DENTAL MERCURY INTRODUCED
TO U.S. CONGRESS

On 18 July 2000, the Government Reform
Committee of the United States House of
Representatives conducted a hearing entitled
"Mercury in Medicine - Are We Taking
Unnecessary Risks?"

Although the major thrust of the committee has
been the use of mercury (thimerosal) in
vaccines, an introduction to the subject of
dental mercury was heard. A brief presentation
was given by H. Vasken Aposhian, Ph.D. of the
University of Arizona. Dr. Aposhian, while not
minimizing concerns over the use of thimerosal
in vaccines, presented documentation that
dental amalgam is the largest contributor of
mercury to the body burden of non-
occupationally exposed individuals.

The Chairman of the Committee, Republican
Dan Burton of Indiana, made several important
points in an Opening Statement. Representative Burton stated: "We all know
that mercury is a toxic substance. Long term
exposure to low levels of mercury has been
linked to mental retardation, cerebral palsy,
and central nervous system disorders. We
assume that the FDA would protect our
children from exposure to any level of mercury
through drugs. But that hasn’t been the case.
The FDA recently acknowledged that in the
first six months of life children get more
mercury than is considered safe by the
EPA......My grandson received vaccines for nine different diseases in one day. He may have been exposed to 62.5 micrograms of mercury in one day through his vaccines. According to his weight, the maximum safe level of mercury he should be exposed to in one day is 1.51 micrograms. This is forty-one times the amount at which harm can be caused. The FDA continues to allow mercury-containing vaccines to remain on the market. Today, over eight thousand children in America may be given a toxic dose of mercury in their vaccines.”

Chairman Burton went on to say: “We have also been contacted by many individuals who have concerns about mercury in dental amalgams. While this is not the focus of today’s hearing, it certainly warrants discussion as well.”

Chairman Burton then related the FDA activities on mercury, pointing out that thimerosal had originally been labeled GRAS ("Generally Recognized As Safe"). However, when FDA conducted their OTC (Over The Counter) drug review in 1998 they changed their minds on mercury compounds being considered GRAS. On their website, FDA states "lead, cadmium, and mercury are examples of elements that are toxic when present at relatively low levels." Chairman Burton concluded: "How is it that mercury is not safe for food additives and Over the Counter drug products, but it is safe in our vaccines and dental amalgams?"

A number of individuals testified against the use of mercury in vaccines. Further, written testimony on vaccine and amalgam mercury were placed into the Congressional Record of the Committee Hearing. Representatives of FDA and CDC (Center for Disease Control and Prevention) firmly stood their ground, with the argument (repeated at every approach from the Committee) that there was not sufficient data available to discontinue the use of thimerosal in vaccines (Does that sound familiar?).

Will the Committee continue to investigate the use of mercury in dental amalgam? That remains to be seen, and depends on the conviction of the members of the Committee. The presentation by Dr. Aposhian, and the written testimony placed on record, are merely the opening. However, the very fact that the topic has been introduced to Congress is very exciting and presents great potential. It is extremely important that those providing information to the Committee do so in a rational manner, without appearing too radical. This opening is much too valuable to risk alienation of the committee and its members.

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U. S. SENATE

HEARS ANTI-FLUORIDE TESTIMONY

Dr. J. William Hirzy, the Vice President of EPA’s Scientist Union testified against fluoridation to the Subcommittee on Wildlife, Fisheries and Drinking Water of the United States Senate on 29 June 2000.

The EPA union includes toxicologists, biologists, chemists, engineers, lawyers and others defined by law as professionals.

Dr. Hirzy provided the Senate Committee with documentation connecting fluoride exposure to adverse effects on the central nervous system and to bone cancer. He also pointed out a 1997 study by the National Institute of Dental Research finding that 66% of American children in fluoridated communities show visible signs of fluoride toxicity, and provided research references linking fluoride exposure to hyperactivity-attention deficit disorder, autism, and bone fractures in young athletes and military personnel. These are conditions found to be on the rise in America.

Dr. Hirzy also cited three landmark court cases against fluoridation and provided documents that many countries in Europe and elsewhere
have reduced decay rates similar to that in the U.S.A. even though they do not permit water fluoridation. He called for hearings by a Joint Select Committee of Congress that should explore, at a minimum, the following points:
1) Excessive and un-controlled fluoride exposures.
2) Altered findings of a cancer bioassay.
3) The results and implications of recent brain effects research.
4) The “protected pollutant” status of fluoride within EPA.
6) The results of a 50 year experiment on fluoridation in two New York communities.
7) The findings of fact in three landmark lawsuits since 1978.
8) The findings and implications of recent research linking the predominant fluoridation chemical with elevated blood-lead levels in children with anti-social behavior.
9) Changing views among dental researchers on the efficacy of water fluoridation.

