

Early Downward Trends in Neurodevelopmental Disorders Following Removal of Thimerosal-Containing Vaccines

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FROM ABSTRACT

Contemporaneously with the epidemic rise in neurodevelopmental disorders (NDs), first observed in the United States during the 1990s, the childhood immunization schedule was expanded by the U.S. Centers for Disease Control and Prevention (CDC) to include several additional thimerosal-containing vaccines (TCVs).

On July 7, 1999, a joint recommendation was made by the American Academy of Pediatrics (AAP) and the U.S. Public Health Service (PHS) to remove thimerosal from vaccines.

A two-phase study was undertaken to evaluate trends in diagnosis of new NDs entered into the Vaccine Adverse Event Reporting System (VAERS) and the California Department of Developmental Services (CDDS) databases on a reporting quarter basis, from 1994 through 2005.

Significant increasing trends in newly diagnosed NDs were observed in both databases 1994 through mid-2002.

Significant decreasing trends in newly diagnosed NDs were observed in both databases from mid-2002 through 2005.

The results indicate that the trends in newly diagnosed NDs correspond directly to the expansion and subsequent contraction of the cumulative mercury dose to which children were exposed from TCVs through the U.S. immunization schedule.

THESE AUTHORS ALSO NOTE:

“In 2004, the Department of Health and Human Services and the American Academy of Pediatrics (AAP) issued an Autism A.L.A.R.M., stating that 1 in 166 children currently have an autistic disorder, and 1 in 6 children have a developmental and/or behavioral disorder.” **[Incredible]**

Autism is now more prevalent than childhood cancer, diabetes, and Down syndrome.

The current epidemic in neurodevelopmental disorders (NDs) is not due to immigration or a changed diagnostic criteria.

Autism is a neurodevelopmental disorder characterized by impairments in social relatedness and communication, repetitive behaviors, and abnormal movements.

Exposure to mercury causes immune, sensory, neurological, motor, and behavioral dysfunctions similar to traits associated with autistic disorders.

Thimerosal is a mercury-containing compound (49.6% mercury by weight) that was added to many vaccines as a preservative.

The U.S. Centers for Disease Control and Prevention (CDC), from the late 1980s through the 1990s, expanded the number of doses of thimerosal-containing vaccines to be given to U.S. infants to:

- 5 doses of diphtheria-tetanus whole-cell-pertussis (DTP) vaccine
- 3 doses of hepatitis B (Hep b) vaccine
- 4 doses of type b (Hib) [flu] vaccine
- 3 doses of influenza vaccine for certain infant populations

"An infant who received all of these vaccines on schedule could have received as much as 200 micrograms (μg) of mercury during the first 6 months of life."**[WOW]**

On July 7, 1999 the American Academy of Pediatrics and the U.S. Public Health Service issued a joint statement calling for the "removal of thimerosal from all vaccines."

Despite its removal from many childhood vaccines, thimerosal is still routinely added to some formulations of influenza vaccine and to the tetanus-diphtheria and monovalent tetanus vaccines administered to older children and adults.

In 2004, the Institute of Medicine (IOM) of the U.S. National Academy of Sciences (NAS) retreated from the stated 1999 goal of the American Academy of Pediatrics and the US Public Health Service to remove thimerosal from US vaccines. **[Very Sad]**

Many nations still add thimerosal to their pediatric vaccines; WHO and several vaccine manufacturers still advocate the continued use of thimerosal in pediatric vaccines. **[Very Sad]**

"Examinations of the Vaccine Adverse Event Reporting System (VAERS), the U.S. Department of Education, and the Vaccine Safety Datalink (VSD) databases showed significant links between exposure to thimerosal-containing vaccines and neurodevelopmental disorders."

"Considering all significant environmental exposures to mercury, such as through breast milk, thimerosal-containing vaccines represent almost 50% of the total

mercury dose some infants received. The 187.5 µg of mercury through thimerosal-containing vaccines plus the average of 164 µg from breast milk during the first 6 months exceeded the methylmercury safety guidelines established by the U.S. Environmental Protection Agency (EPA), Health Canada, the World Health Organization (WHO), the Agency for Toxic Substances Disease Registry (ATSDR), and the U.S. Food and Drug Administration (FDA).” **[Wow]**

The increase in thimerosal-containing vaccines in the early to mid 1990s was associated with a significant 2- to 8-fold increase in risk of neurodevelopmental disorders.

In the middle 1980s, thimerosal is present in all whole-cell diphtheria-tetanus-wholecell-pertussis (DTP) vaccines administered to children four times, starting at age 2 months; during the first 18 months of life (a maximum of 25 µg Hg/dose with a maximum Hg exposure in 18 months of **100 µg**).

