WARNING
THIS OFFICE USES AMALGAM FILLING MATERIALS WHICH CONTAIN AND EXPOSE YOU TO MERCURY, A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS AND OTHER REPRODUCTIVE HARM. PLEASE CONSULT YOUR DENTIST FOR MORE INFORMATION.

All dentists in the state of California using dental amalgam manufactured by Jeneric/Pentron Inc. are now required to post this warning in their offices. The decision results from a legal action against Jeneric/Pentron by the Environmental Law Foundation (ELF) of Oakland, California. The ELF charged the company with violation of the 1986 Proposition 65 of the State of California, which requires that consumers be informed of products containing materials that have been shown to cause cancer or birth defects and reproductive problems.

A California newspaper article called the action "a major break in a decade long controversy," while James Wheaton of the ELF stated "a major part of the (dental) industry has agreed to break the wall of silence and put in people's hands the information that mercury in fillings causes birth defects." The environmental group believes that other manufacturers and distributors of dental amalgam will follow the lead of Jeneric/Pentron.

Also in the newspaper article, a research toxicologist at the University of California (Berkeley) School of Public Health pointed out the published epidemiological studies demonstrating reproductive harm to female dental personnel. He also stated that no safety thresholds have been established for exposure to mercury. This latter position has also been taken by other mercury toxicity experts, in direct contradiction to statements by leaders of the dental profession that mercury exposures received by patients and dental staff are insufficient to cause harm.

This event, coupled with the recent California "Informed Consent" requirement for dental materials and the continued publication of dental amalgam mercury pathology studies, is certain to provide a major impact on the dental amalgam controversy in California, at the very least. The California State Board of Dentistry has been renowned for its attacks on mercury-free dentists in the state.

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"OUT FOR AMALGAM"
"DEGUSSA STOPS PRODUCTION"

This statement appeared as the headline of an article in a German newspaper on 21 December
1993. The translated text of the article was as follows:

"Degussa AG has, with immediate effect, stopped the production of the controversial tooth filling material amalgam. A spokesman for the firm in Hanau - until now the largest manufacturer of mercury products in Germany - stated that amalgam use was declining throughout the world. Moreover, the production site was to be moved from Pforzheim to Hanau to dedicate a great increase in the development of an alternative filling material. The spokesman stated that the cessation of production had no connection to the Wesseling based patient group, IGZ, that had made a complaint to the Frankfurt Prosecutor. The IGZ lodged a complaint over half a year ago against Degussa, claiming severe injury to the body by the use of amalgam."

BIO-PROBE COMMENT (courtesy of Dr. Graeme Hall, President IAOMT Europa e.V.): The likely real reason for the Degussa action is that next year a new law of the European Union may come into being. The law is now under discussion, but Germany has said that it is likely to agree to it. This law states that if a party thinks he has been damaged by a product, he no longer has to prove damage; the manufacturer must prove that it could not happen. This is a reversal of the present situation, with the onus of proof being transferred. The consequences of such a law are readily imaginable, as Degussa has apparently realized.

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MERCURY-FREE AMALGAM DEVELOPED

A joint effort by the American Dental Association’s Paffenbarger Research Center and the National Institute of Standards and Technology (NIST) has resulted in the development of a mercury-free metal alloy direct filling material. The new alloy is purported to be stronger, more durable and less likely to corrode than conventional silver/mercury dental amalgam. It is also stated to be less expensive than conventional amalgam.

The new alloy is based upon a unique fusing technique, the details of which are not available due to a pending patent application. It is known that the basic structure is composed of silver/tin particles that are electrolytically coated with silver by a special solution. The powder is mixed in the dental office with another liquid and inserted into the cavity preparation with minimal pressure. The resulting alloy sets more quickly than conventional amalgam and can be polished and finished right away.

Studies are planned to determine the material’s biocompatibility, tensile strength, compressive strength and longevity in order to obtain approval of the Food and Drug Administration (FDA).