Dr. Hirzy concluded by calling for a national moratorium on water fluoridation while the issues cited are investigated by conscientious scientific efforts.

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CALIFORNIA DENTAL BOARD INSTRUCTS DENTISTS TO WARN PATIENTS ON AMALGAM MERCURY

In a landmark “Quarterly News & Action Report” of the Dental Board of California, dated 30 June 2000, President Roger Simonian, DDS sent a strong message to the dentists of California.
The message was a result of a petition by attorneys Charles Brown and James Turner of Consumers For Dental Choice presented to the California Board in December of 1999.
California dentists were advised that they should:

1) Discuss with their patients the different restorative materials.
2) Inform their patients of the percentage of mercury in amalgam and that mercury and other substances used in dental offices are designated hazardous under Proposition 65.
3) Discuss with their patients potential sensitivity, allergic or adverse reactions to mercury, including reproductive toxicity.
The following statement in the President’s Message is also of vital importance to mercury-free dentists:

“The Board agreed to publicly clarify that it has no position either pro or con on the various dental restorative materials. The dentist is free to decide what type of restorative materials he/she may use or not use in the practice. However, the Dental Board of California encourages dentists to discuss the choice of restorative materials with their patients.”

This statement would appear to open the door of safety for mercury-free dentists in California, as well as provide California dental patients with the access to vital information. Dentists still should not tell patients that their mercury fillings are causing any particular medical health problem, nor should they recommend removal of mercury fillings for the purpose of curing systemic health problems. Mercury-free dentists should be careful not to abuse their new found freedom to practice in the manner that they feel best for their patients.
However, all patients in California should now be informed by their dentist that amalgam fillings are 43-50% mercury, that the mercury continuously escapes from the amalgam and enters the body tissues, and that mercury is designated “Hazardous” under California Law (Proposition 65).
This should be enough for most dental patients, few of whom would willingly hold several leaking mercury thermometers in their mouths.
24 hours a day, 7 days a week. Now that the State of California has issued these instructions to the dentists in their state, the question arises as to the legal position of the dental boards in the other states. Unless a state has laws specifically forbidding "informed consent" for dental patients, it would seem that California has set a precedent that must apply to all states. Actually, informed consent for patients is a right uniformly recognized. Legally, can a state dental board now have a policy forbidding dentists from discussing the potential dangers of continuous exposure to mercury from amalgam dental fillings? Moreover, are all state dental boards now under obligation to advise all dentists in their state that patients must be informed of amalgam mercury exposure? Can a dental board argue that mercury is a hazardous substance in California, but not in their state? These questions, and others, will certainly now be brought to the attention of the dental boards in all states. It seems likely that the era of dental board persecution of mercury-free dentists is coming to a close. Beyond that, it is unlikely that many dental patients, once properly informed, will accept a continuous exposure to mercury. The death knell of mercury amalgam fillings may have been sounded.

Many thanks to Charles Brown and James Turner of Consumers For Dental Choice. [Those wishing to contribute to them, may send checks to: 1400 Sixteenth St., NW, #330, Washington, DC 20036.]

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MARYLAND JUDGE ENJOINS DENTAL BOARD!

On 27 July 2000, a Circuit Judge for the City of Baltimore issued an injunction against the Maryland State Board of Dental Examiners and its members individually!
The plaintiffs - Dental Amalgam Mercury Syndrome (DAMS), a Maryland dentist, and several public citizens - had filed for the injunction on 15 December 1999. The suit was to block a policy of the Maryland Board gagging dentists from discussing the risks of amalgam with their patients. Specifically, the suit asked the judge to halt the Maryland Board from enforcing policies regarding: "dentists' removal of amalgam from a filled cavity."

Baltimore Judge Stuart R. Berger issued the injunction because the Board had adopted the policy without public hearing, thereby violating the Maryland Open Meetings law. The plaintiffs were represented by attorneys Charles Brown and James Turner of the Washington, DC law firm Swankin & Turner. Here again, a debt of gratitude is owed to these attorneys.

