

## AN EVALUATION OF THE EFFECTS OF THIMEROSAL ON NEURODEVELOPMENTAL DISORDERS REPORTED FOLLOWING DTP AND Hib VACCINES IN COMPARISON TO DTPH VACCINE IN THE UNITED STATES

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*Thimerosal is an ethylmercury (49.55% mercury by weight) preservative historically added to some vaccines. Toxicokinetic studies showed children in the United States received doses of mercury from Thimerosal-containing vaccines (TCVs) in excess of safety guidelines. In the United States during the 1990s, diphtheria–tetanus–pertussis (DTP) and Haemophilus influenzae type b (Hib) vaccines (maximally, 50 µg mercury per joint administration) and diphtheria–tetanus–pertussis–Haemophilus influenzae type b (DTPH) vaccines (25 µg mercury per administration) were given to children in the same childhood vaccination schedule at 2, 4, 6, and 15–18 mo, so that children receiving DTP and Hib vaccines may have maximally received an additional 100 µg more mercury exposure from TCVs than children administered DTPH vaccines. A case-control epidemiological study of neurodevelopmental disorders (NDs) reported to the Vaccine Adverse Event Reporting System (VAERS) (online public access version; updated 31 August 2004) following administration of DTP vaccines in comparison DTPH vaccines manufactured by Lederle Laboratories (Pearl River, NY) from 1994 through 1998 was undertaken. Significantly increased odds ratios for autism, speech disorders, mental retardation, infantile spasms, and thinking abnormalities reported to VAERS were found following DTP vaccines in comparison to DTPH vaccines with minimal bias or systematic error. Additional ND research should be undertaken in the context of evaluating mercury-associated exposures, especially since in 2005 the Institute of Medicine issued a report calling into question handling of vaccine safety data by the National Immunization Program of the Centers for Disease Control and Prevention.*

Thimerosal, an ethylmercurial preservative (49.55% mercury by weight) historically added to many vaccines, may have represented a significant source of mercury exposure in susceptible children (Ball et al., 2001). Thimerosal is still routinely added to required vaccines administered to U.S. infants (e.g., for influenza), and the Institute of Medicine (2004) of the U.S. National Academy

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Dr. Mark Geier has been an expert witness and consultant in cases involving vaccines before the no-fault National Vaccine Injury Compensation Program (NVICP) and in civil litigation. David Geier has been a consultant in cases involving vaccines before the no-fault NVICP and in civil litigation.

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