

Facility Automation Management Engineering (FAME) Systems

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Thursday, 22 December 2005

To Whom It May Concern:

The review that follows this introductory letter is a critical assessment of the “Policy Statement on Mercury and Autism” expressed by Autism Speaks, which was electronically published at:

http://www.autismspeaks.org/press/mercury_autism_policy_statement.php

on a page that this reviewer visited as a part of this reviewer’s research in this area on Wednesday, 21 December 2005.

In general, to clearly differentiate between my assessment comments and those of Autism Speaks, this reviewer’s remarks are written in a “News Gothic MT” font with the various Autism Speaks’ printed statements indented and initially quoted in a “Times New Roman” font.

Should anyone find any factual misrepresentations in this reviewer’s remarks, then this reviewer requests that the factual error along with the scientifically sound and appropriate documents that prove your point to this reviewer so that this reviewer can learn from you, incorporate that new knowledge into his understanding, and, where indicated, appropriately correct this document.

Respectfully,

A handwritten signature in black ink that reads "Paul G. King". The signature is written in a cursive style with a large, stylized 'K'.

Paul G. King, PhD, MS, BA
Founder, **F.A.M.E. Systems**

Review of “Policy Statement on Mercury and Autism”

Autism Speaks begins by stating:

“Background

Mercury is a ubiquitous environmental toxin. Exposure to all three of its forms, organic, inorganic, or elemental, can have adverse effects on the developing nervous system. Medical science has known of potentially grave effects of high dose mercury exposure since the late 19th century. Only recently, however, have questions arisen regarding possible associations between mercury exposure and autism.”

While this reviewer agrees with the first statement, mercury poisons much more than the “developing nervous system.”

This is the case because it is a systemic (all systems) poison whose general toxicity has been established since, in the article’s words, “the late 19th century.”

Moreover, contrary to the policy’s statement, questions regarding the associations between mercury exposure and the mercury poisoning symptoms that are diagnosed as (called/labeled) the causeless disorder “autism” have been raised since the early 1900s when Calomel (84.98% inorganic mercury) added to teething powders for babies was the agent used to mercury poison American babies whose parents used the product.

Like “autism,” the medical profession chose to diagnose the resultant mercury poisoning symptoms in those babies clinically poisoned by Calomel as “Pink Disease” or “Acrodynia” and not as the mercury poisoning that it so obviously was.

“Coincidentally,” as the public outcry in the U.S. grew over Pink Disease in the 1930s, the pharmaceutical industry pulled the Calomel-laced teething powders from the market and substituted the much more “effective” (at poisoning those administered these substances at much lower levels) organic mercury compounds into antiseptics, serums, vaccines, and some other drugs.

In no case were the uses of any of these mercury compounds rigorously proven to be either safe or effective.

In the late 1940s and early 1950s, the seminal studies proving the non-suitability for these organic mercury compounds for their intended uses (as bactericides and preservatives) were published.^{1, 2}

Since the level of mercury exposure in fish and potable water has *not* increased significantly in the United States over the last half century, the chief sources for *unnecessary* mercury exposure for most Americans are:

¹ Morton H E, North L L and Engley F D. “THE BACTERIOSTATIC AND BACTERIOCIDAL ACTIONS OF SOME MERCURIAL COMPOUNDS ON HEMOLYTIC STREPTOCOCCI In Vivo and in Vitro Studies,” JAMA 136(1): 36 – 41; 1948.

² a. Engley F D. “EVALUATION OF MERCURIAL COMPOUNDS AS ANTISEPTICS.” Annals of the New York Acad Sci 53: 197 – 206; 1950.
b. MERCURIALS AS DISINFECTANTS Evaluation of mercurial antimicrobial action and comparative toxicity for skin tissue cells, 1956, presented at the annual Chemical Specialties Manufacturing Association Meeting.

- ❖ The elemental and inorganic mercury emitted by amalgam dental fillings (much of which is “complexed” by the digestive system and excreted in the feces [probably at least 80 %]) and
- ❖ The organic mercury (mostly Thimerosal [56.7 % “ethylmercury”]) in vaccines, serums, and other organic-mercury-containing drugs that bypass the body’s primary exposure barriers to mercury intoxication because they are injected rather than being ingested.

