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Landmark Study Finds: Thimerosal Causes Autism Brain Pathology

Press Release
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WASHINGTON, DC – A new study, "A Mitochondrial Dysfunction, Impaired Oxidative-Reduction Activity, Degeneration, and Death in Human Neuronal and Fetal Cells Induced by Low-Level Exposure to Thimerosal and Other Metal Compounds", published in the most recent issue of the peer-reviewed journal of *Toxicology & Environmental Toxicology*[1], confirms a causal connection between Thimerosal and the brain pathology found in patients diagnosed with an autism spectrum disorder (ASD).

The research in this article[2] was undertaken to investigate cellular damage in three *in vitro* human neuronal and fetal-cell model systems. The potential damage induced by Thimerosal and other metal compounds, including aluminum sulfate, methylmercury hydroxide, lead acetate, and mercuric chloride was assessed using cell vitality assays and microscope-based digital image capture techniques.

This study showed Thimerosal-induced cellular damage in human neuronal and fetal-cell model systems in a concentration- and time-dependent fashion using Thimerosal at low nanomolar (parts-per-billion) concentrations. These concentrations are comparable to those found in fetal and early infant exposure to mercury from Thimerosal-containing biologics and vaccines in the 1990s and, in some instances, today. These levels induced significant cellular toxicity in the human neuronal and fetal cells studied. The Thimerosal-induced cellular damage was consistent with that found in pathophysiological studies of patients diagnosed with an ASD. In both instances, the studies found significant mitochondrial dysfunction, reduced cellular oxidative-reduction activity, cell degeneration, and cell death.

The present study also revealed that Thimerosal is significantly more toxic than the other metal compounds studied (e.g., aluminum sulfate, methylmercury hydroxide, lead acetate, and mercuric chloride). The explanation for Thimerosal's greater toxicity than even methylmercury hydroxide (MeHgOH) appears to be the fact that Thimerosal was chemically engineered in the 1920s to be a more highly toxic alkylmercury compound, whose biological transport and intracellular delivery properties were enhanced. Compared to MeHgOH, Thimerosal has: 1) higher aqueous solubility (i.e. ability to dissolve in water and water-based systems); 2) higher solubility in cell membranes (i.e. ability to dissolve in cell membranes); and 3) higher intracellular toxicity (i.e. ability to inactivate essential cell processes) and mercury retention.

The non-profit CoMeD, Inc., and, *through a grant from the Brenen Hornstein Autism Research & Education (BHARE) Foundation*, the non-profit Institute of Chronic Illnesses, Inc. funded this research study.

Today, any parent, physician, or healthcare provider can easily confirm whether or not a non-chelated child diagnosed with an ASD is mercury poisoned by having urinary porphyrin profile analysis (UPPA) testing run at LabCorp (CLIA-certified, test# 120980) or Laboratoire Philippe Auguste (ISO-certified, 119 Philippe Auguste Avenue, Paris, France 75011). Please, visit CoMeD's web site, http://www.Mercury-freeDrugs.org for information on how to order UPPA tests and full copies of published papers validating the UPPA test.

Your generous tax-free donations will help us fund additional research, similar to the present study, to examine mercury's links to autism and other illnesses, define the causal roles of mercury in the linked childhood and adult illnesses, and find appropriate curative therapies.

To support the ongoing efforts of CoMeD, Inc. with your tax-deductible contributions, please use the PayPal link on CoMeD's Internet website, http://www.Mercury-freeDrugs.org. CoMeD, Inc. is a not-for-profit 501(c)(3) corporation that is actively engaged in legal, educational and scientific efforts to stop all use of mercury in medicine, and to ban the use of all mercury-containing medicines.

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[1] Geier DA, King PG, Geier MR. Mitochondrial Dysfunction, Impaired Oxidative-Reduction Activity, Degeneration, and Death in Human Neuronal and Fetal Cells Induced by Low-Level Exposure to Thimerosal and Other Metal Compounds. Toxicological & Environmental Chemistry 2009;91:735-749. [access to articles full-text available at: http://www.informaworld.com/smpp/content~db=all~content=a910652305]

[2] Researchers with extensive backgrounds in medicine, chemistry, genetics, and biochemistry, from the Institute of Chronic Illnesses, Inc., CoMeD, Inc., and the Genetic Centers of America collaborated on the study.