerosal: CK(299): AC(44)

The vaccine adjuvant thimerosal is cytotoxic to T cells. - GMI Summary

Article Published Date: Aug 01, 2002
Authors: S Makani, S Gollapudi, L Yel, S Chiplunkar, S Gupta
Study Type: In Vitro Study
Additional Links
Problem Substances: Thimerosal: CK(299): AC(44)

Topic: Mitochondrial Dysfunction

A subpopulation of eight individuals from four of the families showed thimerosal hypersensitivity. - GMI Summary

Article Published Date: Dec 31, 2012
Authors: Martyn A Sharpe, Taylor L Gist, David S Baskin
Study Type: Human Study
Additional Links
Problem Substances: Thimerosal: CK(299): AC(44)

Findings suggest that the epidemiological link between environmental mercury exposure and an increased risk of developing autism may be mediated through...
**Topic: Infant Chemical Exposures**

**2001: Depending on the immunization schedule, vaccine formulation, and infant weight, cumulative exposure of infants to mercury from thimerosal during the first 6 months of life may exceed EPA guidelines.** - GMI Summary

**Pubmed Data**: Pediatrics. 2001 May;107(5):1147-54. PMID: **11331700**

**Article Published Date**: May 01, 2001

**Authors**: L K Ball, R Ball, R D Pratt

**Study Type**: Human Study

**Additional Links**

**Diseases**: Infant Chemical Exposures : CK(165) : AC(24), Mercury Poisoning : CK(172) : AC(45)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

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**There are lasting neuropathological changes in rat brain after intermittent neonatal administration of thimerosal.** - GMI Summary

**Pubmed Data**: Folia Neuropathol. 2010 ;48(4):258-69. PMID: **21225508**

**Article Published Date**: Jan 01, 2010

**Authors**: Mieszko Olczak, Michalina Duszczyk, Paweł Mierzejewski, Teresa Wierzba-Bobrowicz, Maria D Majewska

**Study Type**: Animal Study

**Additional Links**

**Diseases**: Infant Chemical Exposures : CK(165) : AC(24), Neurodegenerative Diseases : CK(2087) : AC(447), Vaccine-induced Toxicity : CK(1242) : AC(180)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

**Adverse Pharmacological Actions**: Neurotoxic : CK(1116) : AC(188)

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**Topic: Attention Deficit Disorder with Hyperactivity**

**Mothers receiving thimerosal via Rho(D) immune globulin injection saw a significantly higher rate of autism in the children exposed to mercury in utero.** - GMI Summary

**Pubmed Data**: Neuro Endocrinol Lett. 2008 Apr ;29(2):272-80. PMID: **18404135**

**Article Published Date**: Mar 31, 2008

**Authors**: David A Geier, Elizabeth Mumper, Bambi Gladfelter, Lisa Coleman, Mark R Geier

**Study Type**: Human Study

**Additional Links**

**Diseases**: Attention Deficit Disorder with Hyperactivity : CK(283) : AC(31), Developmental Disorder: Children : CK(30) : AC(3), Neurodevelopmental Disorders : CK(149) : AC(13)

**Additional Keywords**: Neurodevelopmental Disorders : CK(149) : AC(13), Neurodevelopmental Disorders : CK(149) : AC(13)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

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**A review of medical literature has shown that exposure to organic or inorganic mercury can give rise to the symptoms and traits defining or commonly found**
in ASD individuals. - GMI Summary

Article Published Date: Dec 31, 2001
Authors: S Bernard, A Enayati, H Roger, T Binstock, L Redwood
Study Type: Review

Additional Links
Additional Keywords: Autism Spectrum Disorders: CK(1286): AC(112), Autism Spectrum Disorders: CK(1286): AC(112), Methylmercury: CK(2): AC(1)

Topic: Developmental Disorder: Children

Mothers receiving thimerosal via Rho(D) immune globulin injection saw a significantly higher rate of autism in the children exposed to mercury in utero. - GMI Summary

Article Published Date: Mar 31, 2008
Authors: David A Geier, Elizabeth Mumper, Bambi Gladfelter, Lisa Coleman, Mark R Geier
Study Type: Human Study

Additional Links
Additional Keywords: Neurodevelopmental Disorders: CK(149): AC(13), Neurodevelopmental Disorders: CK(149): AC(13)
Problem Substances: Thimerosal: CK(299): AC(44)

There appears to be little difference in the neurotoxicity of MeHg and EthylHg. - GMI Summary

Pubmed Data: Mol Psychiatry. 2002;7 Suppl 2:S40-1. PMID: 12142946
Article Published Date: Dec 31, 2001
Authors: M Aschner, S J Walker
Study Type: Review

Additional Links
Additional Keywords: Neurotoxicity: CK(37): AC(15), Methylmercury: CK(2): AC(1)
Problem Substances: Thimerosal: CK(299): AC(44)

Topic: Ataxia: Cerebellar

A meta-analysis reveals that thimerosal containing vaccines significantly increase the risk of neurodevelopmental disorders. - GMI Summary

Article Published Date: Aug 01, 2006
Authors: David A Geier, Mark R Geier
Study Type: Human Study

Additional Links
Problem Substances: Thimerosal: CK(299): AC(44)
**Topic: Atopic Dermatitis**

*Thimerosal containing vaccines may cause atopy in children.* - GMI Summary

**Pubmed Data**: Contact Dermatitis. 1999 Feb;40(2):94-7. PMID: 10048654

**Article Published Date**: Feb 01, 1999

**Authors**: A Patrizi, L Rizzoli, C Vincenzi, P Trevisi, A Tosti

**Study Type**: Human Study

**Additional Links**

- **Diseases**: Atopic Dermatitis : CK(719) : AC(84), Atopic Disease : CK(91) : AC(9), Atopic Hypersensitivity : CK(10) : AC(1), Vaccine-induced Toxicity : CK(1242) : AC(180)

- **Problem Substances**: Thimerosal : CK(299) : AC(44)