The policy background statement continues with:

“The debate over mercury and autism escalated quickly because of thimerosal, a synthetic form of organic mercury used as a preservative and antimicrobial agent in vaccines. Thimerosal has been an ingredient in vaccines and biologicals since the 1930s but, with increases in recommended childhood immunization doses, by the 1990s it became possible for a six month old infant to have been exposed to a cumulative dose of organic mercury that exceeded certain limits set by government health agencies. This, paired with the immense growth in numbers of children diagnosed with autism in the 1990s prompted many in and out of the autism community to wonder if there could be a connection.”

In contrast to the glib language concerning the nature of Thimerosal (56.7% “ethylmercury” by weight), the reality is that Thimerosal is a cumulative systemic highly poisonous organic mercury compound with proven human lethality (death) to infants at low dosing levels.

These infant deaths include those 10 of 13 babies dying in 1969 through 1975 after receiving repeated topical exposure to small amounts of Thimerosal (Merthiolate) tinctures (containing 0.1% levels of Thimerosal) where the autopsied brain levels of mercury were as low as 0.000065% (0.65 ppm).³

In addition, it has been reported by those involved in suing for the harm caused to their child that an internal 1971 Eli Lilly document (discovered in litigation but currently sealed) showed tissue toxicity at Thimerosal levels of 1ppm (1/100th the level in most “Thimerosal Preserved” vaccines, including the current preserved influenza vaccines).

Thus, *contrary to the representations made about the background*, Eli Lilly apparently found evidence of animal mercury poisoning by Thimerosal when 1-ppm solutions were used in toxicity testing in the late 1960s and early 1970s.

In addition, multiple deaths and significant mercury toxicity were observed in 13 infants (10 of which died) who were repeatedly treated with small amounts of a 0.1% topical Thiomersal (Thimerosal) tincture from 1969 to 1975.

Given the observed toxicity after injections of 1-ppm Thimerosal solutions, the industry was aware of its mammalian toxicity at the 1-ppm level in the 1970s.

Moreover, as reported previously, studies ^{1,2} had demonstrated Thimerosal toxicity at tissue levels below 0.2 ppm Thimerosal (0.11 ppm “ethylmercury”) before 1950.

³ Fagan D g, Pritchard J S, Clarkson T W and Greenwood MR. “Organ mercury levels in infants with omphaloceles treated with organic mercurial antiseptics.” Arch Disease in Childhood, 52: 962 – 964; 1977.

Based on the preceding, Autism Speaks needs to understand that a single “Thimerosal Preserved” vaccine dose (25 to 50 micrograms of Thimerosal) mercury poisons all babies, children, adolescents and adults to some degree.

Then, Autism Speaks should revise this part of their background statement to recognize that Thimerosal toxicity (mercury poisoning) to human tissues was established at levels below 0.2 ppm by no later than the 1950.

Next, the policy statement, under a “**Practice**” heading, begins by stating:

“Practice

The body of evidence gathered through epidemiologic research to date does not currently support a causal relationship between thimerosal in childhood vaccines and autism risk. However, it is very difficult for even the best epidemiologic study to rule out the existence of small susceptible subgroups of children with autism in whom thimerosal exposure may have played a causal role. Unfortunately, there are currently no means of identifying individuals with increased mercury susceptibility nor are there proven methods allowing researchers to separate individuals with autism into groups more or less likely to have different sets of causes.

Factually, *with respect to epidemiological studies*, when all of the non-comparable⁴ epidemiological studies are excluded from consideration, the U.S population epidemiological studies published in recognized peer-reviewed journals, including the “Verstraeten” study do support a statistically probable link between the level of Thimerosal in childhood vaccines and not only “autism” but also other “neurodevelopmental” disorders, which are, in reality, based on symptoms that are also recognized as some of the symptoms of sub-acute mercury poisoning.

Moreover, the magnitude of the “odds ratios” for the Thimerosal exposure for some of the other “neurodevelopmental” disorders exceeds 2 at the 95% “confidence level,” the current legal threshold – not the scientific one – recognized for a court proceeding.

