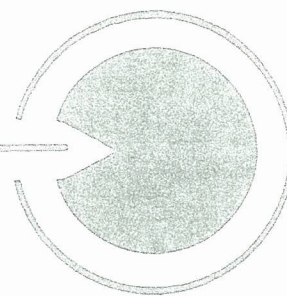


# BIO-PROBE

## NEWSLETTER



Volume 8

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Issue 1

### The Truth About Dental Mercury Implants

Sam Ziff & Michael F. Ziff, D.D.S.

It is apparent that more and more people in the world are becoming aware of the fact that they may be walking around with a "Toxic Time Bomb" in their mouths. We estimate that in the latter part of 1990 alone, 40 million people learned that the "silver" dental fillings in their teeth were really mercury fillings and that they were continuously being exposed to mercury vapor released from these fillings. The dental filling material in question is an amalgam of mercury and a dental alloy composed of silver, copper, zinc, etc. Throughout the 160 years of its use in dentistry it has been referred to by the dental profession as silver, silver amalgam, or just plain amalgam but never, until very recently, as mercury dental fillings. Whatever the name, the final mixture placed in the tooth is 46-52% mercury by weight. Mercury in addition to being the main ingredient of this dental material also happens to be a poison that is more toxic than lead, arsenic or cadmium.

The reason so many people learned about the mercury/silver dental filling controversy during 1990 was simply that the media, i.e., newspaper, radio and television, focused on the subject. The catalyst for all the media attention was two research abstracts released by the University of Calgary Medical School in Canada where extensive animal research on dental mercury is being done.

In August of 1990 two abstracts of animal studies showing pathology caused by mercury/mercury vapor from mercury/silver dental fillings were published. One abstract related to a study that used sheep as the animal model and which demonstrated a 50% impairment of kidney function within 30 days after placement of twelve occlusal mercury fillings in each of the study sheep. The other abstract outlined the

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results of a cooperative study between the University of Georgia at Athens and the University of Calgary investigating the effect of mercury on gingival and gut microflora. In this study, two wild-caught monkeys were utilized as the test animals. Within two weeks after placement of 16 small occlusal mercury fillings in each monkey, both Gram positive and Gram negative intestinal bacteria had become resistant to mercury. A similar mercury resistance was seen in the Gram positive oral flora of one of the monkeys. The significance of bacterial mercury resistance in the gut is two-fold. First mercury resistant bacteria will essentially convert various forms of mercury back into the vapor state thus permitting further reabsorption and secondly, it was found that 80% of the mercury-resistant bacterial strains from these monkeys were also resistant to one or more antibiotics, despite the fact that the monkeys were not exposed to antibiotics in their food or water. Antibiotic resistance



has become a major medical public health concern and limits the effectiveness of antimicrobials.

Although the major investigative television programs had been aware of the mercury controversy in dentistry for a number of years, no one was willing to alert the public to the potential danger because there was no scientific research demonstrating pathology directly attributable to mercury from dental fillings. Although thousands of scientific research articles have been published that demonstrate adverse physiology, including death, attributable to environmental, industrial, and work-related exposures to mercury vapor, very little study on dental mercury had been done by medical researchers because they had been falsely lulled into believing that the mercury was locked into the fillings and did not escape.

The findings of the scientific research group at the University of Calgary Medical School offered sufficient evidence to substantiate doing a television report and the most famous of all the investigative programs, the CBS 60 Minutes Program, decided to proceed. The results of their exhaustive investigation into the use of mercury in dentistry was aired on December 16, 1990 in a memorable segment titled "A Poison In Your Mouth." The Investigator was Morley Safer and the producer of the program was Patti Hassler. The program was a complete and unbiased treatment of one of the most controversial medical issues of this century. The response to the program was overwhelming, both from the general public and the dental establishment. The public clamored for more information and wanted to know the dentists in their areas familiar with proper protocols for amalgam replacement and what materials should be used for replacement. The ADA on the other hand called "foul" and complained fiercely even though an ADA spokesperson appeared on the program and was given adequate time to explain the establishment position that dental amalgam was safe. The dental establishment has continued to bring pressure to bear on CBS and 60 Minutes in every way they can. Their ultimate goal apparently is to have CBS recant and have 60 Minutes do a rerun/update indicating that subsequent events have overtaken their report and that mercury fillings are in fact safe. The people of this country owe a debt of gratitude to CBS and 60 Minutes for not caving in. History will show just how important the December 16, 1990 program was to the health and well-being of millions of people all over the world.