BIO-PROBE COMMENT: The formal acknowledgement of the value of having a "mercury-free" dental filling material must be applauded. One must wonder, however, how the ADA will reconcile its new promotional effort with its heretofore position of claiming that the mercury exposure from silver/mercury amalgam has been proven to be safe because it has been used for over 150 years! If the long-standing position were correct, then the new "mercury-free" alloy would not be needed.

Judgement on the product should be reserved until the composition of the two "proprietary" liquids are known, along with the results of the planned biocompatibility studies. It is also well known that silver and tin are also metals that are toxic to humans, albeit much less so than is mercury. Claims of the product being less likely to corrode must be confirmed by studies valid to intra-oral human conditions. It has been established in the dental literature dating back to the 1800’s that metal alloys, including amalgam and gold alloys, become miniature batteries in the oral cavity, thus assuring the release of their components. Moreover, the influence of the vagrant electricity created by these miniature batteries on body function has not been adequately addressed.

A point is made of the material being less expensive than conventional amalgam. The FDA has acknowledged that it has never evaluated and certified mixed silver/mercury dental amalgam. Accordingly, no biocompatibility studies have been conducted to obtain FDA approval. It is unlikely that the conduction of the studies to determine the biocompatibility and physical properties necessary to obtain FDA approval of the new alloy will allow the marketing of the product at a lower cost than that of conventional amalgam. Unless, of course, such studies are financed by the citizens of the United States through government grants. Should this be the case, than the patents and subsequent profits should belong to the U. S. citizens, not the ADA and/or the NIST.

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FDA DENTAL PRODUCTS PANEL MEETS

The Dental Products Panel of the Food and Drug Administration (FDA) met on 1-3 December 1993. One of the topics of discussion was what to do about dental amalgam.

Contrary to popular belief, the FDA has never evaluated and classified dental amalgam as a "safe and effective" dental device, either by "grandfathering" its acceptance or by formal FDA procedures. Instead, the FDA classified "Dental Mercury" and "Amalgam Alloy" as safe and effective dental devices. The Chairman of the FDA Dental Devices Panel - which recommended and approved classification of amalgam components rather than mixed amalgam, the dental device actually used by the dentist - was John W. Stanford, Ph.D.

Another misconception is that the American Dental Association (ADA) certifies mixed dental amalgam. The ADA certifies "Dental Mercury" and "Amalgam Alloy" only. It has formally declared that it cannot certify mixed dental amalgam because it is a "reaction product" produced in the dental office and therefore the responsibility of the individual dentist (the same position has been placed in writing by the FDA). The Director of the ADA’s Council on Dental Materials, Instruments and Equipment (CDMIE), which developed this policy, was John W. Stanford, Ph.D.

A statement of the American Dental Trade Association (ADTA) on dental amalgam was presented to the FDA Dental Products Panel on 3 December 1993 by John W. Stanford, Ph.D. The ADTA is an international trade organization representing the dental industry since 1882. The volume of dental business represented by ADTA member companies is 85% of the distributors, 70% of the manufacturers, and 65% of the dental laboratories.

Dr. Stanford cited the positions of the various committees and dental organizations that have declared amalgam to be safe as proof of that safety. He also stated that a special fund, supported by amalgam manufacturers, has been established within the American Fund for Dental Health. Its purpose is to support research on dental amalgam contemplated by FDA and NIDR (the National Institute of Dental Research, which is the dental arm of the National Institutes of Health). One such study, funded by the manufacturers of dental amalgam, is under way at NIDR.