In the late 1980s, thimerosal-containing Haemophilus influenzae type b (Hib) vaccine is administered to children at age 18 months (maximum of 25 µg Hg/dose). The maximum Hg exposure in 18 months is now raised to **125 µg**.

In the early 1990s, 4 doses of thimerosal-containing Hib are recommended within 18 months (an increase of 3 doses), starting at age 2 months (maximum of 25 µg Hg/dose). The maximum Hg exposure in 18 months now raises to **200 µg**.

Also in the early 1990s, 3 doses of thimerosal-containing hepatitis B (Hep b) vaccine are recommended within the first 6 months, starting on the day of birth (maximum of 12.5 µg Hg/dose). The maximum Hg exposure in 18 months now raises to **237.5 µg**.

In the late 1990s, 3 doses of thimerosal-containing influenza vaccine are increasingly recommended for administration to children during the first 18 months, starting at age 6 months (12.5 µg Hg/dose). The maximum Hg exposure raises to **275 µg** in first 18 months. This is peak exposure to mercury.

Starting in August 1999, thimerosal-free vaccines begin to appear in the marketplace, reducing peak exposure to mercury down from the high of **275 µg**. This downward trend of mercury exposure continues to early 2003.

Specific adverse events following vaccination are required by law to be reported to the Vaccine Adverse Events Reporting System (VAERS) database; however, the system is known to be prone to underreporting.

DISCUSSION

The peak mercury exposure from thimerosal-containing vaccines during the first 18 months of life was 275 µg.

Starting in 1999, as thimerosal was removed from vaccines, the total mercury dose children received from vaccines was gradually reduced.

The increasing and subsequent decreasing trends in the rates of neurodevelopmental disorders, observed in both databases used in this study “correlate with temporal periods when the cumulative amount of mercury in the childhood immunization schedule expanded and later contracted.” **[Important]** This study showed a quick and substantial 35% reduction in the incidence of autism.

“The consistency of the effects observed for the spectrum of neurodevelopmental disorders, including autism and speech disorders, and the agreement between the observations from two separate databases, support the conclusions that the effect is real and not a chance observation.”

These conclusions are confirmed by data from the U.S. Department of Education that shows a recent decrease in the number of new autism diagnoses after years of annual increases.

Research shows that thimerosal crosses the blood-brain barrier and results in appreciable mercury content in the brain.

Studies show that small concentrations of thimerosal are capable of inducing neuronal death, neurodegeneration, membrane damage, and DNA damage within hours of exposure, and thimerosal exposure can disrupt critical signaling pathways and biochemical events necessary for neurons to undergo normal development.

Studies show that autistic children have a “46% decrease in the plasma concentration of glutathione, a necessary metabolite for the excretion of mercury from the body.”

Also, autistic children have significantly increased oxidative stress in comparison to control children. This is important because glutathione is a powerful antioxidant that reduces oxidative stress.

CONCLUSIONS

This study shows that “very specific neurodevelopmental disorders are associated with thimerosal-containing vaccines.”

“This conflicts with the 2004 conclusions of the Institute of Medicine,” who these authors believe are flat out wrong.

KEY POINTS FROM DAN MURPHY

- 1) Thimerosal is a mercury-containing compound that was added to many vaccines as a preservative.

- 2) Thimerosal crosses the blood-brain barrier and results in appreciable mercury content in the brain.
- 3) Small concentrations of thimerosal can induce neuronal death, neurodegeneration, membrane damage, and DNA damage within hours of exposure.
- 4) The U.S. Centers for Disease Control and Prevention increased the number of thimerosal-containing vaccines to be given to US children from the early 1980s to 1999. This increased infant mercury exposure from 100 μg to 275 μg in the first 18 months of a child's life.
- 5) The incidence of neurodevelopmental disorders in US children increased 2- to 8fold during this period of time, paralleling the increase in mercury exposure from thimerosal-containing vaccines.
- 6) On July 7, 1999, both the American Academy of Pediatrics and the US Public Health Service recommended the removal of thimerosal from vaccines.
- 7) Thimerosal was reduced in the vaccines given to US children from 1999 through 2003.
- 8) This reduction of thimerosal-containing vaccines given to US children resulted in a significant 35% decrease in Autism and neurodevelopmental disorders in US children.
- 9) Neurodevelopmental disorders rates correspond directly to the cumulative mercury dose to which children were exposed from thimerosal-containing vaccines through the US immunization schedule.
- 10) In 2004, 1 in 166 US children had an autistic disorder.
- 11) In 2004, 1 in 6 US children had a developmental and/or behavioral disorder.
[Incredible]
- 12) Autism is more prevalent than childhood cancer, diabetes, and Down syndrome.
- 13) "An infant who received all of these vaccines on schedule could have received as much as 200 micrograms (μg) of mercury during the first 6 months of life."
- 14) Today, thimerosal is still routinely added to some formulations of influenza vaccine and to the tetanus-diphtheria and monovalent tetanus vaccines.
- 15) "Examinations of the Vaccine Adverse Event Reporting System, the U.S. Department of Education, and the Vaccine Safety Datalink databases show

significant links between exposure to thimerosal-containing vaccines and neurodevelopmental disorders.”