That was 1990. 1991 has been a much different year. During 1991, the ADA, FDA, and National Institute of Dental Research (NIDR) have all been actively involved in the dental mercury controversy. The ADA organized the largest media and political lobbying events in its history, all designed to overcome the media effects of 1990 that had cast a reasonable doubt on the safety and continued use of mercury as a dental material. This unprecedented campaign by the ADA has used astronomical sums of membership funds, probably in the millions, for the highly unethical and unauthorized purpose of defending the continued use of a dental material of very questionable biocompatibility and safety. A dental material that world-wide scientific research was demonstrating to be far different from the fabricated position the ADA had been portraying to its membership and the American people.

Two other major media events were orchestrated by the dental establishment in 1991: In March 1991, the FDA Dental Products Panel of the Medical Devices Advisory Committee met to discuss the dental amalgam issue. The committee unanimously decided that there was not sufficient evidence that dental amalgam was harmful, but that questions had been raised that warranted further investigation. The result was media headlines that stated "Dental Fillings With Mercury Are Safe, Scientific Panel Says." The second event took place August 26-28, 1991 and was sponsored by the National Institutes of Health (NIH) and the NIDR. This was a "Technology Assessment Conference On Effects and Side Effects of Dental Restorative Materials." The purpose of this conference was ostensibly to make recommendations to the NIH and NIDR on the safety of dental materials. The NIH/NIDR could then decide if any of their recommendations or conclusions were to be implemented or used. With regard to the mercury question, the panels' conclusions contained the following statement "Although mercury vapor is released from dental amalgam, the quantities released are very small and do not cause verifiable adverse effects on human beings." A conclusion incidentally that was contrary to the scientific evidence presented to the panel. The Associated Press article that was released following the completion of the conference resulted in newspaper headlines all over the country that read "The Mercury From Tooth Fillings Doesn't Pose Hazard, Panel Finds."



On the surface then it would appear that the ADA, FDA, and NIDR had mounted a successful campaign to overcome the adverse publicity that dominated the media in 1990. The results of all these activities were very confusing to a large segment of the American population who ended up not knowing who to believe or what to believe about the safety of mercury dental fillings.

However, let us examine what really happened in 1991. We will start with the March 15, 1991 meeting of the FDA Dental Products Panel of the Medical Devices Advisory Committee. The purpose of the meeting was to hear testimony on whether to classify dental amalgam as a Class III dental device. Placement in Class III would have required the manufacturers to prove the safety of amalgam. The fact that a meeting for such a purpose even took place is extremely interesting in itself. The Medical Device Amendment to the Federal Food, Drug, and Cosmetic Act signed into law on 28 May 1976 requires the FDA to classify all medical (including dental) devices accepted for use in the United States. If a material is not classified under the law it cannot be considered an approved dental device.

The Final Rule of the FDA on Classifications of Dental Devices was published in the Federal Register on 12 August 1987. (Over 11 years after the Medical Devices Amendment) There is no mention in the Final Rule of dental amalgam as a dental device. Therefore, dental amalgam has never been approved as a dental device. Because dental amalgam was the most widely used dental filling material in the world, there must be some logical explanation as to why the FDA did not classify it, after examining the issue for 11 years.