BIO-PROBE COMMENT: The presentation of Dr. Stanford, on behalf of the manufacturers, declaring the safety of dental amalgam is very interesting in light of his previous involvement on the issue with the ADA and the FDA. It will also be interesting to note the future actions of the FDA regarding dental amalgam. The Dental Device department of the FDA has already declared that it will "consider" dental amalgam to be a "kit", consisting of the two already accepted components. This "kit" will be considered to be in Class II, the higher ranking of the two components (Amalgam Alloy) and no further action will be necessary. If this maneuver is indeed accepted without the scientific documentation establishing the safety of the "reaction product" itself (mixed dental amalgam) it will be a clear violation of FDA Rules for Class II devices.

It should also be noted that the FDA has been petitioned by the originators of the Writ of Mandamus Action, for "administrative remedy" to classify mixed amalgam in accordance with the intent of Congress. Further, a Citizen’s Petition has been filed with the FDA requesting that mercury be banned from further use in dentistry.

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ABSTRACTS

Tibbling, L; Thuomas, K-A; Lenkei, R. (Ear- and Radiology clinics. Linkoping University Hospital and State Bacteriology Laboratory. Stockholm, Sweden.)

MRT-Changes in Basal Ganglia and Immunological Changes in Patients with Suspected Damage from Amalgam.


ABSTRACT: In addition to local mucosal changes of lichen ruber planus-type, observed in some patients with amalgam fillings, some patients, harmed by amalgam, exhibit CNS-toxic symptoms and general symptoms of an immunopathological character. Mercury and copper are likely to be the most toxic metals in amalgam fillings. In combination with saliva they form an electrogalvanic element and are slowly released from the amalgam. With the use of a MRT camera and immunological techniques we have the possibilities to establish amalgam-induced damage.
Twenty-nine patients (age 24-75) in the otological clinic who were suspected of suffering from mercury toxicity were evaluated for CNS symptoms and immunological disease. MRT and spin parameter findings in the patients were compared with those from 120 control subjects. Twenty-two of the patients were also evaluated at the State Bacteriological Laboratory regarding lymphocyte sub-populations and lymphocyte activation status.

In 97% of the subject patients, the MRT examination showed degenerative changes in the basal ganglia with hypointensity signal on T2-weighted pictures. All patients had CNS symptoms. Immunological changes, similar to those found in chronic fatigue syndrome patients, were found in 55% of the subject patients; another 2 had leukopenia; 20% were medicated with thyroxine for hypothyreosis; allergic symptoms were reported by 37%.

Conclusion: The degenerative changes in the basal ganglia might be caused by the precipitation of a paramagnetic substance; e.g. copper present in dental amalgam. Mercury is not paramagnetic. Our findings indicate that metals dissolve from amalgam and are transported to the brain. The immunologic damage might possibly be an effect of oxidative effects on cellular DNA by methylated mercury.

**BIO-PROBE COMMENT** (by Mats Hanson, Ph.D.): Magnetic Resonance Tomography (MRT) detects damage in amalgam patients. The patients are not different in history, symptoms and dental treatments from most of the other 13,000 members of the Swedish Association of Dental Mercury Patients.

The findings are consistent with reported effects of inorganic mercury on the brain. Recent animal studies show that the effects of methyl mercury and inorganic mercury vapor on the brain are identical. The findings are also consistent with reported effects of inorganic mercury on the immune system.

The spin signal detected might be caused by copper, as the authors suggest, but it should also be noted that inorganic mercury is paramagnetic and even ferromagnetic in its 1+ oxidation (mercurous) state. The oxidation state of mercury in the brain is not known, although it has been assumed to be 2+ (mercuric). The signal might also be caused by precipitated iron. Mercury (metallic or vapor) reduces iron to an oxidation state which promotes free radical generation and also disturbs porphyrin metabolism and other iron-dependent processes. Mercury does not need to be methylated to produce free radicals and damage DNA.

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Danersund, A; Lindvall, A; Lindh, U. [Dept. of Clinical Immunology and Transfusion Medicine. Dept. Of Infectious Diseases and Centre for Metal Biology. Uppsala University, Sweden. Metal Profiles in 25 Patients with Long-Term Illness.