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**Topic: Atopic Disease**

*Thimerosal containing vaccines may cause atopy in children.* - GMI Summary

**Pubmed Data**: Contact Dermatitis. 1999 Feb;40(2):94-7. PMID: 10048654

**Article Published Date**: Feb 01, 1999

**Authors**: A Patrizi, L Rizzoli, C Vincenzi, P Trevisi, A Tosti

**Study Type**: Human Study

**Additional Links**

- **Diseases**: Atopic Dermatitis : CK(719) : AC(84), Atopic Disease : CK(91) : AC(9), Atopic Hypersensitivity : CK(10) : AC(1), Vaccine-induced Toxicity : CK(1242) : AC(180)

- **Problem Substances**: Thimerosal : CK(299) : AC(44)

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**Topic: Atopic Hypersensitivity**

*Thimerosal containing vaccines may cause atopy in children.* - GMI Summary

**Pubmed Data**: Contact Dermatitis. 1999 Feb;40(2):94-7. PMID: 10048654

**Article Published Date**: Feb 01, 1999

**Authors**: A Patrizi, L Rizzoli, C Vincenzi, P Trevisi, A Tosti

**Study Type**: Human Study

**Additional Links**

- **Diseases**: Atopic Dermatitis : CK(719) : AC(84), Atopic Disease : CK(91) : AC(9), Atopic Hypersensitivity : CK(10) : AC(1), Vaccine-induced Toxicity : CK(1242) : AC(180)

- **Problem Substances**: Thimerosal : CK(299) : AC(44)

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**Topic: Detoxification: Impaired**

*This study shows that autistic children had significantly reduced excretion levels of mercury via hair than the control group.* - GMI Summary


**Article Published Date**: Jun 30, 2003

**Authors**: Amy S Holmes, Mark F Blaxill, Boyd E Haley

**Study Type**: Human Study

**Additional Links**

- **Diseases**: Autism Spectrum Disorders : CK(1286) : AC(112), Detoxification: Impaired : CK(1) : AC(1)

- **Additional Keywords**: Detoxification: Impaired : CK(1) : AC(1), Methylmercury : CK(2) : AC(1)

- **Problem Substances**: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

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**Topic: Personality Disorder: Borderline**
A meta-analysis reveals that thimerosal containing vaccines significantly increase the risk of neurodevelopmental disorders. - GMI Summary

Article Published Date: Aug 01, 2006
Authors: David A Geier, Mark R Geier
Study Type: Human Study

Additional Links
Problem Substances: Thimerosal : CK(299) : AC(44)

Topic: Neurodegenerative Diseases

A series of case studies demonstrate that thimerosal exposure is a major contributing factor to the pathogenesis of autism spectrum disorders. - GMI Summary

Article Published Date: May 15, 2007
Authors: David A Geier, Mark R Geier
Study Type: Human: Case Report

Additional Links
Problem Substances: Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

There are lasting neuropathological changes in rat brain after intermittent neonatal administration of thimerosal. - GMI Summary

Article Published Date: Jan 01, 2010
Authors: Mieszko Olczak, Michalina Duszczyk, Pawel Mierzejewski, Teresa Wierzbica-Bobrowicz, Maria D Majewska
Study Type: Animal Study

Additional Links
Diseases: Infant Chemical Exposures : CK(165) : AC(24), Neurodegenerative Diseases : CK(2087) : AC(447), Vaccine-induced Toxicity : CK(1242) : AC(180)
Problem Substances: Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

Topic: Excitotoxicity

Neonatal exposure to thimerosal-containing vaccines might induce excitotoxic brain injuries, leading to neurodevelopmental disorders. DHEA may protect against mercury-induced neurotoxicity. - GMI Summary

Article Published Date: Oct 21, 2011
Authors: Michalina Duszczyk-Budhathoki, Mieszko Olczak, Malgorzata Lehner, Maria Dorota Majewska
Study Type: Animal Study

Additional Links
Substances: DHEA (Dehydroepiandrosterone) : CK(209) : AC(34)
Diseases: Excitotoxicity : CK(37) : AC(34), Mercury Poisoning : CK(172) : AC(45), Vaccine-induced Toxicity : CK(1242) : AC(180)
Pharmacological Actions: Neuroprotective Agents : CK(1050) : AC(544)
Problem Substances: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)
The results of this study suggest that ethylmercury is a mitochondrial toxin in human astrocytes. - GMI Summary

**Publication Details**


**Article Published Date** : Dec 31, 2011

**Authors** : Martyn A Sharpe, Andrew D Livingston, David S Baskin

**Study Type** : In Vitro Study

**Additional Links**

**Diseases** : DNA damage : CK(728) : AC(304), Excitotoxicity : CK(57) : AC(34), Oxidative Stress : CK(2152) : AC(750)

**Problem Substances** : Thimerosal : CK(299) : AC(44)

**Adverse Pharmacological Actions** : Apoptotic : CK(8) : AC(7), Excitotoxic : CK(10) : AC(1)

**Topic: Amygdala: Damage/Abnormalities**

Maturational changes in amygdala volume and the binding capacity of an opioid antagonist in the amygdala was significantly altered in infant macaques receiving the vaccine schedule. - GMI Summary

**Publication Details**


**Article Published Date** : Dec 31, 2009

**Authors** : Laura Hewitson, Brian J Lopresti, Carol Stott, N Scott Mason, Jaime Tomko

**Study Type** : Animal Study

**Additional Links**

**Diseases** : Amygdala: Damage/Abnormalities : CK(12) : AC(1), Neurodevelopmental Disorders : CK(149) : AC(13), Vaccine-induced Toxicity : CK(1242) : AC(180)

**Anti Therapeutic Actions** : Vaccination: All : CK(4715) : AC(363), Vaccination: Animal Model : CK(41) : AC(17)

**Problem Substances** : Thimerosal : CK(299) : AC(44)

**Topic: Autoimmune Diseases**

These findings implicate a genetic influence in autistic disorders and provides a model for investigating thimerosal related neurotoxicity. - GMI Summary

**Publication Details**


**Article Published Date** : Aug 31, 2004

**Authors** : M Hornig, D Chian, W I Lipkin

**Study Type** : Animal Study

**Additional Links**

**Diseases** : Autism Spectrum Disorders : CK(1286) : AC(112), Autoimmune Diseases : CK(5523) : AC(880), Neurodevelopmental Disorders : CK(149) : AC(13)