To start with, the dental profession utilizes the terminology "filling" or "restoration" to describe how a dentist repairs a tooth. Everyone who has ever been to a dental office knows what a filling is. Therein lies the problem. A filling isn't a filling at all, it is an implant. Dorland's medical Dictionary defines the word implant as: "To insert or to graft (as tissue, or an inert or radioactive material) into the intact tissue or body cavity of the recipient." The word cavity is defined as "...2. in dentistry, the lesion, or area of destruction in a tooth, produced by dental caries; classified as simple, compound or complex, according to the number of surfaces involved."

The FDA Panel developing the classification of dental devices was evidently aware that a filling was really an implant because the Panel requested that the FDA grant them an exception to identifying an amalgam dental filling as an implant. The FDA denied the request of the Dental Devices Panel, meaning they would have to treat amalgam placed into living tissue (teeth) as an implant. The problem with this was the fact that normal medical safety and biochemical standards for implants would then apply, making it impossible for the Panel to classify amalgam in anything other than Class III. This would have required amalgam manufacturers to produce scientific evidence that amalgam was safe to place in humans, and no such evidence existed. This problem was solved by avoiding the classification of amalgam altogether. Instead, only the components of amalgam were classified i.e., dental mercury and amalgam alloy. This action was a clear violation of Congressional intent, the governing law, and the FDA rules mandating that classified dental devices must be both safe and effective.

Neither component of amalgam can be used alone as dental device. Dental mercury (which is elemental mercury) cannot be used by itself as a dental fillings material, nor can the dental alloy. Without first being mixed together as an amalgam, they would rapidly wash out of any cavity they were placed in. Furthermore, the rationale used in explaining this subterfuge was that they could not classify amalgam as a dental device because it was a reaction product manufactured in the dental office by mixing mercury and dental alloy together. The ADA has done the same thing. The ADA certifies the safety of most dental materials utilized in dentistry. However, they too have circumvented their own standards by stating that they cannot certify a reaction product produced in the dental office.

As a direct result of the FDA failure to classify amalgam as an implant and approve it as a dental device, millions upon millions of unsuspecting dental patients in the United States have had a poison implanted in their body that has never been subjected to the rigorous biocompatibility testing required of all other medical implant devices. In fact, amalgam as a dental material has never been subjected to intense scientific scrutiny to determine it's biocompatibility. These facts notwithstanding, the ADA, FDA, and the NIH/NIDR are all arbitrarily stating that mercury dental fillings are safe.



Risk Assessment is the art and science of attempting to determine the degree of probability of a specific result occurring from a given set of risk factors. A risk factor can be defined as something that causes a person to be particularly vulnerable, in this instance, to an unhealthy event. An event which increases the risk or likelihood of developing some other health problem. There exists a severely critical need, within the medical and dental communities, to develop a risk assessment model for individuals with dental mercury implants. Since inception of its use in dentistry over 160 years ago, there have been clinical case histories demonstrating that there is a subset of dental patients, in untold numbers, who will not be able to accommodate the implantation of mercury in their bodies. It is this subset of individuals that have been placed in medical jeopardy as a direct consequence of having dental work done.

What are the Risk Assessment Factors that should be considered:

