

## Medicine's Review of Thimerosal (2001)

In 2001 the IOM issued a report, entitled, "Immunization Safety Review – Thimerosal-Containing Vaccines and Neurodevelopmental Disorders." They found insufficient evidence to accept or reject a connection between thimerosal in vaccines and autism. They did, however, state that such a connection is "biologically plausible," and recommended much more research on the issue. The report summarized: "*The committee concludes that although the hypothesis that exposure to thimerosal-containing vaccines could be associated with neurodevelopmental disorders is not established and rests on indirect and incomplete information, primarily from analogies with methylmercury and levels of maximum mercury exposure from vaccines given in children, the hypothesis is biologically plausible.*"<sup>1</sup> "*The committee concludes that the evidence is inadequate to accept or reject a causal relationship between exposure to thimerosal from vaccines and the neurodevelopmental disorders of autism, ADHD, and speech or language delay.*"<sup>2</sup>

In a presentation to the Institute of Medicine's Immunization Safety Review Committee the former Director of the Environmental Toxicology Program at the National Institute of Environmental Health Sciences, National Institutes of Health, Dr. George Lucier, proffered the following conclusions: Ethylmercury is a neurotoxin. Infants may be more susceptible than adults. Ethylmercury should be considered equipotent to methylmercury as a developmental neurotoxin. Ethylmercury exposure from vaccines (added to dietary exposures to methylmercury) probably caused neurotoxic responses (likely subtle) in some children.<sup>3</sup>

The IOM also reviewed the results of one unpublished epidemiological study that detected a "statistically significant but weak association" between exposure to thimerosal-containing vaccines and several types of developmental disorders, including attention deficit disorder, speech and language delay, tics, and general neurodevelopmental delays. Phase I of the study, which was performed with data from the CDC's Vaccine Safety Datalink, (VSD) uncovered the aforementioned associations.<sup>4</sup> Phase II of the study, which provided enough data to analyze only speech delays and attention deficit disorder, did not detect an association between those disorders and thimerosal, as had Phase I. After being briefed on both phases of the study, the IOM's Immunization Safety Review Committee agreed that they were inconclusive.<sup>5</sup>

The IOM also noted with some discomfort that thimerosal had not been removed from all vaccines and medicines given to children and pregnant women. The report specifically cited the influenza vaccine, the diphtheria-tetanus toxoid vaccine, and some nasal sprays. They urged that, "full consideration be given by appropriate professional societies and government

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<sup>1</sup> Institute of Medicine, Immunization Safety Review Committee; "Immunization Safety Review – Thimerosal-Containing Vaccines and Neurodevelopmental Disorders"; October 1, 2001; Pg. 4.

<sup>2</sup> Id., Pg. 5.

<sup>3</sup> [http://www.iom.edu/iom/iomhome.nsf/WFiles/Lucier/\\$file/Lucier.pdf](http://www.iom.edu/iom/iomhome.nsf/WFiles/Lucier/$file/Lucier.pdf)

<sup>4</sup> Id.

<sup>5</sup> Id.

agencies to removing thimerosal from vaccines administered to infants, children or pregnant women in the United States.” It was also recommended that any remaining stocks of childhood vaccines containing mercury be removed from doctor’s offices and replaced with mercury-free alternatives.<sup>6</sup>

The IOM Committee recommends the pursuit of a diverse public health and biomedical research portfolio involving several federal agencies, private universities and industry. Unfortunately, the broad based research portfolio recommended by the IOM was never conducted. A subsequent meeting of the IOM Immunization Safety Review was convened prior to the enactment of much needed research that relied heavily on epidemiologic studies which reported to not find associations between exposure to thimerosal containing vaccines and autism. These studies have been the topic of much criticism from both the scientific and advocacy community. ([See epidemiological studies, what do they really tell us](#)). The finding at a subsequent 2004 meeting found no causal association between exposure to thimerosal containing vaccines and autism. The committee report also called for further research into thimerosal be abandoned for more productive areas of investigation, essentially ending all government sponsored research on thimerosal including investigations underway at the National Toxicology Program.

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<sup>6</sup> Id., Pgs. 8-9.