- 16) Breast-fed babies who received all recommended vaccines exceeded the mercury safety guidelines established by the US Environmental Protection Agency, Health Canada, the World Health Organization, the Agency for Toxic Substances Disease Registry, and the US Food and Drug Administration (FDA).
- 17) This study shows that “very specific neurodevelopmental disorders are associated with thimerosal-containing vaccines.”
- 18) Autistic children have a significant decrease in the plasma concentration of glutathione.
- 19) Autistic children have significantly increased oxidative stress in comparison to control children.
- 20) [Glutathione is our body’s most powerful antioxidant that reduces oxidative stress].
- 21) Glutathione is a necessary metabolite for the excretion of mercury from the body.
- 22) This means that low levels of glutathione in Autistic children will give their bodies a larger mercury burden, increasing neurodevelopmental disorders and oxidative stress.

COMMENTS FROM DAN MURPHY: NOTE THE COMMENTS FROM SCIENCE NEWS:

Blood Hints at Autism’s Source
Science News
April 16, 2005

Researchers have identified a biochemical peculiarity in the blood of autistic children.

“The incidence of autism has gone up dramatically in the last 15 years,” notes S. Jill James, director of biochemical genetics at Arkansas Children’s Hospital in Little Rock. “Because genes don’t change that fast, this points to something in the environment as a trigger,” she says.

James found an unusual biochemical fingerprint in the blood of 100% of 75 autistic kids, while none of 75 normal kids had the biochemical marker.

“The autistic youngsters had unusually low concentrations of the antioxidant glutathione in their cells.”

“This pattern is consistent with an inability to detoxify poisons, especially heavy metals, such as mercury or lead,” James says. “That’s because the antioxidant normally binds to heavy metals, and the body then targets the molecular complex for elimination.”

James suspects that autism develops under the combined effect of genetic mutations that deplete glutathione and exposure of a child to heavy metals or other poisons.

“One of the most controversial theories about autism is that vaccines preserved with the mercury-containing chemical thimerosal can cause the condition.”

“Dietary treatments could boost glutathione in children carrying the genes that reduce the antioxidant,” says James. **[These dietary strategies are listed below]**

GLUTATHIONE

Glutamate---Cysteine---Glycine

(It attaches to Toxic Metals Like Mercury, Lead and Cadmium and Targets Them for Elimination)

To Increase Glutathione, The Rate Limiting Factor Is Cysteine

A) Homocysteine **→ Cysteine**
B6, B12, Folic Acid

(Complete Omega-3 Co-Factors From Nutri-West: 800-443-3333)

Each 2 Tablets contains: B-12 400 mcg, Vitamin C 500 mg, Vitamin B-2 (Riboflavin) 50 mg, Vitamin B-6 50 mg, Folic Acid 800 mcg, Magnesium Chelate 150 mg, Selenium

1 mcg, Reduced Glutathione 50 mg, Policosanol 5 mg [this is important because Policosanol, in this dosage, has proven to lower blood lipids better than statin drugs], CoQ10 5 mg, Alpha Lipoic Acid 5 mg. **Take 2 Per Day**

B) N-Acetyl Cysteine, or NAC

(Complete Glutathione From Nutri-West: 800-443-3333)

Each Tablet contains: N-Acetyl Cysteine 60 mg, Alpha Lipoic Acid 10 mg, L-Glutamine 15 mg, Vitamin C 75 mg, Selenium Chelate 10 mcg, Milk Thistle 50 mg, Silybin 10 mg, Thiamin 10 mg, Riboflavin 10 mg, B-6 5 mg, B-12 50 mcg, Vitamin E Succinate (natural) 10 i.u., Magnesium Chelate 5 mg, Zinc Chelate 500 mcg, Rosemary 75 mg, Curcumin extract (from Turmeric) 10 mg, Superoxide dismutase-G (Glutathione) 25 mg, Reduced Glutathione 5 mg. **Take 2 – 6 Per Day**

C) Undenatured Whey Protein

(Complete Whey-G From Nutri-West: 800-443-3333)

Each Tablespoon contains: Undenatured Whey 6375 mg, Quercetin 42.5 mg, Ginger 42.5 mg, Curcumin 21.25 mg, Boswellia 42.5 mg, Chamomile 42.5mg, Lou Han Guo 21.25 mg (natural herbal sweetener), Glutathione 850 mcg, Superoxide Dismutase Type G (glutathione) 42.5 mg, Rice Bran 1741 mg (for natural B-Vitamins) **Take 1 or 2 Tablespoons Per Day**