1. Scientific evidence has now shown that dental mercury implants release mercury vapor continuously without any type of stimulation. Further, when stimulated by chewing, the amount of mercury vapor released can increase as much as 15 fold.
2. Science has also verified that mercury vapor released from mercury implants is inhaled into the lungs where 80-100% is absorbed and passes into the blood.
3. Scientific animal experiments and human autopsy studies have demonstrated that inhaled mercury vapor is distributed to tissues and organs throughout the body including the brain with the main points of accumulation being the brain and kidneys. Animal studies have also confirmed this distribution for mercury vapor derived from dental mercury implants.
4. Human autopsy studies of accident victims in three different countries have all concluded that there is a direct correlation between the amount of mercury found in the brain and the number and surfaces of dental mercury implants.
5. Animal studies have proven that mercury from dental mercury implants does cross the placenta and enter the fetus where it also collects in a number of different tissues including the brain.
6. Studies of animals with dental mercury implants have shown that the mother's breast milk contains dental mercury in concentrations significantly higher than the mother's blood mercury levels. Breast nursing the offspring further compounds the in utero mercury exposure. The presence of mercury in human breast milk had previously been reported in the scientific literature.
7. Animal studies have also demonstrated kidney pathology within 30 days of the placement of 12 occlusal dental mercury implants. Evaluation of renal glomerular filtration rate demonstrated a 60% decrease within 60 days and a decrease in urine albumin. In a study of humans done in Sweden, urine albumin was evaluated prior to removal of dental mercury implants and again at 12 months post-removal. Urine albumin was significantly higher 12 months after removal demonstrating a recovery of renal glomerular filtration function after cessation of continuous mercury exposure from dental mercury implants.
8. Animal studies have demonstrated bacterial mercury resistance and also the development of antibiotic resistance.
9. One average size dental mercury implant contains enough mercury to exceed the Environmental Protection Agency adult intake standard for non-dietary mercury for over 100 years.
10. The World Health Organization has recently concluded that the largest estimated average daily intake and retention of mercury and mercury compounds in the general population, not occupationally exposed is from dental amalgams, not from food or air.
11. There is animal data demonstrating that mercury causes immunosuppression and can initiate auto immune reactions. There is also limited data showing that dental mercury can also inhibit immune parameters.
12. Clinical evidence has clearly demonstrated amelioration and cures of long-standing illnesses upon removal of dental mercury implants. Pro-mercury advocates dismiss these reports as anecdotal and only demonstrating a placebo effect. However, if in fact dental mercury replacement only produces a placebo



reaction, the question that must then be answered by these same critics is: How come dental mercury removal was effective when prior standard medical treatment was not?

13. Mercury toxicology experts have stated that no amount of exposure to mercury vapor can be considered totally harmless.

14. There is a percentage of people that are allergic to mercury. Even using the fabricated position of the ADA that this represents less than 1% of the total population, equates to approximately 2 million people. (The smallest percentage of those allergic to mercury reflected in scientific the literature is 5%.)

15. Science has never established that the human body requires mercury to survive. It is therefore classified as an xenobiotic. Xenobiotic's are substances that are foreign to the natural state of an organism and for which no metabolic role has been established. Mercury from dental mercury implants induces symptoms in a sensitive subset of the population that has also been observed to be xenobiotic (chemically) sensitive. The dental establishment and the FDA have taken the position that the amount of mercury vapor released from dental mercury implants is minuscule and cannot be considered clinically significant. However, to the subset of the population that are xenobiotic sensitive, the smallest dose of mercury can be clinically significant. As a formula it could be expressed as "Response is proportional to the dose times the degree of sensitivity."

16. The medical profession has developed a set of indices called "healthy norms" for evaluating those substances found in the blood and urine. An individuals blood or urine is subjected to a series of laboratory evaluations and the results are compared to the established norms. The physician or surgeon uses this laboratory data to make medical diagnoses and treatment decisions regarding your present and future health. Unfortunately, there are no "norms" available for individuals who have never had dental mercury implants. Consequently, the "norms" that you are being evaluated against have all been developed from data derived from individuals who may or may not have had dental mercury implants. (Approximately 75-80% of the population have or have had, one or more dental mercury implants.)

17. Medical researchers at the University of Kentucky have recently identified mercury as a possible cause of Alzheimer's disease and have stated the most probable source of mercury in the brains of Alzheimer's victims, is dental mercury.

It should be obvious from the above listing of Risk Factors that the development of a Risk Assessment model for any individual with dental mercury implants is going to be an extremely difficult task. Perhaps more importantly, there is sufficient scientific and clinical data available for anyone to conclude that serious doubts are evident regarding the safety, biocompatibility and continued use of dental mercury implants. The American people do not need anymore "expert" committees or conferences providing fabricated conclusions regarding how safe it is to have the poison mercury implanted in their bodies. What they are demanding is a total ban on further use of mercury as a dental material and legislative action requiring insurance carriers to pay for remedial removal of dental mercury implants when prescribed by their physician.