Presented at Eurotox 93 Congress.

**ABSTRACT:** Introduction: The aim of the study was to evaluate if removal of dental amalgam and medical support improves the health status of patients with long-term illness. Twenty-five patients were included in the study and they had all soft diagnoses from their physicians.

Methods: Nuclear microscopy (1) was undertaken for isolated blood cells from venous sampling after three weeks without supplementation of trace elements and vitamins.

Results and Discussion: Anamnestically 16/25 display a story of contact-allergy against metals and/or cosmetic intolerance. The criteria of the chronic fatigue syndrome was fulfilled by 12/25. Conspicuous deviations from normal elemental ranges were noted for magnesium, calcium and zinc. Elevated concentrations of calcium were consistent in both cell types as well as decreased zinc concentrations. Erythrocyte magnesium was often low in contrast to granulocyte magnesium which was often high. In addition, granulocyte manganese was always high. In both cell types there were conspicuous concentrations of strontium, an element never found in controls. We have further looked at cellular mercury. Levels exceeding the detection limit (0.5 mcg/g dry weight) were found in 14/25 patients in 5-16% of the erythrocytes investigated. For the studied granulocyte, 20/25 patients displayed detectable mercury levels in 10-30% of the cells.

Conclusion: All patients have an elemental profile suggesting that heavy metal burden may influence their health. The elemental profiles in the patient group show similarities with those in inflammatory connective-tissue diseases. (2)

References:


Lindvall, A (1); Anudi H (2); Kinigalakis, G (1); Gahnberg, L (3); Anderson, N (3); Edling, C (2).
[Departments of Clinical Metal Biology (1) and Occupational Medicine (2), Uppsala University Hospital and the Public Dental Health Service (3), County of Uppsala, Sweden.]

Mercury in the Dental Practice; Contamination of Ambient Air and Waste Water.


ABSTRACT: In recent years concern for mercury vapour emissions and mercury contamination of waste water in the dental practice has been rising. Thus, both occupational and environmental aspects have been put forward. This report presents data acquired in 1992 from three average sized Public Dental Health Clinics in the city of Uppsala. The aim of the study was to examine the background levels of mercury vapour in the ambient air as well as in the breathing zone of dental personnel during conventional dentistry, and to examine the output of mercury in the waste water system.

Measurements with gold film instruments demonstrated local background levels of mercury vapour up to 12 mcg/m³. In the breathing zone temporary levels exceeding 150 mcg/m³ were recorded occasionally. These could be considerably reduced by applying a special mouth piece to the suction device (Ed. Note: The special mouth piece used was the Clean Up oral evacuation system). The yearly output of mercury in waste water, extrapolated from 10-12 days of measurements, exceeded by a factor of 3 the recommended maximum level - 5 grams per unit - for two of the clinics. It was concluded that temporary discharge of amalgam sediments from the piping system accounted for temporary peaks observed.

The results indicate that some degree of mercury vapour contamination may be present in the clinic and that unexpectedly high levels of mercury output in the waste water system may be encountered. It is concluded that these disadvantages may be counteracted by simple and effective measures.

Gale, GR; Smith, AB; Jones, MM; Singh, PK. Meso-2,3-Dimercaptosuccinic Acid Monoalkyl Esters: Effects On Mercury Levels in Mice.


ABSTRACT: Seven monoesters of meso-2,3-dimercaptosuccinic acid (DMSA) were evaluated for relative activities in mobilizing and promoting excretion of mercury in mercury-laden mice. Compounds assessed were the ethyl (M-EDMS), n-propyl (Mn-PDMS), isopropyl (Mi-PDMS), n-butyl (Mn-BDMS), isobutyl (Mi-BDMS), n-amyl (Mn-ADMS), and isoamyl (Mi-ADMS) esters. 2,3-Dimercaptopropane-1-sulfonate (DMPS) and DMSA were used as positive controls.

