Autism and Mercury by Stephanie Cave M.D.

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Testimony Presented By
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My name is Stephanie Cave. I am in family practice in Baton Rouge, Louisiana. I want to express my deep appreciation to you, Mr. Burton, and to the members of your committee for allowing me to testify today.

I am presently treating over 300 autistic children with an additional 150 waiting to get in as soon as we can accommodate them. Dr. Amy Holmes, the physician-parent of an autistic child, joined me in February to help with the overwhelming numbers of children with this problem. We are treating children from all over the United States and getting calls from many places around the globe. This is truly an epidemic.

Autism was first described in 1943 by Kanner. Thimerosal, a mercury containing preservative, was first use in the vaccines in the early 1930s. Prior to 1970 the prevalence of autism was 1 in 2000. In 1970 it was 1 in 1000 and in 1996 the NIH estimated it to be 1 in 500. In the year 2000 reports from the education sector revealed the incidence to be 1 in 150.

Mercury can exist as a pure element or in various forms of inorganic and organic mercury. It affects the immune system and neurological systems at a very basic level. The timing of infant and toddler vaccines, with mercury, corresponds to critical periods of neuronal development. The blood brain barrier is not fully developed in the infant or toddler. The fetus is at risk of exposure to toxins during gestation including methyl mercury from seafood eaten by the mother. Other sources of heavy metals are amalgam fillings in the mother, Rhogam which is usually given to Rh negative mothers around 28 weeks gestation, and the influenza vaccine given during pregnancy.

These metals can be passed not only transplacentally, but also through breast milk to the infant at a time when the liver detoxification process in not perfected to the point of removing the metals. We have measured this detoxification process and have found it to be woefully inadequate in the developmentally delayed children. The organic ethyl mercury, injected in bolus through vaccines, enters the brain and converts to inorganic mercury, which cannot cross back over the blood brain barrier. This form is more likely to cause autoimmune antibodies to brain tissue. Similar antibodies appear in autism.

I believe that the introduction of the Hepatitis B vaccine in 1991 has sparked this recent epidemic because of the thimerosal. When added to the mercury imparted through the DTP and HIB the exposure to mercury exceeds the EPA safe limits for the metal considering a bolus dose on a single day. The EPA safe limits are usually related to ingested mercury, which is partially cleared by the liver. Injecting boluses of ethyl mercury presents another scenario. The two- month dose of mercury is at least 30 times higher than the recommended daily maximum exposure as set by the EPA.

During the 1990s infants received 12.5 mcg of mercury at birth followed by 12.5 mcg at one month, 50 mcg at 2 months, 50 mcg at 4 months, 62.5 mcg at 6 months, 50 mcg at 15 to 18 months. The total of 237.5 mcg for a child, who at best weighs 10 kg, far exceeds the safety limits if you consider bolus doses. In establishing normal safety levels, if there is indeed such a thing for a metal as toxic as mercury, bolus injections were not considered. If the nurse giving the injection did not shake the vial according to directions before drawing out the vaccine dose, there is a chance that the child receiving the last dose could get as much as 10 times the usual amount in one dose.

Stajeck and Lopez (Journal of Pediatrics, 2000) have shown mercury in the blood of infants at birth prior to the hepatitis B injections. After the vaccine, the levels rose in the blood of the infants tested. In some preterm infants there were levels that measured ten times that seen in term infants. The bile prod8uction is minimal in infants, making it more difficult for metals to be cleared from the body. When added to a vaccine, the metals are even more dangerous because the vaccines trigger immune reactions that can increase the permeability of the gastrointestinal tract and blood brain barrier. Mercury affects precisely those parts of the brain affected in autism—the cerebellum amygdala, and frontal cortex accounting for the myriad of symptoms in mercury poisoning and autism. When displayed, these symptoms superimpose on each other. The following are prevalent in both: social withdrawal, depression, lack of eye contact, delayed speech, increased sound and touch sensitivity, tremors, seizures, poor concentration, poor memory, repetitive behaviors, sleeping problems, self-injurious behaviors, rashes, anorexia, accelerated cell death in the central nervous system, and prevalence of autoimmune disorders.

The injection of mercury appears to affect only certain children, but I fear that we have underestimated the devastation by concentrating on the autistic children. We are measuring elevated levels of mercury in other children with milder difficulties like learning disabilities, ADHD, and Asperger's Syndrome. We do not have any idea what the scope of this problem is at this point. There are no safety standards for infants getting bolus doses of ethyl mercury. We cannot compare the effects of a bolus dose in an infant to a daily dose in an adult. There are no parameters for comparison.

We have simplified the problem in our practice. We test all developmentally delayed children for the presence of heavy metals. Hair is screened followed by a determination in urine after a challenge of an oral chelator, DMSA (2,3 Dimercaptosuccinic). It is rare that we find any child with a developmental problem who does not have increased levels of mercury in the urine after a chelator challenge. An interesting phenomenon is that we are finding many more lead intoxicated children than blood screen would indicate. Lead amplifies the toxicity of ethyl mercury in the brain.

We perform a number of tests on blood, urine, hair and stool in the autistic children. The abnormal findings that we see in autism involving the immune system, GI tract, and central nervous system are also seen in mercury poisoning. These include, but are not limited to changes in T lymphocytes, low levels of glutathione, low sulfate levels, IgA deficiency, and the presence of myelin basic protein antibodies in brain. The children are responding well to the use of oral chelators and supplements, which take out heavy metals. We are measuring levels in urine as we treat. The changes in the children are remarkable with each dose of a chelator. This treatment may take months to complete, but the chance for recovery is evident on a daily basis. Because mercury has such far-reaching effects in the destruction of function in many systems of the body, our treatment also involves nutritional repletion of cellular

chemistry, normalization of gastrointestinal bacterial balance, dietary programs, and restoration of liver detoxification systems.

Our medical training did not adequately prepare us for this challenge. We learned little about testing for heavy metals and even less about treating. The word chelation is not in the vocabulary of most physicians. The few physicians who are treating these children are inundated with them in their practices. The good news is that they are responding well to the chelation treatment. The changes in neurological functioning are remarkable with each day of treatment.

It is imperative that we stop giving heavy metals to children through vaccines when their bodies can least handle such an insult. We are seeking the link on a daily basis. The children are recovering steadily, but the treatment is expensive and tedious.

It would make more sense for us to eliminate the cause of the problem by deleting thimerosal from the vaccines now and by withdrawing current lots containing thimerosal from the pediatric offices and health units. We also need to channel funds for research into the clinical trials needed to explore the link between mercury and developmental problems in children.

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