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NATIONAL ACADEMY OF SCIENCES REPORTS ON METHYL MERCURY

A panel of scientists for the National Research Council of the National Academy of Sciences has released its report on methyl mercury, culminating their 18-month review. The panel endorsed strict safety levels adopted by the Environmental Protection Agency (EPA) of 0.1 micrograms of mercury per kilogram of body weight per day. This standard amounts to 7.0 micrograms of mercury for a 154 pound adult, and much less for children, of course. For a 77 pound child, for example, the maximum safe mercury exposure would be 3.5 micrograms per day. Notably, even organized dentistry acknowledges a daily mercury exposure level of 1.5 micrograms per day in patients with an average number of amalgam fillings. Mercury toxicologists have concluded that amalgam fillings contribute an average of 10 micrograms of mercury per day, which is above the EPA standard.
The Panel thoroughly reviewed the literature on human exposure to methyl mercury, especially
two recent studies conducted, which reported conflicting findings. One study, conducted in the Seychelles Islands, did not find neurological deficits in children related to the prenatal methyl mercury exposure of the mothers. This study was favored by regulators seeking to raise the level of standards for safe exposure to mercury, such as the Food and Drug Administration (FDA).

The other study, conducted in the Faroe Islands, did find a correlation between neurological deficits and the prenatal methyl mercury exposure. These findings were supported by another recent study, conducted in New Zealand.

Based upon the duplication of findings and the comparative methodology between the Seychelles and Faroe studies, the Panel concluded that the Faroe and New Zealand studies were more reliable, thereby supporting the more rigid mercury exposure standard of the EPA.

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**SCIENCE**

*Occupational Exposure to Metallic Mercury in the Dentist’s Office of a Primary Health Care Clinic in the City of Sao Paulo.*

Glina, DM; Satut, BT, Andrade, EM.


ABSTRACT: This paper discusses occupational exposure to metallic mercury among dentists and dental assistants, focusing on biological evaluation, effects on health, and environmental evaluation. Methods included visits to the clinic, hazard maps, urinary and environmental mercury measurements, and evaluation of health status.

Results for the environment and work processes showed that mercury vapor concentrations impregnating surfaces and piping varied from 0.001 to 0.051 mg/m3 in air; occupational exposure with 62.5% of health workers having HgU ranging from 10 to 49 mg/l and 37.5% having HgU below 10 mg/l in 1994, while workers’ previous measures (from 1992) were lower in every single case; an outflow of mercury and inadequate amalgamation due to a faulty amalgamator, the need for using a piece of chamois to obtain a homogeneous amalgam and remove excess mercury; the existence of combined hazards in the environment, and that all workers had been exposed since 1992.

Results for workers’ health showed a prevalence of symptoms from lesions to the central nervous system; central nervous system signs; and that mild-to-moderate chronic poisoning was found in 62% of workers.

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*M Mercury Distribution in the Squirrel Monkey Retina After In Utero Exposure to Mercury Vapor.*

Warfvinge, K; Bruun, A.


ABSTRACT: Pregnant squirrel monkeys were exposed to mercury vapor during approximately 2/3 of a pregnancy, at a concentration of 0.5 or 1 mg Hg/m3 air for 4 or 7h a day, 5 days a week. The offspring were sacrificed at different ages (gestational week 16 to 5 years). The eyes were enucleated and horizontal sections of the retina, comprising the optic disc and the fovea, were processed for autometallographic (AMG) silver enhancement. The AMG mercury distribution was mapped using light and epi-polarized microscopy.

In young offspring (16-week-old fetus to 3 days old), mercury was detected mainly in the optic nerve, retinal pigment epithelium, inner plexiform layer, vessel walls, and ganglion cells. Three and a half months later, the amount of visualized mercury had decreased in all areas except for the retinal pigment epithelium. In adult monkeys that had survived for 2 to 5 years, only a faint AMG staining was seen in the retinal pigment epithelium, the optic nerve,
and in some vessel walls. In conclusion, in offspring sacrificed in utero or shortly after birth, the structures accumulating mercury were the same as those which accumulate mercury following direct exposure through the lungs, as reported previously (K. Warfinge and A. Bruun, 1996, Toxicology 107, 189-200), although the amount of AMG staining was less in transplacental animals. This demonstrates that inorganic mercury penetrates the blood-retina barrier. In monkeys that had survived 3 to 5 years, only tiny amounts of mercury were detected, which is in contrast to findings from direct exposure, in which large amounts were still found 3 years after exposure. This may suggest that the elimination process in the retina is more efficient in young animals, but a possible adverse effect of mercury on retinal development cannot be ruled out.