After the first oral dose of each compound at 0.5 nmol/kg, DMSA and DMPS reduced the corporal mercury burden 16% and 24%, respectively, compared to controls, while the monoesters effected reductions of 35% (M-EDMS) to 49% (Mi-ADMS). After the second treatment at the same dose, the respective reductions produced by DMSA and DMPS were 24% and 38%, and those conferred by the monoesters ranged from 52% (M-EDMS) to 61% (Mn-BDMS).

Determination of the comparative dose-response relationships of DMSA and Mi-ADMS on corporal and renal mercury concentrations revealed the monoester to be more active than DMSA on both parameters at each dose used. The cumulative amount of mercury excreted in urine by control mice over a 3-day period was 7.08 micrograms; this was increased 22%, 85%, and 94% by daily i.p. injections of DMSA, DMPS, and Mi-ADMS, respectively, at a daily dose of 0.1 nmol/kg.

The respective cumulative 3-day totals recovered in feces from control mice and from mice treated with DMSA, DMPS, and Mi-ADMS were 9.76, 8.21, 10.44, and 11.73 micrograms. Parallel daily measurements of retained whole body radioactivity from 203Hg in mice were in good agreement with the values calculated from the excretion data.

Girardi, G; El’ias, MM.

Effect of Different Renal Glutathione Levels on Renal Mercury Disposition and Excretion in the Rat.

ABSTRACT: Mercury renal disposition has been studied following HgCl₂ injection (5.0 mg/kg body wt., s.c.) in controls, diethylmaleate and N-acetylcysteine-treated rats. The different treatments were used to generate statistically different degrees of non-protein sulfhydryls concentration in kidneys.

Diethylmaleate (4 nmol/kg body wt., i.p.) diminished kidney glutathione levels to 25% and N-acetylcysteine (2 nmol/kg body wt., i.p.) increased kidney non-protein sulfhydryls levels up to 75% compared with new controls. The amount of mercury in the kidneys, the mercury excretion rate in urine and the mercury plasma disappearance curves were calculated during 3 h post HgCl₂ injection. BUN was measured in plasma at the same time period to determine the onset of kidney damage.

The results indicate a higher HgCl₂ renal clearance in N-acetylcysteine-treated rats compared to controls and less renal mercury accumulation. The data agree with diminished renal toxicity. On the other hand, renal mercury accumulation was higher and mercury renal clearance lower in diethylmaleate-treated animals, associated with higher renal toxicity.

The results suggest that non-protein sulfhydryl levels (principally glutathione) might determine renal accumulation of mercury as well as its elimination rate and hence might enhance or mitigate the nephrotoxicity induced by the metal.

Both the median sensory nerve conduction velocity and the amplitude of the sural nerve were associated with measures of cumulative exposure to Hg. An association was also found between years since first exposure to Hg and aspects of the visual evoked response. Previously exposed subjects with postural tremor or impaired coordination also had alterations in visual evoked response.

These results may indicate an effect of previous exposure to mercury vapour on the nervous system, possibly in the visual pathway, cerebellum, and the peripheral sensory nerves.

Ellingsen, DG; Holland, RI; Thomassen, Y; Landro-Olstad, M; Frech, W; Kjus, H.
Mercury and Selenium in Workers Previously Exposed to Mercury Vapour at a Chloralkali Plant.

ABSTRACT: The concentrations of total mercury (B-Hg), inorganic mercury (B-IHg), and methyl mercury (B-MeHg) in whole blood, urinary mercury (U-Hg), and selenium in urine (U-Se) and whole blood (B-Se) were determined in 74 chloralkali workers previously exposed to Hg vapour, and compared with 51 age matched referents. Dental amalgam state, fish consumption, and exposure related indices were studied with regard to the determined elements.