**Additional Keywords** : Neurodevelopmental Disorders : CK(149) : AC(13)

**Problem Substances** : Thimerosal : CK(299) : AC(44)

**Adverse Pharmacological Actions** : Neurotoxic : CK(1116) : AC(188)

**Topic: Neurotoxicity**

There appears to be little difference in the neurotoxicity of MeHg and EthylHg. - GMI Summary

**Publication Details**


**Article Published Date** : Dec 31, 2001

**Authors** : M Aschner, S J Walker

**Study Type** : Review
This study investigated the cellular response to thimerosal toxicity including a very profound decrease in intracellular glutathione levels. - GMI Summary

Article Published Date: Dec 31, 2004
Authors: S J James, William Slikker, Stepan Melnyk, Elizabeth New, Marta Pogribna, Stefanie Jernigan
Study Type: In Vitro Study
Additional Links
Diseases: Neurotoxicity: CK(37): AC(15)
Additional Keywords: Neurotoxicity: CK(37): AC(15)
Problem Substances: Thimerosal: CK(299): AC(44)
Adverse Pharmacological Actions: Cytotoxicity: CK(1): AC(1)

Topic: DNA damage

The results of this study suggest that ethylmercury is a mitochondrial toxin in human astrocytes. - GMI Summary

Article Published Date: Dec 31, 2011
Authors: Martyn A Sharpe, Andrew D Livingston, David S Baskin
Study Type: In Vitro Study
Additional Links
Problem Substances: Thimerosal: CK(299): AC(44)

Topic: Immune Disorders: Low Immune Function

The vaccine adjuvant thimerosal is cytotoxic to T cells. - GMI Summary

Article Published Date: Aug 01, 2002
Authors: S Makani, S Gollapudi, L Yel, S Chiplunkar, S Gupta
Study Type: In Vitro Study
Additional Links
Problem Substances: Thimerosal: CK(299): AC(44)

Category: Adverse Pharmacological Actions

Topic: Neurotoxic

As thimerosal was removed from childhood vaccines, the number of neurodevelopmental disorders decreased in the US. - GMI Summary

Article Published Date: Jun 01, 2006
Exposure to mercury from thimerosal-containing vaccines was associated with an increased risk of neurodevelopmental problems in infants from 1992-1997. - GMI Summary

Article Published Date: Apr 01, 2005
Authors: David A Geier, Mark R Geier
Study Type: Meta Analysis
Additional Links
Diseases: Attention Deficit Disorder: CK(397) : AC(12), Learning disorders : CK(154) : AC(36), Neurodevelopmental Disorders : CK(149) : AC(13), Seizures : CK(135) : AC(33), Speech Disorders : CK(30) : AC(2), Tic Disorders : CK(60) : AC(3)
Problem Substances: Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

Rates of autism, speech disorders, mental retardation, infantile spasms, and thinking abnormalities were higher in children exposed to higher thimerosal levels. - GMI Summary

Article Published Date: Aug 01, 2006
Authors: David A Geier, Mark R Geier
Study Type: Meta Analysis
Additional Links
Diseases: Autism : CK(570) : AC(65), Cognitive Decline/Dysfunction : CK(579) : AC(95), Infantile Spasms : CK(50) : AC(4), Mental Retardation : CK(71) : AC(7), Neurodevelopmental Disorders : CK(149) : AC(13)
Problem Substances: Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

Thimerosal exposure in infants is associated with an increase risk for tics. - GMI Summary

Pubmed Data: Pediatrics. 2004 Sep;114(3):584-91. PMID: 15342825
Article Published Date: Sep 01, 2004
Authors: Nick Andrews, Elizabeth Miller, Andrew Grant, Julia Stowe, Velda Osborne, Brent Taylor
Study Type: Meta Analysis
Additional Links
Diseases: Tic Disorders : CK(60) : AC(3)
Problem Substances: Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

Thimerosal exposure is associated with tics and delayed language acquisition in infants. - GMI Summary

Article Published Date: Nov 01, 2003
Authors: Thomas Verstraeten, Robert L Davis, Frank DeStefano, Tracy A Lieu, Philip H Rhodes, Steven B Black, Henry Shinefield, Robert T Chen
Study Type: Meta Analysis
Additional Links
Diseases: Learning disorders : CK(154) : AC(36), Neurodevelopmental Disorders : CK(149) : AC(13), Tic Disorders : CK(60) : AC(3)
Problem Substances: Thimerosal : CK(299) : AC(44)
**Adverse Pharmacological Actions** : Neurotoxic : CK(1116) : AC(188)

**Mercury levels are 1.9 times higher in subjects diagnosed with autism spectrum disorders.** - GMI Summary

**Pubmed Data** : Acta Neurobiol Exp (Wars). 2010;70(2):177-86. PMID: 20628441
**Article Published Date** : Jan 01, 2010
**Authors** : David A Geier, Tapan Audhya, Janet K Kern, Mark R Geier
**Study Type** : Human Study
**Additional Links**
**Diseases** : Autism : CK(570) : AC(65), Autism Spectrum Disorders : CK(1286) : AC(112)
**Problem Substances** : Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)
**Adverse Pharmacological Actions** : Neurotoxic : CK(1116) : AC(188)

A series of case studies demonstrate that thimerosal exposure is a major contributing factor to the pathogenesis of autism spectrum disorders. - GMI Summary

**Pubmed Data** : J Toxicol Environ Health A. 2007 May 15;70(10):837-51. PMID: 17454560
**Article Published Date** : May 15, 2007
**Authors** : David A Geier, Mark R Geier
**Study Type** : Human: Case Report
**Additional Links**
**Diseases** : Autism Spectrum Disorders : CK(1286) : AC(112), Mercury Poisoning : CK(172) : AC(45), Neurodegenerative Diseases : CK(2087) : AC(447)
**Problem Substances** : Thimerosal : CK(299) : AC(44)
**Adverse Pharmacological Actions** : Neurotoxic : CK(1116) : AC(188)

Data demonstrates a negative neurodevelopmental impact of perinatal exposure to thimerosal. - GMI Summary

