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MERCURY AND DENTISTRY

Our personal thanks to Alfred V. Zamm, M.D., F.A.C.A., F.A.C.P. of Kingston, New York for giving us permission to utilize copyrighted information contained in a pamphlet prepared for his patients.

"Recently I had the mercury fillings ("silver amalgam" fillings) removed from my teeth. I am happy to say that the results are beneficial. In an effort to answer some of the questions that have been raised on this subject, the following was prepared with the help of Bruce Sorrin, D.D.S.

QUESTION: How can I know in advance whether removal of my mercury fillings will help me?

ANSWER: You can't. There is no way to predict because:

1. Allergy to mercury is not the problem in question; hence, doing skin tests to prove someone is or is not allergic to mercury is irrelevant in terms of the patient with multiple food, chemical, and inhalant hypersensitivities;

2. The patients most likely to obtain benefit are those who are most sensitive. Any lessening of any sort of metabolic load, however small, may be significant to these ultrasensitive patients.

QUESTION: How can I obtain some factual data on the subject?

ANSWER: I have placed a collection of photocopies of articles at the reference desk of the Kingston Library. The title is "mercury and Dentistry I, II, III, and IV". This is a duplicate of the literature that I gave to Hudson Valley H.E.A.L. some time ago. This second and identical collection is now the property of the Kingston Library and will be permanently available at the library reference desk for use within the library, it cannot circulate.

QUESTION: What has been the experience of other patients who have removed their mercury fillings?

ANSWER: The national data on this is limited. It is being collected via a variety of studies in the hope of determining whether a pattern exists. The following is some data I have collected that may shed some light on this new subject:

Example #1. A patient I saw from Lake George, New York, an intelligent, high-level engineer who had been investigated by some of the outstanding clinical ecologists. This patient was a severe universal reactor. He had been unable to work, and he had been unable to eat almost all foods. He had been unable to tolerate low levels of petrochemicals. He now tolerates all of these things fairly well. Physicians were unable to help him beyond advice regarding avoidance, rotation, etc. I asked him how was he able to improve the status of his health. He told me that one physician in the Midwest told him he would not get better unless his mercury fillings (silver amalgam) were
removed. He did this, and gradually his illness reversed itself (not completely).

Example #2. About six months ago one of our local H.E.A.L. members decided to have the mercury fillings removed from her teeth. She was a severe universal reactor. Subsequently she sent a letter to many of us describing the reversal of her illness.

Example #3. In my own case, I felt the initiation of a benefit within two weeks after the last mercury fillings were removed (three months after the removal procedure was initiated).

Example #4. I spoke with Dr. Theron Randolph, who, as many of you know, is probably the leading authority in the country in Clinical Ecology. He told me he had suggested to about 20 patients to have the mercury fillings removed from their teeth, and that the results were mixed, i.e., there was benefit in many patients but not in everyone.

Example #5. The removal of mercury fillings is not a panacea. A patient of mine who is a universal reactor with severe ecological illness has no teeth; he wears full dentures (no fillings). His illness, therefore, must have some mechanism unrelated to mercury poisoning.

SOME FACTORS THAT MAY HELP PREDICT WHETHER A PERSON WOULD BENEFIT FROM THE REMOVAL OF THEIR MERCURY FILLINGS:

To repeat, this subject is so new that this can only be taken as a supposition and conjecture:

1) Dissimilar metals and the electrogalvanic effect:

The patient who has dissimilar metals in the mouth, i.e., one gold inlay and some mercury fillings, will have an electrogalvanic effect (a flow of electricity between these two different metals, as in a battery). The flow of electricity induces degradation of the mercury filling (silver amalgam), inducing a more rapid release of mercury than if only mercury fillings were present. This relationship will help you judge the degree to which you are at risk.

2) Selenium

Selenium binds with mercury to render it biologically inactive in some respects (this is why tuna is not poisoned by the mercury in its system. Tuna have two molecules of selenium for every molecule of mercury). (NOTE: Selenium is also protective against arsenic and cadmium.) One might conjecture that, if one receives some benefit from taking selenium, then the benefit may be in part due to the protective effect of selenium against mercury; hence, there might be some benefit from having the mercury fillings removed. This is NOT a PROOF, but merely conjecture.

