Some of the Latest Research Linking Mercury To Autism

The danger of mercury from amalgam is well known to the manufacturers of this substance.

Really all one needs to do is to read their Material Safety Data Sheets

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B.E. Haley/Medical Veritas 2 (2005)
Mercury toxicity: Genetic susceptibility and synergistic effects
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Abstract

Mercury toxicity and intoxication (poisoning) are realities that every American needs to face. Both the Environmental Protection Agency and National Academy of Science state that between 8 to 10% of American women have mercury levels that would render any child they gave birth to neurological disorders. One of six children in the USA have a neurodevelopmental disorder according to the Centers for Disease Control and Prevention. Yet our dentistry and medicine continue to expose all patients to mercury. This article discusses the obvious sources of mercury exposures that can be easily prevented. It also points out that genetic susceptibility and exposures to other materials that synergistically enhance mercury and ethyl-mercury toxicity need to be evaluated, and that by their existence prevent the actual determination of a "safe level" of mercury exposure for all. The mercury sources we consider are from dentistry and from drugs, mainly vaccines, that, in today's world are not only unnecessary sources, but also sources that are being increasingly recognized as being significantly deleterious to the health of many.

From the Conlusion:

... If certain infants are more susceptible to mercury toxicity due to their inability to excrete mercury then it seems plausible that, since this is a genetic susceptibility, older individuals may suffer from the inability to excrete mercury also. Based on the ability of mercury to mimic many of the biochemical aberrancies found in AD brain and to produce aspects of the pathological diagnostic hallmarks of AD it seems plausible that AD is a disease related to mercury toxicity. The published decrease of mercury in the nail tissue of AD versus normal age-matched individuals seems to support this possibility.
Finally, the synergistic effects of other heavy metals, diet, antibiotics, etc. on mercury toxicity make it impossible to define a "safe level of mercury exposure." Therefore it is imperative that we try to eliminate all exposure to mercury; and removal from dentistry and medicines is most important and critical for human health.

Mutter J Naumann J Walach H Daschner F [Amalgam risk assessment with coverage of references up to 2005]Amalgam: Eine Risikobewertung unter Berucksichtigung der neuen Literatur bis 2005. Gesundheitswesen (2005 Mar) 67(3):204-16

Amalgam, which has been in use in dentistry for 150 years, consists of 50 % elemental mercury and a mixture of silver, tin, copper and zinc. Minute amounts of mercury vapour are released continuously from amalgam. Amalgam contributes

substantially to human mercury load. Mercury accumulates in some organs, particularly in the brain, where it can bind to protein more tightly than other heavy metals (e. g. lead, cadmium). Therefore, the elimination half time is assumed to be up to 1 - 18 years in the brain and bones. Mercury is assumed to be one of the most toxic non-radioactive elements. There are pointers to show that mercury vapour is more neurotoxic than methyl-mercury in fish. Review of recent literature suggests that mercury from dental amalgam may lead to nephrotoxicity, neurobehavioural changes, autoimmunity, oxidative stress, autism, skin and mucosa alterations or non-specific symptoms and complaints. The development of Alzheimer's disease or multiple sclerosis has also been linked to low- dose mercury exposure. There may be individual genetical or acquired susceptibilities for negative effects from dental amalgam. Mercury levels in the blood, urine or other biomarkers do not reflect the mercury load in critical organs. Some studies regarding dental amalgam reveal substantial methodical flaws. Removal of dental amalgam leads to permanent improvement of various chronic complaints in a relevant number of patients in various trials. **Summing up, available data suggests that dental amalgam is an unsuitable material for medical, occupational and ecological reasons**.

Geier DA Kern JK Geier MR A prospective study of prenatal mercury exposure from maternal dental amalgams and autism severity. Acta Neurobiol Exp (Wars) (2009) 69(2):189-97

Dental amalgams containing 50% mercury (Hg) have been used in dentistry for the last 150 years, and Hg exposure during key developmental periods was associated with autism spectrum disorders (ASDs). This study examined increased Hg exposure from maternal dental amalgams during pregnancy among 100 qualifying participants born between 1990-1999 and diagnosed with DSM-IV autism (severe) or ASD (mild). Logistic regression analysis (age, gender, race, and region of residency adjusted) by quintile of maternal dental amalgams during pregnancy revealed the ratio of autism:ASD (severe:mild) were about 1 (no effect) for < or =5 amalgams and increased for > or =6 amalgams. Subjects with > or =6 amalgams were 3.2-fold significantly more likely to be diagnosed with autism (severe) in comparison to ASD (mild) than subjects with < or =5 amalgams. Dental amalgam policies should consider Hg exposure in women before and during the child- bearing age and the possibility of subsequent fetal exposure and adverse outcomes.

Drum DA Are toxic biometals destroying your children's future? Biometals (2009 Oct) 22(5):697-700

Cadmium, arsenic, lead, and mercury have been linked to autism, attention deficit disorder, mental retardation and death of children. Mercury in thimerosal found in many vaccines and flu shots contributes significantly to these problems. Decomposition of the thimerosal can produce more toxic compounds, either methylethylmercury or diethylmercury, in the body. These compounds have a toxicity level similar to dimethylmercury. Within the human body, a mitochondrial disorder may release the more toxic form of mercury internally. Young children and pregnant women must minimize internal exposure to the vaccines and flu shots containing mercury.