In its flight to destruction, the dental profession has passed the point of no return. Regardless of any action taken by the ADA, FDA, NIDR, or dental manufacturers, dental mercury implants will precipitate the greatest case load of litigation that the world has ever seen. A logical outgrowth of all of this upheaval will be that the dental profession as we know it today will cease to exist. In lieu thereof, dentistry will become a sub-specialty of medicine, requiring that an individual first obtain a medical degree before they can attend post-graduate training in dentistry. A condition of licensure that is long overdue.

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### **GERMANY IMPOSING PARTIAL BAN ON AMALGAM USE!**

An article in the January 8, 1992 issue of "Die Zahnarzt Woche" states: "The Ministry of Health (BGA) will shortly issue a directive to reduce the use of amalgam for treating caries. The BGA 'Practice Information' instructs dentists that amalgam should not be used in root canals, for fillings in the anterior and side teeth, in children up to six years of age and in pregnant women. However, the BGA will not point out any 'alternatives to amalgam repair'. The AOK-Bundesverbandes (Insurance Organization) has stated



that about 50% of all amalgam fillings can be replaced by plastics or ceramics. Additional costs should not be expected for the patients, according to the AOK-Bundesverbandes, since the insurance will pay for the alternative fillings according to the more stringent directives."

The balance of the article is devoted to criticism of the forthcoming BGA directive by the various dental organizations. It is interesting to note that not one of the three dental organizations quoted, i.e., the KZBV, BDZ, and KZV, commented on the safety of amalgam and health benefits to the patient. Their criticism dealt with the fact that plastic fillings would not last as long and would have to be replaced after two years causing considerable economic burden to the insurance system, that the statements of the AOK-Bundesverbandes indicating no additional costs to the patient are false, and the burden of the amalgam controversy should not be carried by the dentists.

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## **The Society of Toxicology**

1992 Annual Meeting - Seattle, Washington, February 23-27, 1992.

This promises to be a major event in the continuing search for scientific truth pertaining to the safety of dental amalgam fillings. The Society of Toxicology has a membership of over 3000 physicians, scientists, and researchers, who are all devoted to the science of Toxicology. It is our understanding, that the membership determines the symposia to be presented at the Annual Meeting. This, we feel adds great significance to the fact that this year the membership determined that there was a need to learn more about mercury vapor from dental amalgam fillings. As a result, one of the symposia being presented is: "Toxicity Assessment of Mercury Vapor From Dental Amalgams" sponsored by the Metals Specialty Section of the Society. Chairpersons for the Symposium are Don Galloway and Peter L. Goering, Center for Devices and Radiological Health, FDA, Rockville, MD.

Quoting from the preliminary program:

In terms of the number of exposed individuals, the most prevalent source of deliberate mercury (Hg) exposure is almost certainly dental amalgam. Dental amalgam releases mercury (Hg) vapor, which is absorbed by the lung and distributed systemically, concentrating in brain, kidney and fetal tissue. Implications of this Hg exposure are unclear, since no scientific studies have definitively linked amalgam Hg to human disease states. However claims have appeared in the popular press linking the presence of dental amalgam to a host of adverse health effects. This symposium will present recent research assessing the toxicity of very low level chronic Hg vapor exposure, with special emphasis on Hg exposure from dental amalgam. Since inhalation exposure to Hg vapor from any source can be expected to produce identical effects, we will broaden our consideration of this issue to consider both laboratory animal and epidemiologic studies of chronic, low-level Hg vapor exposure. The speakers will provide background information on Hg vapor toxicity, toxicokinetics, and critical target organs; present recent animal and human studies on amalgam Hg distribution and associated cell injury; report recent animal studies examining the developmental effects of prenatal exposures to Hg vapor; and present epidemiological evidence of reproductive toxicity among dental assistants occupationally exposed to amalgam Hg.

The program is as follows:

Introduction, Don Galloway, Center For Devices and Radiological Health, FDA, Rockville, MD.