A significant relation between the surface of dental amalgam and U-Hg (Pearson’s r = 0.63, p < 0.001) was found among the referents. Mean U-Se was significantly lower (p < 0.001) among the subjects previously exposed to Hg (34.1 nmol/nmol creatinine) compared with that for the referents (42.6 nmol/nmol creatinine). A significant negative relation between the cumulative Hg dose and U-Se was also found.

The mechanisms and the clinical significance of these findings are not clear. No relation between current U-Hg and previous occupational exposure to Hg was found among subjects in whom exposure had ceased more than one year before the study.

Sällsten, G; Barregård, L; Schütz, A.
Decrease in Mercury Concentration in Blood after Long Term Exposure: A Kinetic Study of Chloralkali Workers.
ABSTRACT: The elimination of mercury (Hg) in blood was investigated in 14 chloralkali workers exposed to metallic Hg vapour for 1-24 (median 10) years. Blood and urine samples were collected on several (median eight) occasions during a period of 17-26 days.

The initial Hg concentrations were about 80 nmol/l in whole blood (B-Hg) and 17 nmol/nmol creatinine in urine (U-Hg). The decrease in Hg in whole blood, plasma (P) and erythrocytes (Ery) was best characterized by a two compartment model. In a model with a common half life for all subjects, the best fit for B-Hg was obtained with half lives of 3.8 days for a fast phase and 45 days for a slow phase. The half life of the fast phase was shorter for P-Hg than for Ery-Hg, whereas the opposite was the case for the slow phase. The half lives of the slow phases in whole blood and plasma were longer, and the relative fractions of the slow phases were higher (about 50%) after long term exposure than those (about 20%) reported after brief exposure.

Slower elimination indicates higher accumulation of Hg in organs with long half lives, and possibly the presence of at least one additional, even slower compartment. The U-Hg fluctuated substantially during the sampling period, and average concentrations decreased only slightly.

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BIO-PROBE COMMENT: The findings of these three studies would likely have been more dramatic had the subjects not been workers in chloralkali plants, where a combined exposure to mercury vapor and chlorine is encountered. Published studies have demonstrated that the presence of chlorine gas reduces the effects of mercury vapor exposure by combining with the mercury vapor to form the far less readily absorbed mercuric chloride, with a concurrent reduction in physiologic effects.

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FORUM

IAOMT ACCEPTED
BY ACADEMY OF GENERAL DENTISTRY (AGD) AS NATIONAL SPONSOR

The International Academy of Oral Medicine and Toxicology (IAOMT) has received acceptance as a National Sponsor by the Academy of General Dentistry (AGD). As of 21 October 1993, AGD credits for continuing education will be awarded for attendance at IAOMT meetings. The AGD acceptance applies for a two year period.

The AGD requirements are rigid and it will be necessary for IAOMT speakers to fill out presenter forms. It is well worth the effort, however, as most dentists will now be able to claim attendance at IAOMT scientific sessions for credit towards continuing education requirements in their states. Every dentist should check to determine if AGD sponsored courses are acceptable in their state.

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IAOMT WINTER REGIONAL BOARD MEETING.


Hotel Reservations: Viscount Suite Hotel. 4855 E. Broadway. Tucson, AZ. 85711. Phone: (602) 745-6500. Fax: (602) 790-5114. Room Rate: $95.00 single/double.

Program: Saturday, 29 January 1994. 8:30 am - 5:00 pm.

» Murray J. Vimy, D.M.D. = "Current Medical Research on Dental Amalgam."
» Ed Arana, D.D.S. = "Mercury Detoxification."
» Jerry Scnf, Ph.D. = "Brain Mapping/Diagnosis of Brain Function."
» Donald Armstrong (Superintendent, Pima County Wastewater Management) = "Dental Office Effluent and its Management."
» Gary Strong, D.D.S. = "Free Radical Pathology."
» Phillip P. Sukel, D.D.S. = "Informed Consent."

Board Meeting: Sunday, 30 January 1994. 8:00 am - 12:00 noon.