**Pubmed Data** : Cerebellum. 2012 Jun ;11(2):575-86. PMID: 22015705
**Article Published Date** : May 31, 2012
**Authors** : Z L Sulkowski, T Chen, S Midha, A M Zavacki, Elizabeth M Sajdel-Sulkowska
**Study Type** : Animal Study
**Additional Links**
**Diseases** : Learning disorders : CK(154) : AC(36), Neurodevelopmental Disorders : CK(149) : AC(13), Oxidative Stress : CK(2152) : AC(750)
**Additional Keywords** : Oxidative Stress : CK(2152) : AC(750)
**Problem Substances** : Thimerosal : CK(299) : AC(44)
**Adverse Pharmacological Actions** : Neurotoxic : CK(1116) : AC(188)

Neonatal exposure to thimerosal-containing vaccines might induce excitotoxic brain injuries, leading to neurodevelopmental disorders. DHEA may protect against mercury-induced neurotoxicity. - GMI Summary

**Article Published Date** : Oct 21, 2011
**Authors** : Michalina Duszczyk-Budhathoki, Mieszko Olczak, Malgorzata Lehner, Maria Dorota Majewska
**Study Type** : Animal Study
**Additional Links**
**Substances** : DHEA (Dehydroepiandrosterone) : CK(209) : AC(34)
**Diseases** : Excitotoxicity : CK(57) : AC(34), Mercury Poisoning : CK(172) : AC(45), Vaccine-induced Toxicity : CK(1242) : AC(180)
**Pharmacological Actions** : Neuroprotective Agents : CK(1050) : AC(544)
**Problem Substances** : Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)
**Adverse Pharmacological Actions** : Neurotoxic : CK(1116) : AC(188)

There are lasting neuropathological changes in rat brain after intermittent neonatal administration of thimerosal. - GMI Summary
These findings implicate a genetic influence in autistic disorders and provides a model for investigating thimerosal related neurotoxicity. - GMI Summary

Thimerosal exposure is associated with increasing trends of premature puberty in 278,624 subjects from 1990-1996. - GMI Summary

The results of this study suggest that ethylmercury is a mitochondrial toxin in human astrocytes. - GMI Summary

This study investigated the cellular response to thimerosal toxicity including a
The results of this study suggest that ethylmercury is a mitochondrial toxin in human astrocytes. - GMI Summary

This study shows that inhibition of methionine synthase (MS) activity by ethanol, lead, mercury, aluminum and thimerosal suggesting that it may be an important target of neurodevelopmental toxins. - GMI Summary

As thimerosal was removed from childhood vaccines, the number of neurodevelopmental disorders decreased in the US. - GMI Summary
Exposure to mercury from thimerosal-containing vaccines was associated with an increased risk of neurodevelopmental problems in infants from 1992-1997. - GMI Summary

Article Published Date: Apr 01, 2005
Authors: David A Geier, Mark R Geier
Study Type: Meta Analysis
Additional Links
Diseases: Attention Deficit Disorder: CK(397) : AC(12), Learning disorders: CK(154) : AC(36), Neurodevelopmental Disorders: CK(149) : AC(13), Seizures: CK(135) : AC(33), Speech Disorders: CK(30) : AC(2), Tic Disorders: CK(60) : AC(3)
Problem Substances: Thimerosal: CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

Rates of autism, speech disorders, mental retardation, infantile spasms, and thinking abnormalities were higher in children exposed to higher thimerosal levels. - GMI Summary

Article Published Date: Aug 01, 2006
Authors: David A Geier, Mark R Geier
Study Type: Meta Analysis
Additional Links
Diseases: Autism: CK(570) : AC(65), Cognitive Decline/Dysfunction: CK(579) : AC(95), Infantile Spasms: CK(50) : AC(12), Mental Retardation: CK(71) : AC(7), Neurodevelopmental Disorders: CK(149) : AC(13)
Problem Substances: Thimerosal: CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

Thimerosal exposure is associated with increasing trends of premature puberty in 278,624 subjects from 1990-1996. - GMI Summary

Pubmed Data: Indian J Med Res. 2010 Apr;131:500-7. PMID: 20424300
Article Published Date: Apr 01, 2010
Authors: David A Geier, Heather A Young, Mark R Geier
Study Type: Meta Analysis
Additional Links
Diseases: Sexual Development: Dysfunctions and Abnormalities: CK(78) : AC(10)
Problem Substances: Thimerosal: CK(299) : AC(44)
Adverse Pharmacological Actions: Endocrine Disruptor: CK(482) : AC(88)

Thimerosal exposure in infants is associated with an increase risk for tics. - GMI Summary

Pubmed Data: Pediatrics. 2004 Sep;114(3):584-91. PMID: 15342825
Article Published Date: Sep 01, 2004
Authors: Nick Andrews, Elizabeth Miller, Andrew Grant, Julia Stowe, Velda Osborne, Brent Taylor
Study Type: Meta Analysis
Additional Links
Diseases: Tic Disorders: CK(60) : AC(3)
Problem Substances: Thimerosal: CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

Thimerosal exposure in infants significantly increases neurodevelopment disorders in infants, e.g. autism, autism spectrum disorders, tics, attention
deficit disorder, and emotional disturbances. - GMI Summary

Article Published Date: Aug 15, 2008
Authors: Heather A Young, David A Geier, Mark R Geier
Study Type: Meta Analysis
Additional Links
Diseases: Attention Deficit Disorder : CK(397) : AC(12), Autism : CK(570) : AC(65), Autism Spectrum Disorders : CK(1286) : AC(112), Emotional Disorders : CK(71) : AC(6), Neurodevelopmental Disorders : CK(149) : AC(13)
Problem Substances: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

Thimerosal exposure is associated with tics and delayed language acquisition in infants. - GMI Summary

Article Published Date: Nov 01, 2003
Authors: Thomas Verstraeten, Robert L Davis, Frank DeStefano, Tracy A Lieu, Philip H Rhodes, Steven B Black, Henry Shinefield, Robert T Chen
Study Type: Meta Analysis
Additional Links
Diseases: Learning disorders : CK(154) : AC(36), Neurodevelopmental Disorders : CK(149) : AC(13), Tic Disorders : CK(60) : AC(3)
Problem Substances: Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Neurotoxic : CK(1116) : AC(188)