Turning to the statement, “Unfortunately, there are currently no means of identifying individuals with increased mercury susceptibility,” this reviewer finds that the statement is *not* supported by the scientific evidence.

In addition to increased levels of tissue-retained heavy metals (e.g., lead, mercury, arsenic, and manganese) and an abnormal heavy-metal excretion patterns, those susceptible to “mercury poisoning” or have been “mercury poisoned” have low levels of certain key biological compounds (e.g., glutathione and its precursor compounds, and APO-E4) and higher “porphyrins” excretion levels than those who are more resistant to being mercury poisoned by a given dosing regimen.

As to Autism Speaks’ “proven methods allowing researchers to separate individuals with autism into groups more or less likely to have different sets of causes,” this reviewer notes that

⁴ All epidemiological studies that have studied a population in a country where the amount of Thimerosal-containing vaccine exposure and/or the timing of the Thimerosal-containing vaccinations differ significantly from the U.S. administration schedule’s Thimerosal-containing vaccine administrations should be excluded from consideration. Thus, scientifically, the epidemiological studies on Danish, Swedish, or UK populations cannot validly be used to address U.S. population studies.

the body of scientific evidence on mercury poisoning indicates that the specific systems and subsystems poisoned depend on: a) which systems or subsystems were growing most rapidly when the Thimerosal-containing vaccines were dosed, b) the level of Thimerosal dosed, the nature of the vaccines administered during the same time period the Thimerosal is dosed, and dietary factors.

Moreover, since: a) the underlying disease for the “causeless” disorder “autism” is mercury poisoning and b) this mercury poisoning affects more than the central nervous system (CNS), medicine needs to take a holistic approach to:

- ❖ Diagnosing the systems (e.g., CNS, immune, cardiovascular, endocrine, excretory, digestive, and dermal) that have been mercury poisoned,
- ❖ Determining the degree of poisoning of those systems and sub-systems, and
- ❖ Grouping of the like mercury poisoning cases together.

When the preceding approaches are used, the case study evidence is that the implementation of the appropriate holistic therapies, *including mercury detox with supportive supplements*, for those diagnosed with the causeless “autism” disorder does improve the cognitive performance of those who have been mercury poisoned to the point that many lose their “autism” diagnosis.

Further, biological marker testing on the parents of some of those originally diagnosed with DSM “autism,” has shown that they also have altered biomarker levels and reduced excretion efficiencies for heavy metals.

Hopefully, Autism Speaks will review the rapidly developing progress in:

- ❖ Identifying the diagnostic markers that spot those that are most susceptible to mercury poisoning and
- ❖ Holistically diagnosing and treating those identified as being clinically mercury poisoned as well as those, who, for whatever reason, have a reduced heavy-metal detoxification capacity.

and appropriately change their “Policy Statement on Mercury and Vaccines” to a “Policy Statement on Thimerosal (and other unnecessary mercury poisoning sources in medicine and dentistry)⁵ and Clinical Mercury Poisoning (and other mercury-related heavy-metal poisonings).

Provided all mercury exposures from medicine, including vaccines, other drugs, and medical treatment procedures, and dentistry are considered as “environmental exposures” and recognized as unnecessary exposures, this reviewer sees no significant problems in the following Autism Speaks statements:

“The thimerosal question has highlighted a number of points whose further consideration should significantly advance autism research. First, although genes are believed to play a major role in autism, more attention needs to be paid to mechanisms where genes exert their influence by altering susceptibility to environmental exposures and mechanisms by

⁵ Since there are other compounds that can be, and are used, as preservatives in vaccines and other medical products (e.g., 2-phenoxyethanol) that are *not* bioaccumulative systemic poisons in humans, all preservative/sterilizing uses of Thimerosal and like organic mercury compounds are unnecessary in medicine and, since there are alternatives to mercury amalgam fillings today, the use of mercury in dentistry is also unnecessary. In both medicine and dentistry, the use of mercury unnecessarily mercury poisons all to some degree and, *because there are safer alternatives*, should be stopped immediately.

which environmental exposures may alter gene expression. Second, there is a great need, when studying environmental exposures, to find ways of identifying highly susceptible individuals.”