Registration: IAOMT members = $95.00. Non-members= $175.00.

Contact: IAOMT, P.O. Box 608531. Orlando, FL. 32860-8531. Phone/Fax: (407) 298-2450.

Supplementary IAOMT-sponsored seminar:

Friday, 28 January 1994. 12:30-6:00 pm.

• Walter J. "Jess" Clifford, M.S., R.M. (AAM), FIAOMT. = "Immunologic and Microbiologic Responses to Biomaterials."

Course Fee, payable to "Walter J. Clifford": Advance (by 21 Jan 1994) = $200.00. Onsite = $250.00.
Register through: Clifford Consulting & Research. P.O. Box 17597, Colorado Springs, CO. 80935. Phone: (719) 550-0008. Fax: (719) 550-0009.

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IAOMT MIDWINTER MEETING ON BIOCOMPATIBLE DENTISTRY
Friday, 18 February 1994. 8:30 am - 5:00 pm.
Chicago, Illinois.
Hotel Reservations: The Inter-Continental Hotel. 505 N. Michigan Ave. Chicago, IL. 60611. Phone: (312) 944-4100. Fax: (312) 944-3050.
Program:
» Murray J. Vimy, D.M.D. = "Research on Dental Amalgam."
» James Masi, Ph.D. = "Corrosive Chemistry."
» Michael F. Ziff, D.D.S. = "Toxicology of Amalgam Mercury."
» Walter J. "Jess" Clifford, M.S. = "Immunology of Dental Materials."
» Phillip P. Sukel, D.D.S. = "Standards of Care."
Fees [Payable to "IAOMT"]: Pre-Registration = $225.00. On-Site Registration = $250.00.
IAOMT Members = $200.00. Staff = $70.00.
Contact: IAOMT. P.O. Box 608531. Orlando, FL. 32860-8531. Phone/Fax: (407) 298-2450.

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INTERNATIONAL SYMPOSIUM
"STATUS QUO OF DENTAL AMALGAM"
Sponsors: IAOMT Europa e.V. and Biosynposia.
Chairs: Professor Lars Friberg (Karolinska Institute of the University of Stockholm, Sweden) and Professor Gerhard N. Schrauzer (University of San Diego, USA).
Date: 29 April - 1 May 1994.
Site: Europaeum at the European Academy of Otzenhausen. (Near Trier, Germany.)
Program: Murray J. Vimy, D.M.D. (Canada); Boyd E. Haley, Ph.D. (USA); Michael F. Ziff, D.D.S. (USA); Vera Steyskel, M.D. (Sweden); Dr. P. Druet (France); and others.

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IAOMT SPRING REGIONAL BOARD MEETING
30 April-1 May 1994.
Pittsburgh, Pennsylvania.
Hotel Reservations: Sheraton Hotel Station Square. 7 Station Square Drive. Pittsburgh, PA. 15219. Phone: (800) 255-7488.
Program: Saturday, 30 April 1994. 8:30 am - 5:00 pm.
» Jerry Bouquot, Ph.D.: "Diagnosis and Treatment of NICO (Neuralgia Inducing Cavitational Osteonecrosis.)"
» Robert McMahon, D.D.S.: "Root Canal Failures as a Source of Chronic Dental Neuritis and Referred Trigeminal Pain."
» David W. Ganong, D.M.D.: "Alterations in Blood Microbiology Resulting from Dental Treatment."
Board Meeting: Sunday, 1 May 1994. 8:00 am - 12:00 noon.
Registration: IAOMT members = $95.00. Non-members= $175.00.

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IAOMT 1994 ANNUAL MEETING
San Diego, California.

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ANNOUNCEMENT
Holistic Dental Practice - Looking for associate leading to partnership. Experience in mercury free dentistry and homeopathy is desired. Northwest Cincinnati.
Send resume to: William A. Westendorf, Inc. 1160 Black Rd. Hamilton, OH. 45013.