It is interesting that in a study of the drinking water of about 50 cities in the United States, the cities were listed in the order
of the concentration of selenium in the water (most to least). Then the incidence of cancer was noted. The city that had the most selenium in its water had the least occurrence of cancer.

The dose should be: One 50 microgram tablet of selenium twice a day (1/2 dropperfull twice a day) of the liquid form prepared by Nutriology Co. Some patients who are petrochemically sensitive became tolerant to petrochemical exposure on this dose.

Petrochemically sensitive patients sometimes react to very small quantities of selenium. For the very sensitive, the initiation of selenium should be under the guidance of a physician who is knowledgeable in this subject.

When benefit ensues, some patients note a benefit within a few days; in others it may take up to three months to notice a benefit.

3) Zinc

Mercury competes biologically with zinc and is in the same column of the periodic table. Some patients experience some improvement of their general well-being with zinc. The possible reasons are multiple. One reason might be the relationship described above, i.e., zinc is protective to some extent against mercury. Although this, too, is no proof but merely conjecture, it is something to think about in terms of trying to portend a benefit from the removal of one’s mercury fillings.

The dose of zinc is one 15 mg. tablet once a day. Too much can also present problems. More is not necessarily better.

When benefit ensues, it may be apparent within a day or two.

4) Thiamine (vitamin B1)

Take thiamine (vitamin B1) 50 mg. with breakfast and 50 mg. with supper. Look for significant benefit, i.e., greater energy, greater well-being, etc. If it’s going to work, the benefits will generally be noted within 6-12 hours after taking the first dose and certainly by the next morning. If benefit results, this benefit could be considered an additional piece of evidence in favor of suspecting that mercury might be acting as a poison. Remember: at this stage of our knowledge about dental mercury, this is no proof but merely conjecture. It is something to think about, however, in terms of trying to predict if a benefit will ensue from the removal of one’s mercury fillings.

The following is a possible explanation:

Thiamine is important in the decarboxylation process of cellular respiration (1-2). There is a critical step at the entrance into the aerobic oxidation cycle (Krebs cycle) from the anaerobic (Embden-Meyerhof) pathway. This step involves "coenzyme A". Coenzyme A contains a sulphydryl group (\(-SH\)). These \(-SH\) groups are susceptible to being inactivated by mercury (3), and hence, unable to produce acetyl-coenzyme A. Some molecules will escape the poisoning,
depending upon how much mercury is available; hence, only limited amounts of functional coenzyme A will be available.

By adding more thiamine, we enhance an impaired area of the metabolic cycle and compensate for its inefficiency by pushing the reaction "to the right", as follows: We are more efficiently utilizing whatever limited amounts of still unpoisoned coenzyme A are available by a greater amount of thiamine provided to the decarboxylation process.

In regard to the interference of thiamine's action by poisons, both mercury and arsenic have similar toxic reactions. Selenium is protective against both mercury and arsenic poisoning. Both mercury and arsenic interfere with thiamine-dependent enzymes (and excess thiamine can be protective, to some extent, against poisoning from both metals). Arsenic poisoning can imitate thiamine deficiency disorders, as it interferes with the thiamine-dependent conversion of pyruvate to acetyl coenzyme A (4).

These relationships add further weight (but no absolute proof) to the concept that thiamine could be taken in a predictive way to determine if mercury intoxication is present and benefit could ensue from the removal of amalgam dental fillings.

REFERENCES:

Hence, if someone's illness improves on any one or all three of these substances, one could be tempted to say that there might be some benefit from the mercury removal. Remember: this is no proof, this is just conjecture.

HOW CAN MY DENTIST WORK ON ME AND MINIMIZE MY PROVOCATION?
WHAT TO DO BEFORE, DURING, AND AFTER THE DENTAL PROCEDURE

QUESTION: How can my dentist operate on me and yet minimize my exposure to the inevitable noxious elements involved in the procedures?