2001: Depending on the immunization schedule, vaccine formulation, and infant weight, cumulative exposure of infants to mercury from thimerosal during the first 6 months of life may exceed EPA guidelines. - GMI Summary

Pubmed Data: Pediatrics. 2001 May;107(5):1147-54. PMID: 11331700
Article Published Date: May 01, 2001
Authors: L K Ball, R Ball, R D Pratt
Study Type: Human Study
Additional Links
Diseases: Infant Chemical Exposures : CK(165) : AC(24), Mercury Poisoning : CK(172) : AC(45)
Problem Substances: Thimerosal : CK(299) : AC(44)

A meta-analysis reveals that thimerosal containing vaccines significantly increase the risk of neurodevelopmental disorders. - GMI Summary

Article Published Date: Aug 01, 2006
Authors: David A Geier, Mark R Geier
Study Type: Human Study
Additional Links
Problem Substances: Thimerosal : CK(299) : AC(44)

A subpopulation of eight individuals from four of the families showed thimerosal hypersensitivity. - GMI Summary

Article Published Date: Dec 31, 2012
Authors: Martyn A Sharpe, Taylor L Gist, David S Baskin
Study Type: Human Study
Additional Links
**Problem Substances**: Thimerosal : CK(299) : AC(44)

**Administration of thimerosal-containing vaccines in the United States resulted in a significant number of children developing neurodevelopmental disorders.** - GMI Summary


*Article Published Date*: Nov 01, 2004

*Authors*: David Geier, Mark R Geier

*Study Type*: Human Study

*Diseases*: Autism Spectrum Disorders : CK(1286) : AC(112), Neurodevelopmental Disorders : CK(149) : AC(13)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

**Children with autism were twice as likely as non-autistic controls to be born from mothers who had Rh incompatibilities with the developing fetus during pregnancy.** - GMI Summary


*Article Published Date*: Apr 30, 2007

*Authors*: David A Geier, Mark R Geier

*Study Type*: Human Study

*Diseases*: Autism Spectrum Disorders : CK(1286) : AC(112)

**Additional Keywords**: Autism Spectrum Disorders : CK(1286) : AC(112), Increased Risk : CK(104) : AC(5), Increased Risk : CK(104) : AC(5)

**Problem Substances**: Thimerosal : CK(299) : AC(44)

**In this reanalysis data shows that a statistically significant link appears between blood mercury levels and autistic disorder in children.** - GMI Summary


*Article Published Date*: Oct 31, 2007

*Authors*: M Catherine Desoto, Robert T Hitlan

*Study Type*: Human Study

*Diseases*: Autism Spectrum Disorders : CK(1286) : AC(112)

**Additional Keywords**: Autism Spectrum Disorders : CK(1286) : AC(112)

**Problem Substances**: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

**Mercury levels are 1.9 times higher in subjects diagnosed with autism spectrum disorders.** - GMI Summary


*Article Published Date*: Jan 01, 2010

*Authors*: David A Geier, Tapan Audhya, Janet K Kern, Mark R Geier

*Study Type*: Human Study

*Diseases*: Autism : CK(570) : AC(65), Autism Spectrum Disorders : CK(1286) : AC(112)

**Adverse Pharmacological Actions**: Neurotoxic : CK(1116) : AC(188)

**Problem Substances**: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

**Mothers receiving thimerosal via Rho(D) immune globulin injection saw a significantly higher rate of autism in the children exposed to mercury in utero.** - GMI Summary


*Article Published Date*: Mar 31, 2008

*Authors*: David A Geier, Elizabeth Mumper, Bambi Gladfelter, Lisa Coleman, Mark R Geier
There is an association between neurodevelopmental disorders and thimerosal-containing vaccines. - GMI Summary

Article Published Date: Jun 01, 2003
Authors: Mark R Geier, David A Geier

There is evidence supporting an association between increasing organic-Hg exposure from Thimerosal-containing childhood vaccines and the subsequent risk of an ASD. - GMI Summary

Article Published Date: Dec 31, 2012
Authors: David A Geier, Brian S Hooker, Janet K Kern, Paul G King, Lisa K Sykes, Mark R Geier

Thimerosal containing vaccines may cause atopy in children. - GMI Summary

Pubmed Data: Contact Dermatitis. 1999 Feb;40(2):94-7. PMID: 10048654
Article Published Date: Feb 01, 1999
Authors: A Patrizi, L Rizzoli, C Vincenzi, P Trevisi, A Tosti

This study shows that autistic children had significantly reduced excretion levels of mercury via hair than the control group. - GMI Summary

Article Published Date: Jun 30, 2003
Authors: Amy S Holmes, Mark F Blaxill, Boyd E Haley

Findings suggest that the epidemiological link between environmental mercury exposure and an increased risk of developing autism may be mediated through mitochondrial dysfunction. - GMI Summary
A series of case studies demonstrate that thimerosal exposure is a major contributing factor to the pathogenesis of autism spectrum disorders. - GMI Summary

Data demonstrates a negative neurodevelopmental impact of perinatal exposure to thimerosal. - GMI Summary

Infant macaques retained significantly higher levels of elemental mercury in their brain tissue when exposed to thimerosal in infant vaccines versus methylmercury. - GMI Summary

Maturational changes in amygdala volume and the binding capacity of an opioid antagonist in the amygdala was significantly altered in infant macaques receiving the vaccine schedule. - GMI Summary
**Neonatal administration of a vaccine preservative, thimerosal, produces lasting impairment of nociception and apparent activation of opioid system in rats.** - GMI Summary


Article Published Date: Dec 08, 2009

Authors: Mieszko Olczak, Michalina Duszczyk, Pawel Mierzejewski, Maria Dorota Majewska

Study Type: Animal Study

Additional Links

**Diseases**: Excitotoxicity: CK(57) : AC(34), Mercury Poisoning: CK(172) : AC(45), Vaccine-induced Toxicity: CK(1242) : AC(180)

**Pharmacological Actions**: Neuroprotective Agents: CK(1050) : AC(544)

Problem Substances: Thimerosal: CK(299) : AC(44)

Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

**Neonatal exposure to thimerosal-containing vaccines might induce excitotoxic brain injuries, leading to neurodevelopmental disorders. DHEA may protect against mercury-induced neurotoxicity.** - GMI Summary


Article Published Date: Oct 21, 2011

Authors: Michalina Duszczyk-Budhathoki, Mieszko Olczak, Malgorzata Lehner, Maria Dorota Majewska

Study Type: Animal Study

Additional Links

**Substances**: DHEA (Dehydroepiandrosterone): CK(209) : AC(34)

**Diseases**: Excitotoxicity: CK(57) : AC(34), Mercury Poisoning: CK(172) : AC(45), Vaccine-induced Toxicity: CK(1242) : AC(180)

**Pharmacological Actions**: Neuroprotective Agents: CK(1050) : AC(544)

Problem Substances: Mercury: CK(131) : AC(17), Thimerosal: CK(299) : AC(44)

Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

**There are lasting neuropathological changes in rat brain after intermittent neonatal administration of thimerosal.** - GMI Summary


Article Published Date: Jan 01, 2010

Authors: Mieszko Olczak, Michalina Duszczyk, Pawel Mierzejewski, Teresa Wierzbowa-Bobrowicz, Maria D Majewska

Study Type: Animal Study

Additional Links

**Diseases**: Infant Chemical Exposures: CK(165) : AC(24), Neurodegenerative Diseases: CK(2087) : AC(447), Vaccine-induced Toxicity: CK(1242) : AC(180)

Problem Substances: Thimerosal: CK(299) : AC(44)

Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

**These findings implicate a genetic influence in autistic disorders and provides a model for investigating thimerosal related neurotoxicity.** - GMI Summary


Article Published Date: Aug 31, 2004

Authors: M Hornig, D Chian, W I Lipkin

Study Type: Animal Study

Additional Links

**Diseases**: Autism Spectrum Disorders: CK(1286) : AC(112), Autoimmune Diseases: CK(5523) : AC(880), Neurodevelopmental Disorders: CK(149) : AC(13)

**Additional Keywords**: Neurodevelopmental Disorders: CK(149) : AC(13)

Problem Substances: Thimerosal: CK(299) : AC(44)

Adverse Pharmacological Actions: Neurotoxic: CK(1116) : AC(188)

**This study proposes the novel hypothesis that abnormalities involving the zinc-metalloprotease-BDNF axis may play a pivotal role in hyperconnectivity and**
megalecephaly observed in ASD. - GMI Summary

Pubmed Data: Mol Brain. 2014 ;7:64. Epub 2014 Sep 3. PMID: 25182223
Article Published Date: Dec 31, 2013
Authors: Jae-Young Koh, Joon Seo Lim, Hyae-Ran Byun, Min-Heui Yoo
Study Type: Animal Study
Additional Links
Diseases: Autism Spectrum Disorders: CK(1286) : AC(112)
Problem Substances: Thimerosal : CK(299) : AC(44)

A comprehensive analysis is included on the comorbidities of autism and their corresponding analogs due to mercury exposure. - GMI Summary

Pubmed Data: Med Hypotheses. 2001 Apr ;56(4):462-71. PMID: 11339848
Article Published Date: Mar 31, 2001
Authors: S Bernard, A Enayati, L Redwood, H Roger, T Binstock
Study Type: Review
Additional Links
Diseases: Autism Spectrum Disorders: CK(1286) : AC(112), Mercury Poisoning : CK(172) : AC(45)
Additional Keywords: Mercury Poisoning : CK(172) : AC(45), Mercury Poisoning : CK(172) : AC(45), Methylmercury : CK(2) : AC(1)
Problem Substances: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

A review of medical literature has shown that exposure to organic or inorganic mercury can give rise to the symptoms and traits defining or commonly found in ASD individuals. - GMI Summary

Article Published Date: Dec 31, 2001
Authors: S Bernard, A Enayati, H Roger, T Binstock, L Redwood
Study Type: Review
Additional Links
Diseases: Attention Deficit Disorder with Hyperactivity : CK(283) : AC(31), Autism Spectrum Disorders: CK(1286) : AC(112)
Additional Keywords: Autism Spectrum Disorders : CK(1286) : AC(112), Autism Spectrum Disorders : CK(1286) : AC(112), Methylmercury : CK(2) : AC(1)
Problem Substances: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

Compounds commonly used as preservatives in US licensed vaccine/biological preparations exhibit significant toxicity and may not comply with the US Code of Federal Regulations for preservatives. - GMI Summary

Article Published Date: Apr 28, 2010
Authors: David A Geier, Sarah K Jordan, Mark R Geier
Study Type: In Vitro Study
Additional Links
Diseases: Vaccine-induced Toxicity : CK(1242) : AC(180)
Problem Substances: 2-phenoxyethanol : CK(2) : AC(2), Adjuvant : CK(18) : AC(6), Benzethonium chloride : CK(2) : AC(2), Phenol : CK(2) : AC(2), Thimerosal : CK(299) : AC(44)

Culmination of the research that examines the effects of thimerosal in humans indicates that it is a poison at minute levels with a plethora of deleterious consequences. - GMI Summary

Article Published Date: Apr 14, 2015
Authors: David A Geier, Paul G King, Brian S Hooker, José G Dórea, Janet K Kern, Lisa K Sykes, Mark R Geier
Study Type: Review
Additional Links
**High susceptibility of neural stem cells to methylmercury toxicity: effects on cell survival and neuronal differentiation.** - GMI Summary


Article Published Date: Mar 31, 2006

Authors: Christoffer Tamm, Joshua Duckworth, Ola Hermanson, Sandra Ceccatelli

Study Type: In Vitro Study

Additional Links

Diseases: [Neurodevelopmental Disorders: CK(149) : AC(13)](https://www.gmi.io/diseases/neurodevelopmental_disorders/)


Additional Keywords: [Apoptotic: CK(1758) : AC(1221)](https://www.gmi.io/keywords/apoptotic/), [Vaccine Adjuvant: CK(17) : AC(6)](https://www.gmi.io/keywords/vaccine_adjuvant/)