Thomas Curtis J Chen Y Buck DJ Davis RL Chronic inorganic mercury exposure induces sex-specific changes in central TNFÎ± expression: importance in autism? Neurosci Lett (2011 Oct 17) 504(1):40-4

Mercury is neurotoxic and increasing evidence suggests that environmental exposure to mercury may contribute to neuropathologies including Alzheimer's disease and autism spectrum disorders. Mercury is known to disrupt immunocompetence in the periphery, however, little is known about the effects of

mercury on neuroimmune signaling. Mercury-induced effects on central immune function are potentially very important given that mercury exposure and neuroinflammation both are implicated in certain neuropathologies (i.e., autism). Furthermore, mounting evidence points to the involvement of glial activation in autism. Therefore, we utilized an in vivo model to assess the effects of mercury exposure on neuroimmune signaling. In prairie voles, 10 week mercury exposure (60ppm HgCl(2) in drinking water) resulted in a male-specific increase in TNFÎ± protein expression in the cerebellum and hippocampus. These findings are consistent with our previously reported male-specific mercury-induced deficits in social behavior and further support a role for heavy metals exposure in neuropathologies such as autism. Subsequent studies should further evaluate the mechanism of action and biological consequences of heavy metals exposure. Additionally, these observations highlight the potential of neuroimmune markers in male voles as biomarkers of environmental mercury toxicity.

Curtis JT Hood AN Chen Y Cobb GP Wallace DR Chronic metals ingestion by prairie voles produces sex-specific deficits in social behavior: an animal model of autism. Behav Brain Res (2010 Nov 12) 213(1):42-9

We examined the effects of chronic metals ingestion on social behavior in the normally highly social prairie vole to test the hypothesis that metals may interact with central dopamine systems to produce the social withdrawal characteristic of autism. Relative to water-treated controls, 10 weeks of chronic ingestion of either Hg(++) or Cd(++) via drinking water significantly reduced social contact by male voles when they were given a choice between isolation or contact with an unfamiliar same-sex conspecific. The effects of metals ingestion were specific to males: no effects of metals exposure were seen in females. Metals ingestion did not alter behavior of males allowed to choose between isolation or their familiar cage-mates, rather than strangers. We also examined the possibility that metals ingestion affects central dopamine functioning by testing the voles' locomotor responses to peripheral administration of amphetamine. As with the social behavior, we found a sex-specific effect of metals on amphetamine responses. Males that consumed Hg(++) did not increase their locomotor activity in response to amphetamine, whereas similarly treated females and males that ingested only water significantly increased their locomotor activities. Thus, an ecologically relevant stimulus, metals ingestion, produced two of the hallmark characteristics of autism - social avoidance and a male-oriented bias. These results suggest that metals exposure may contribute to the development of autism, possibly by interacting with central dopamine function, and support the use of prairie voles as a model organism in which to study autism.

Kern JK, Geier DA, Audhya T, King PG, Sykes LK, Geier MR. **Evidence of parallels between mercury intoxication and the brain pathology in autism.** Acta Neurobiol Exp (Wars). 2012;72(2):113-53.

Abstract; The purpose of this review is to examine the parallels between the effects mercury intoxication on the brain and the brain pathology found in autism spectrum disorder (ASD). This review finds evidence of many parallels between the two, including: (1) microtubule degeneration, specifically large, long-range axon degeneration with subsequent abortive axonal sprouting (short, thin axons); (2) dentritic overgrowth; (3) neuroinflammation; (4) microglial/astrocytic activation; (5) brain immune response activation; (6) elevated glial fibrillary acidic protein; (7) oxidative stress and lipid peroxidation; (8) decreased reduced glutathione levels and elevated oxidized glutathione; (9) mitochondrial dysfunction; (10) disruption in calcium homeostasis and signaling; (11) inhibition of glutamic acid decarboxylase (GAD) activity; (12) disruption of GABAergic and glutamatergic homeostasis; (13) inhibition of IGF-1 and methionine synthase activity; (14) impairment in

methylation; (15) vascular endothelial cell dysfunction and pathological changes of the blood vessels; (16) decreased cerebral/cerebellar blood flow; (17) increased amyloid precursor protein; (18) loss of granule and Purkinje neurons in the cerebellum; (19) increased pro-inflammatory cytokine levels in the brain (TNF-α, IFN-γ, IL-1β, IL-8); and (20) aberrant nuclear factor kappa-light-chain-enhancer of activated B cells (NF-kappaB). This review also discusses the ability of mercury to potentiate and work synergistically with other toxins and pathogens in a way that may contribute to the brain pathology in ASD. The evidence suggests that mercury may be either causal or contributory in the brain pathology in ASD, possibly working synergistically with other toxic compounds or pathogens to produce the brain pathology observed in those diagnosed with an ASD.

On 7 January 2003, the Superior Court in San Francisco
approved the warnings on dental amalgam mercury
that are required under California's Proposition 65

"Warning on dental amalgam,
used in many dental fillings,
causes exposure to mercury,
a chemical known to the state of California to cause
birth defects or other reproductive harm."

Swedish Government report of 2003 states:

"With reference to the fact that
mercury is a multipotent toxin
with effects on several levels of the
biochemical dynamics of the cell,
amalgam must be considered to be
an unsuitable material for dental restoration.

This is especially true since fully adequate
and less toxic alternatives are available."