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Neuron Loss in Cerebellar Cortex of Rats Exposed to Mercury Vapor: A Stereological Study.
Sorensen, FW; Larsen, JO; Eide, R; Schionning, JD.
ABSTRACT: Mercury vapor produces tremor in humans and experimental animals. We have previously reported that mercury vapor intoxication over an 8-week period induces only subtle changes in dorsal root ganglia and nerve roots in rats.
In the present study we have carried out stereological analyses of the cerebellum of the same rats, and demonstrated significant losses of Purkinje cells (12.7%, 2P=0.005) and granule cells (15.6%, 2P=0.016). All sizes of Purkinje cells were lost with an equal probability, i.e. there were no indications of any preferential loss of any subpopulation of the neurons. The volume of the granular cell layer was significantly reduced (18.9%, 2P=0.015), whereas the volumes of the molecular layer and the white matter were unchanged.
Previous stereological studies have demonstrated that methyl mercury intoxication primarily induces degeneration in the peripheral nervous system, while sparing the cerebellum. We therefore suggest that metallic mercury vapor and methyl mercury have different toxicological profiles in rats, where metallic mercury vapor mainly affects the central nervous system and methyl mercury mainly affects the peripheral nervous system.

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A Cluster of Pediatric Metallic Mercury Exposure Cases Treated With Meso-2,3-Dimercaptosuccinic Acid (DMSA).
Forman, J; Moline, J; Cernichari, E; Sayegh, S; Torres, JC; Landrigan, MM; Adel, HN; Landrigan, PJ; Hudson, J.
ABSTRACT: Nine children and their mother were exposed to vapors of metallic mercury. The source of the exposure appears to have been a 6-oz vial of mercury taken from a neighbor’s home. The neighbor reportedly operated a business preparing mercury-filled amulets for practitioners of the Afro-Caribbean religion Santeria.
At diagnosis, urinary mercury levels in the children ranged from 61 to 1,213 μg/g creatinine, with a geometric mean of 214.3 μg/g creatinine. All of the children were asymptomatic. To prevent development of neurotoxicity, we treated the children with oral meso-2,3-dimercaptosuccinic acid (DMSA). During chelation, the geometric mean urine level rose initially by 268% to 573.2 μg/g creatinine (p< 0.0005). At the 6-week follow-up examination after treatment, the geometric mean urine mercury level had fallen to 102.2 μg/g creatinine, which was 17.8% of the geometric mean level observed during treatment.
(p<0.0005) and 47.6% of the original baseline level (p<0.001).
Thus, oral chelation with DMSA produced a significant mercury diuresis in these children.
We observed no adverse side effects of treatment. DMSA appears to be an effective and safe chelating agent for treatment of pediatric overexposure to metallic mercury.

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*Mercu*y-Induced Nummular Dermatitis.*
Adachi, A; Horikawa, T; Takashima, T; Ichihashi, M.
ABSTRACT: We report 2 cases of relapsing nummular dermatitis according to mercury sensitivity, which was confirmed by patch testing.
Removal of the amalgam from dental metal alloys markedly improved their skin eruptions.
One of the patients, a dentist, experienced exacerbation of the eruptions on his lower legs after handling dental amalgam.
Hypersensitivity to amalgam such as metals is possibly involved in, at least in some patients, the pathogenesis of nummular dermatitis.

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*Mercu*y Intolerance in Relation to Superoxide Dismutase, Glutathione Peroxidase, Catalase, and the Nitroblue Tetrazolium Responses.
Marcusson, JA; Carlmark, B; Jarstrand, C.
ABSTRACT: Through percutaneous provocation with metallic mercury and phenyl mercuric acetate in patients stating the presence of subjective psychosomatic symptoms following dental amalgam treatment, it has been possible to categorize and score two extreme groups of patients, mercury-intolerant and mercury-tolerant patients reacting and not reacting, respectively, to low doses of mercury.
The intolerant patient had a high psychosomatic score and the tolerant patients had a low or null score when exposed to low doses of the two mercury compounds.
Determination of the scavenger enzymes superoxide dismutase, glutathione peroxidase, and catalase showed no significant differences between the mercury-intolerant and the mercury-tolerant patients and the controls. The activity of superoxide dismutase and the quantitative psychosomatic score elicited by either metallic mercury or phenyl mercuric acetate showed a positive correlation.
On the other hand, analyses of the psychosomatic score and the areas under the curves of the nitroblue tetrazolium test response showed negative correlations.
The results indicate that the oxidative metabolism and, in particular, superoxide dismutase may be perturbed in mercury-intolerant patients.