Overview of Mercury Vapor Toxicity, Toxicokinetics and Critical Target Organs, Thomas W. Clarkson, University of Rochester School of Medicine, Rochester, NY.

Mercury from Amalgam Tooth Fillings: Its Tissue Distribution and Effects on Cell Function, Fritz L. Lorscheider, University of Calgary, Faculty of Medicine, Alberta, Canada.

Prenatal Exposure to Mercury vapor: Effects on Brain Development, Maths Berlin, University of Lund, Institute of Environmental Medicine, Lund, Sweden.



Reduced Fertility Among Dental Assistants with Occupational Exposure to Mercury, Andrew S. Rowland, National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC.

The Symposium is presently scheduled for 1:00 p.m. on Monday, February 24, 1992.

Non-members may attend the Annual Meeting and partake of any of the Continuing Education Courses or Symposia being offered. The Registration Fee prior to Feb 7, 1992 is \$220.00 and at the Door is \$245.00. Registrants will receive the Program and "The Toxicologist" (abstracts volume). Registration requests and fees should be sent to: Society of Toxicology; 1101 Fourteenth St., NW, Suite 1100; Washington, DC 20005; Phone: (202) 371-1393; FAX: (202) 371-1090. The Society of Toxicology 31st Annual Meeting is headquartered at the Seattle Sheraton Hotel, with the scientific sessions and exhibits at the Seattle Convention Center.

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## REVIEWS/ABSTRACTS

Applications of Autometallography to Heavy Metal Toxicology.

Gorm Danscher

Pharmacology & Toxicology 69:414-423, 1991.

**ABSTRACT:** Application of autometallography (AMG) to histological material from humans and animals exposed to gold, silver and mercury has made it possible to localize these metals at light and electron microscopic levels. Because of high sensitivity of the technique, traces of the three metals have been demonstrated in tissues and cells that had previously not been suspected of containing metals. A chelatable pool of zinc in the synaptic vesicles of the zinc-positive neurones can be demonstrated by AMG in the brain. The well defined staining pattern can be used to estimate volumes of cortical subdivisions. Volumetric studies based on autometallographic differentiation of cortical regions have provided valuable information about the effects of different toxicants. AMG can be combined with new quantitative methods, such as electron energy loss spectroscopy (EELS), electron probe X-ray microanalysis (EPMA) and laser microprobe mass analysis (LAMMA), to enhance detection of AMG metal catalysts with these techniques.

**BIO-PROBE COMMENT:** Use of autometallography has recently demonstrated that mercury can be retrogradely transported in nerve axons (Arvidson 1987, Arvidson & Arvidson 1990). The following abstract further demonstrates the exciting possibilities of using AMG for demonstrating and quantifying mercury and other dental metals in tissues and organs throughout the human body. As Danscher so aptly concludes his article: "Volumetric measurements based on the AMG-zinc-pattern of cortical structures represent a new tool to assess neurotoxicity of different toxicants."

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Effect of Organic and Inorganic Mercury on Human Sperm Motility.

Erik Ernst and Jorgen Glenn Lauritsen

Pharmacology & Toxicology 69:440-444, 1991.

**ABSTRACT:** The effects of mercuric chloride and methyl mercuric chloride on the motility of human spermatozoa in vitro were investigated. Organic as well as inorganic mercury compounds decreased the percentage of motile spermatozoa. After 15 minutes incubation with 40 uM mercuric chloride a significant decrease in sperm motility was observed. Less than 5% of spermatozoa were motile after 30 min of exposure to 20 uM methyl mercuric chloride. These effects could not be attenuated by addition of 5 uM sodium selenite. The ultrastructural localization of mercury was demonstrated by autometallography. Silver-enhanced mercury deposits could be demonstrated only in spermatozoa exposed to inorganic mercury. In these cells mercury grains were most abundant in membranes of midpiece and tail.