**Review: Thimerosal use represents a medical crisis.** - GMI Summary


Article Published Date: Dec 01, 2007

Authors: David A Geier, Lisa K Sykes, Mark R Geier

Study Type: Review

Additional Links


Problem Substances: [Thimerosal: CK(299) : AC(44)](https://www.gmi.io/problem_substances/thimerosal/)

**Scientific research does not support rejecting the link between the neurodevelopmental disorder of autism and toxic exposures.** - GMI Summary


Article Published Date: Dec 31, 2009

Authors: Mary Catherine Desoto, Robert T Hitlan

Study Type: Commentary

Additional Links


Problem Substances: [Thimerosal: CK(299) : AC(44)](https://www.gmi.io/problem_substances/thimerosal/)

The CDC's current stance that Thimerosal is safe and that there is no relationship to autism was based on six flawed studies coauthored and sponsored by the CDC. - GMI Summary


Article Published Date: Dec 31, 2013

Authors: Brian Hooker, Janet Kern, David Geier, Boyd Haley, Lisa Sykes, Paul King, Mark Geier

Study Type: Review

Additional Links

Additional Keywords: [Thimerosal: CK(299) : AC(44)](https://www.gmi.io/keywords/thimerosal/)

The results of this study suggest that ethylmercury is a mitochondrial toxin in human astrocytes. - GMI Summary


Article Published Date: Dec 31, 2011

Authors: Martyn A Sharpe, Andrew D Livingston, David S Baskin

Study Type: In Vitro Study

Additional Links


40
The vaccine adjuvant thimerosal is cytotoxic to neuronal cells. - GMI Summary

Article Published Date: Dec 01, 2005
Authors: Leman Yel, Lorrel E Brown, Kevin Su, Sastry Gollapudi, Sudhir Gupta
Study Type: In Vitro Study
Additional Links
Diseases: Autism: CK(570) : AC(65)
Problem Substances: Thimerosal : CK(299) : AC(44)

The vaccine adjuvant thimerosal is cytotoxic to T cells. - GMI Summary

Article Published Date: Aug 01, 2002
Authors: S Makani, S Gollapudi, L Yel, S Chiplunkar, S Gupta
Study Type: In Vitro Study
Additional Links
Diseases: Immune Disorders: Low Immune Function : CK(485) : AC(116), Oxidative Stress : CK(2152) : AC(750)
Problem Substances: Thimerosal : CK(299) : AC(44)

There appears to be little difference in the neurotoxicity of MeHg and EthylHg. - GMI Summary

Pubmed Data: Mol Psychiatry. 2002 ;7 Suppl 2:S40-1. PMID: 12142946
Article Published Date: Dec 31, 2001
Authors: M Aschner, S J Walker
Study Type: Review
Additional Links
Additional Keywords: Neurotoxicity : CK(37) : AC(15), Methylmercury : CK(2) : AC(1)
Problem Substances: Thimerosal : CK(299) : AC(44)

There is a biological basis for mercury-induced autism spectrum disorders and the sexual dimorphism associated with disease prevalence. - GMI Summary

Article Published Date: Jan 01, 2010
Authors: David A Geier, Janet K Kern, Mark R Geier
Study Type: Review
Additional Links
Diseases: Autism: CK(570) : AC(65), Autism Spectrum Disorders : CK(1286) : AC(112)
Problem Substances: Thimerosal : CK(299) : AC(44)

This study investigated the cellular response to thimerosal toxicity including a very profound decrease in intracellular glutathione levels. - GMI Summary

Article Published Date: Dec 31, 2004
Authors: S J James, William Slikker, Stepan Melnyk, Elizabeth New, Marta Pogribna, Stefanie Jernigan
Study Type: In Vitro Study
Additional Links
Diseases: Neurotoxicity : CK(37) : AC(15)
Additional Keywords: Neurotoxicity : CK(37) : AC(15)
Problem Substances: Thimerosal : CK(299) : AC(44)
Adverse Pharmacological Actions: Cytotoxicity : CK(1) : AC(1)
This study shows that inhibition of methionine synthase (MS) activity by ethanol, lead, mercury, aluminum and thimerosal suggesting that it may be an important target of neurodevelopmental toxins. - GMI Summary

Pubmed Data: Mol Psychiatry. 2004 Apr;9(4):358-70. PMID: 14745455

Article Published Date: Mar 31, 2004

Authors: M Waly, H Olteanu, R Banerjee, S-W Choi, J B Mason, B S Parker, S Sukumar, S Shim, A Sharma, J M Benzecry, V-A Power-Charnitsky, R C Deth

Study Type: In Vitro Study


Adverse Pharmacological Actions: Hypermethylation: CK(11): AC(1)

Topic: Mercury

Thimerosal exposure in infants significantly increases neurodevelopment disorders in infants, e.g. autism, autism spectrum disorders, tics, attention deficit disorder, and emotional disturbances. - GMI Summary


Article Published Date: Aug 15, 2008

Authors: Heather A Young, David A Geier, Mark R Geier

Study Type: Meta Analysis


In this reanalysis data shows that a statistically significant link appears between blood mercury levels and autistic disorder in children. - GMI Summary

Pubmed Data: J Child Neurol. 2007 Nov;22(11):1308-11. PMID: 18006963

Article Published Date: Oct 31, 2007

Authors: M Catherine Desoto, Robert T Hitlan

Study Type: Human Study

Diseases: Autism Spectrum Disorders: CK(1286): AC(112)


Mercury levels are 1.9 times higher in subjects diagnosed with autism spectrum disorders. - GMI Summary

Pubmed Data: Acta Neurol Exp (Wars). 2010;70(2):177-86. PMID: 20628441

Article Published Date: Jan 01, 2010

Authors: David A Geier, Tapan Audhya, Janet K Kern, Mark R Geier

Study Type: Human Study


Adverse Pharmacological Actions: Neurotoxic: CK(1116): AC(188)

There is evidence supporting an association between increasing organic-Hg exposure from Thimerosal-containing childhood vaccines and the subsequent
This study shows that autistic children had significantly reduced excretion levels of mercury via hair than the control group.

Infant macaques retained significantly higher levels of elemental mercury in their brain tissue when exposed to thimerosal in infant vaccines versus methylmercury.