However, this reviewer would hope that Autism Speaks would broaden the scope of their research horizon to significantly advance research into mercury poisoning and heavy-metal intoxication/detoxification since these are major areas of research needed for mercury poisoning, which is the major factor in the underlying symptoms sets used to diagnose the causeless neurodevelopmental disorders, syndromes, and diseases including “autism.”

Moreover, this reviewer must respectfully disagree with Autism Speaks’:

“And, third, because autism is a complex condition possibly having multiple causes, researchers need to find reliable ways to distinguish autism subgroups with distinct etiologies,”

because, after half a century of “trying,” the healthcare establishment has failed to find any cause for the disorder “autism.”

However, scientific researchers have repeatedly found that mercury poisoning causes the clinical neurological symptoms that are used to diagnose a case of DSM “autism” as well as the many of the other non-neurological symptoms that many who are diagnosed (labeled) with DSM “autism” are known to exhibit.

Thus, the underlying disease is mercury poisoning related to mercury exposure and the exposed person’s ability to resist heavy-metal poisoning in general and mercury poisoning in specific.

Furthermore, one of the human systems that mercury exposure poisons is the heavy-metals detoxification system.

In addition:

- ❖ In *in vivo* experiments involving growing neurons, inorganic mercury has been found to be several orders of magnitude more toxic to growing brain cells than lead and the other potentially metal ions (manganese, cadmium, and aluminum) tested,
- ❖ Bacteria in the gut convert some of the metallic and inorganic mercury ingested into organic mercury compounds (typically, methylmercurihydroxide and related mercurials), and
- ❖ Many organic alkyl mercury compounds, including methylmercurihydroxide and ethylmercurihydroxide (the initial hydrolysis product when Thimerosal is injected) have been shown to cross the placental and brain barriers and, in the brain be converted into “inorganic mercury” species that tend to bioaccumulate.

Based on the preceding factual realities, it should be clear to all that medicine and dentistry should stop all unnecessary human exposures to any form of mercury.

After the sections titled “**Background**” and “**Practice**,” Autism Speaks asserts their “policy” as follows:

“**Policy**

Autism Speaks plans to strongly support a multidisciplinary research agenda on environmental exposures and autism. We believe that projects acknowledging the role of gene-environment interaction and incorporating markers of exposure susceptibility and etiologic heterogeneity will be the most productive in the long-term. Given present knowledge, there is a fairly broad array of neurotoxic environmental exposures worthy of further study but, moving forward, the type and timing of exposures under investigation should continue to comport with emerging developments in autism neurobiology.”

Hopefully, *after considering this reviewer’s remarks*, Autism Speaks will appropriately revise its stated “**Policy**” to:

- ❖ Reflect the state of the knowledge that this reviewer has addressed *based on his current understanding of the body of established scientific evidence*,
- ❖ Change its basis paradigm to “mercury in any form contributes to some level of mercury poisoning in all,” and
- ❖ Recognize that mercury poisoning is the major cause of “autism” and other related neurodevelopmental disorders and syndromes, which are diagnosed by symptoms that are common in clinical sub-lethal mercury poisoning cases.

Finally, Autism speaks provides the following “**References**”:

“References:

Goldman LR. Technical Report: Mercury in the Environment. Pediatrics 108(1); 197-205:2001

Institute of Medicine. Immunization Safety Review * Vaccines and Autism. National Academies Press, Washington DC, 2004.

National Research Council. Toxicological Effects of Methylmercury. Washington, DC: National Academies Press, 2000.

Lawler CP, Croen LA, Grether JK, Van de Water J. Identifying Environmental Contributions to Autism: Provocative Clues and False Leads. Ment Retard Dev Disabil Res Rev. 10(4):292-302; 2004”

Rather than list all the references on which this reviewer’s understanding of the fact that mercury poisoning is the major cause of the medical disorder labeled DSM “autism,” this reviewer suggests that the reader visit the web page:

<http://www.mercury-freedrugs.org/docs/>

and periodically check the pertinent references listed in each of the articles posted there as this page is continually being updated.