**BIO-PROBE COMMENT:** In a previous study, Ernst and his colleagues (1991) have shown that deposits of mercury in spermatozoa exposed to mercuric chloride could be demonstrated histochemically by means of the autometallographic (AMG) method. Other researchers (Nelson 1960) have found proteins containing sulfhydryl (SH) groups in the membranes encapsulating the nucleus, midpiece, tails, flagellar matrix and outer longitudinal fibers. Sulfhydryl-dependent enzymes involved in sperm respiration and motility have been localized within the sperm flagellum (Nelson 1958 & 1959). The significance of this is that mercury



has a high affinity for sulfhydryl groups and previous research has demonstrated that most mercury in tissues is bound to proteins. Lead has also been implicated as a possible cause of infertility. As we point out in our book *Infertility & Birth Defects*, no one has looked at the synergy of lead and mercury in relation to the ever-increasing infertility epidemic occurring in industrialized nations where the implantation of mercury in teeth has skyrocketed since the early 1960's due to the provision of insurance dental coverage.

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#### Biological Monitoring of Environmental and Occupational Exposure to Mercury.

Langworth S; Elinder CG; Göthe CJ; Vesterberg O.

Int Arch Occup Environ Health 63(3):161-167, 1991.

**ABSTRACT:** Biological monitoring was used to assess mercury exposure from occupational and environmental sources in a group of chloralkali workers (n = 89) and in a control group (n = 75). In the control group, the median value for blood mercury (B-Hg) was 15 nmol/l, that for serum mercury (S-Hg) was 4 nmol/l, 45 nmol/l and 14.3 nmol/mmol creatinine, respectively. In the control group, there were statistically significant relationships between fish consumption and both B-Hg and S-Hg values (P less than 0.001), whereas U-Hg correlated best with the individual amalgam burden (P less than 0.01). In the chloralkali group, the mercury levels in blood and urine were significantly related to the type of work (P less than 0.001) but not to the length of employment, to fish consumption or to the quantity of dental amalgam fillings. In both groups there were poor correlations between smoking or alcohol intake and the mercury levels in blood and urine. The results strongly suggest that fish is an important source of methylmercury exposure and that amalgam fillings are probably the most important source of inorganic mercury exposure among occupationally unexposed individuals. In the chloralkali group, mercury exposure from fish and amalgam was overshadowed by occupational exposure to inorganic mercury.

**BIO-PROBE COMMENT:** Further confirmation of the conclusions of the World Health Organization as published in their early 1991 Environmental Health Criteria 118: Inorganic Mercury. The general population is primarily exposed to mercury through the diet and dental amalgam, with dental amalgam providing the greatest degree of exposure. In the population not occupationally exposed to mercury, the average estimated average daily intake of mercury from dental amalgams is 3.8-21 micrograms per day with 3-17 micrograms representing the estimated amount retained in the body of an adult. This far exceeds the average of 2.4 micrograms per day of methylmercury attributable to eating fish. However, this differs significantly from the scientifically unsupportable position of the American Dental Association that fish in the normal American diet provides the greatest exposure to mercury in the non occupationally exposed population.

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### FORUM

International Academy of Oral Medicine & Toxicology

Spring Scientific Session and Board Meeting

Date: May 16 and 17, 1992

City: Arlington, Virginia

Site: Key Bridge Marriott Hotel, 1401 Lee Highway, Arlington, Virginia 22209, (703)524-6400) Room rates are \$75.00 per night (Mention IAOMT)

Chairperson for the meeting is Richard D. Fischer, D.D.S. (703) 256-4441.

Tentative Program:

Murray J Vimy, D.M.D. will make a presentation on the latest research related to dental mercury, published and in-progress at the University of Calgary Medical School.

Paul Rubin, D.D.S. will cover environmental aspects of mercury effluent from dental offices.

Bill Marcus, Ph.D. Chief Toxicologist of The Office of Drinking Water, EPA, will discuss the carcinogenicity of Fluoride.

In addition efforts are underway to have presenters from the FDA and EPA to address certain aspects of the dental mercury issue.