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A Small Dose of Ethanol Increases the Exhalation of Mercury in Low-Level-Exposed Humans.
Sallsten, G; Kreku, S; Unosson, H.
ABSTRACT: Inorganic mercury is mainly eliminated by urinary and fecal excretion, but it is also eliminated by exhalation and sweat. There are only a few reports on exhalation of mercury in humans. In volunteers with short-term mercury exposure, an increased exhalation of mercury was found after alcohol intake.
The aim of this study was to determine mercury in end-exhaled air and the influence of ethanol on mercury exhalation in subjects with long-term mercury exposure from diet, amalgam fillings, or the work environment. Fourteen subjects, with different grades of mercury exposure, were given 0.2 g ethanol/kg body weight. Measurements of mercury in end-exhaled air were performed before and after alcohol intake.
Mercury in end-exhaled air could be detected in all subjects. In 10 individuals without amalgam
fillings the mercury concentration was 3 to 12 pg/L. A marked increase, in general about fivefold, in mercury concentrations in end-exhaled air was seen in all subjects 30 min after intake of alcohol, regardless of the level of mercury exposure. Higher ethanol doses resulted in higher mercury levels in end-exhaled air and longer time periods before a return to background levels.

An increase was seen even after an ethanol dose of only 0.1 g ethanol/kg body weight (about 0.08 L wine). The decrease in exhaled mercury at higher alcohol doses followed approximately zero-order kinetics and probably reflects the elimination of ethanol in tissues.

In conclusion, low levels of mercury can be detected in end-exhaled air also in individuals without amalgam fillings. About a fivefold increase was seen 30 min after alcohol intake, and the relative increase seemed to be independent of the body burden of mercury. Exhalation of mercury represents only a small percentage of the total elimination of mercury.

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FORUM

IAOMT 2000 ANNUAL MEETING

DATE: Friday-Saturday, 22-23 September, 2000.
SITE: Austin, Texas.
HOTEL: Radisson Hotel & Suites; 111 Cesar Chavez Street, Austin, TX. T: (512) 478-9611, (800) 333-3333; F: (512) 478-3227. Specify IAOMT. Room rate: $119/night (US); s/d.
MEETING REGISTRATION: IAOMT, P.O. Box 608531, Orlando, FL. 32860-8531. T: (407) 298-2450; F: (407) 298-3075. email: mziff@iaomt.org. Registration (US$): Members: $495, non-members: $595; additional persons with registrant: $175. Includes continental breakfast and lunch on Friday and Saturday, and Saturday evening banquet.
WELCOME RECEPTION (Cash bar):

Thursday, 21 September 2000, 7:30pm.
PROGRAM: Friday morning Clinical Theme: "Mercy Anti-Toxic Program."
Phillip Sukel, DDS: IAOMT Standards of Care.
J. C. Pendergrass, PhD: ALT Testing To Determine Systemic Effects.
Pamela Floener, PT, RMA,CT: Do's and Don'ts for the Dentist and Physician.
Friday Afternoon Speakers:
Walter J. Clifford, MS: Material Reactivity Testing.
Richard J. Charin, DMD: Understanding Dental Mercury.
Saturday Speakers:
Boyd E. Haley, PhD: Mercury Pathophysiology.
H. Vasken Aposhian, PhD: Tucson Dental Study Summary on DMPS.
Janet D. Sherman, MD: Radioactive Strontium 90 in Baby Teeth.
Murray J. Vimy, DMD: Why and How to Practice Mercury Free Dentistry.
“Sam” Queen, PhD: The Forensic Approach to Anti-Toxic Therapy.

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The 23rd Annual National Dental Seminar in Homeopathy

SITE: Schaumburg, Illinois.
REGISTRATION: The National Dental Seminar in Homeopathy. P.O. Box 123, Marengo, IL 60152-0123. T: 815-568-5222; F: 815-568-7422. Fee (before 1 Sept): Basic: $525 ($425); Advanced: $500 ($400); Additional: $250 ($175).
COURSE COORDINATORS: Craig A. Zunka, DDS; Phil Parsons, DDS; Daniel Dieska, DDS; Jack Belitz, DDS; Charles Martinez, DDS; Harris M. Kimbrough, DDS.