Neonatal exposure to thimerosal-containing vaccines might induce excitotoxic brain injuries, leading to neurodevelopmental disorders. DHEA may protect against mercury-induced neurotoxicity.

A comprehensive analysis is included on the comorbidities of autism and their corresponding analogs due to mercury exposure.
A review of medical literature has shown that exposure to organic or inorganic mercury can give rise to the symptoms and traits defining or commonly found in ASD individuals. - GMI Summary

**Pubmed Data**: Mol Psychiatry. 2002 ;7 Suppl 2:S42-3. PMID: 12142947

**Article Published Date**: Dec 31, 2001

**Authors**: S Bernard, A Enayati, H Roger, T Binstock, L Redwood

**Study Type**: Review

**Additional Links**

**Diseases**: Autism Spectrum Disorders : CK(1286) : AC(112), Methylmercury : CK(2) : AC(1)

**Additional Keywords**: Autism Spectrum Disorders : CK(1286) : AC(112), Methylmercury : CK(2) : AC(1)

**Problem Substances**: Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

Scientific research does not support rejecting the link between the neurodevelopmental disorder of autism and toxic exposures. - GMI Summary

**Pubmed Data**: Acta Neurobiol Exp (Wars). 2010 ;70(2):165-76. PMID: 20628440

**Article Published Date**: Dec 31, 2009

**Authors**: Mary Catherine Desoto, Robert T Hitlan

**Study Type**: Commentary

**Additional Links**

**Diseases**: Autism Spectrum Disorders : CK(1286) : AC(112)

**Additional Keywords**: Autism Spectrum Disorders : CK(1286) : AC(112), Methylmercury : CK(2) : AC(1)

**Problem Substances**: Autism Spectrum Disorders : CK(1286) : AC(112), Mercury : CK(131) : AC(17), Thimerosal : CK(299) : AC(44)

**Topic**: 2-phenoxyethanol

Compounds commonly used as preservatives in US licensed vaccine/biological preparations exhibit significant toxicity and may not comply with the US Code of Federal Regulations for preservatives. - GMI Summary


**Article Published Date**: Apr 28, 2010

**Authors**: David A Geier, Sarah K Jordan, Mark R Geier

**Study Type**: In Vitro Study

**Additional Links**

**Diseases**: Vaccine-induced Toxicity : CK(1242) : AC(180)

**Problem Substances**: 2-phenoxyethanol : CK(2) : AC(2), Adjuvant : CK(18) : AC(6), Benzethonium chloride : CK(2) : AC(2), Phenol : CK(2) : AC(2), Thimerosal : CK(299) : AC(44)

**Topic**: Adjuvant

Compounds commonly used as preservatives in US licensed vaccine/biological preparations exhibit significant toxicity and may not comply with the US Code of Federal Regulations for preservatives. - GMI Summary


**Article Published Date**: Apr 28, 2010

**Authors**: David A Geier, Sarah K Jordan, Mark R Geier

**Study Type**: In Vitro Study

**Additional Links**
**Topic: Aluminum**

*This study shows that inhibition of methionine synthase (MS) activity by ethanol, lead, mercury, aluminum and thimerosal suggesting that it may be an important target of neurodevelopmental toxins.* - GMI Summary


**Article Published Date**: Mar 31, 2004

**Authors**: M Waly, H Olteanu, R Banerjee, S-W Choi, J B Mason, B S Parker, S Sukumar, S Shim, A Sharma, J M Benzecry, V-A Power-Charnitsky, R C Deth

**Study Type**: In Vitro Study

**Additional Links**


**Adverse Pharmacological Actions**: Hypermethylation: CK(11): AC(1)

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**Topic: Benzethonium chloride**

*Compounds commonly used as preservatives in US licensed vaccine/biological preparations exhibit significant toxicity and may not comply with the US Code of Federal Regulations for preservatives.* - GMI Summary


**Article Published Date**: Apr 28, 2010

**Authors**: David A Geier, Sarah K Jordan, Mark R Geier

**Study Type**: In Vitro Study

**Additional Links**

**Diseases**: Vaccine-induced Toxicity: CK(1242): AC(180)


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**Topic: Ethanol**

*This study shows that inhibition of methionine synthase (MS) activity by ethanol, lead, mercury, aluminum and thimerosal suggesting that it may be an important target of neurodevelopmental toxins.* - GMI Summary


**Article Published Date**: Mar 31, 2004

**Authors**: M Waly, H Olteanu, R Banerjee, S-W Choi, J B Mason, B S Parker, S Sukumar, S Shim, A Sharma, J M Benzecry, V-A Power-Charnitsky, R C Deth

**Study Type**: In Vitro Study

**Additional Links**


**Adverse Pharmacological Actions**: Hypermethylation: CK(11): AC(1)

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**Topic: Lead**

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This study shows that inhibition of methionine synthase (MS) activity by ethanol, lead, mercury, aluminum and thimerosal suggesting that it may be an important target of neurodevelopmental toxins. - GMI Summary

Pubmed Data: Mol Psychiatry. 2004 Apr ;9(4):358-70. PMID: 14745455

Authors: M Waly, H Olteanu, R Banerjee, S-W Choi, J B Mason, B S Parker, S Sukumar, S Shim, A Sharma, J M Benzecry, V-A Power-Charnitsky, R C Deth

Study Type: In Vitro Study

Additional Links


Adverse Pharmacological Actions: Hypermethylation: CK(11): AC(1)

Topic: Phenol

Compounds commonly used as preservatives in US licensed vaccine/biological preparations exhibit significant toxicity and may not comply with the US Code of Federal Regulations for preservatives. - GMI Summary


Authors: David A Geier, Sarah K Jordan, Mark R Geier

Study Type: In Vitro Study

Additional Links

Diseases: Vaccine-induced Toxicity: CK(1242): AC(180)


Topic: heavy metals

Scientific research does not support rejecting the link between the neurodevelopmental disorder of autism and toxic exposures. - GMI Summary


Authors: Mary Catherine Desoto, Robert T Hitlan

Study Type: Commentary

Additional Links

Diseases: Autism Spectrum Disorders: CK(1286): AC(112)