(a) How to prepare before you go to the dentist
(b) Ambient petrochemical vapors
(c) The dental procedure itself
- spray of amalgam material
- sensitivity to the anesthetic
- miscellaneous

ANSWER: Your dentist must be sympathetic to the idea that a person could be hypersensitive to the degree with which we are all familiar. Polite lip service is insufficient. Many dentists, physicians, and
other health care professionals simply do not have the personal experience with such hypersensitive people and find it hard to appreciate the subtleties necessary to deal with such people.

Ideally, the dentist should himself be a hypersensitive patient and have experienced some of the investigations and discomforts himself.

Hence, written instruction (typed preferred) should be given to your dentist prior to starting this procedure. The patient should be satisfied that there is a sympathetic and understanding person knowledgeable in chemical hypersensitivity at the other end of the drill.

The following is a brief outline of some of the major considerations that most sensitive patients will find useful. There are always a few extremely hypersensitive people who have discomfort in spite of all attempts at anticipating problems and minimizing exposure. This is a brief outline of a new subject. More can and will be added as time goes on.

A. HOW TO PREPARE BEFORE GOING TO THE DENTIST'S OFFICE:

-Selenium: One 50 mcg tablet two times a day should be taken for a few weeks before (with food) to build up whatever benefit can be derived;

-Zinc: 15 mg. per day (a relatively small dose) should be done once a day (with food) for the same period of time.

On the morning before going to the dentist's office the patient should take the zinc and selenium; zinc can be increased to 15 mg. twice a day for three days before the day of the procedure and three days after the procedure; then resume 15 mg. per day.

-Vitamin C: Two 500 mg. tablets three times a day for the day of the procedure and after that 500 mg. twice a day for three days. Vitamin C is helpful and counteracts some of the effects of petrochemical pollution.

B. PREPARATION DURING THE DENTAL VISIT

PETROCHEMICAL VAPORS AND AMBIENT CONDITIONS

1. Other patients and petrochemical vapors connected with their treatment

-Other patients having procedures involving noxious petrochemical vapors should not be scheduled for a reasonable time preceding your appointment. To minimize your exposure, you should be the first patient of the day.

2. Preparation for yourself

-Noxious chemicals that the dentist will prepare for you have to be mixed outside the building or in a room that is hably evacuated by a fan and the door closed. The chemicals to be used for you should be brought in at the last minute. In particular I am talking especially about the protective acrylic materials containing acrylic monomer.
3. Exhaust fans
- Exhaust fans that evacuate petrochemical fumes should be available in the operatory.

4. Other sources of ambient petrochemicals
- The dentist should not use odoriferous sterilizing solutions on his hands nor should the dental assistant.
- The dentist and the dental assistant should not wear aftershave, cologne, perfumes, etc.
- All bottles containing noxious vapors, even if they are not going to be used, should be not only sealed but also enclosed in plastic bags that will seal to prevent what would be minor exposure to anyone else but is major to a sensitive patient.
- The laboratory portion of the dental office should have a door that can be closed and a fan that can evacuate any odors.

As you can see, even before the dentist sees you as a patient there should be a great deal of thought and consideration given to the ecologically ill patient. If your dentist is not willing to do all these measures, you will invariably have more reactions, longer reactions, and more severe reactions than would otherwise be necessary.

C DURING THE DENTAL PROCEDURE:

1) Many dentists use local anesthetics containing a preservative. This is not acceptable. The worst offenders are the bisulfite preservatives. The recommended anesthetic is Carbocaine, manufactured by Cook and Waite in individual carpules. No epinephrine should be used, as most sensitive patients hyperreact to this.

2) While the dentist is drilling out the mercury (silver amalgam) fillings, inevitably there will be a dispersion of the amalgam particles, not only a solid phase but also in the gaseous phase. The dental assistant should be using a powerful suction device as close as possible to the point of drilling. This material should be evacuated so as to avoid the breathing or ingestion of it. The patient should be breathing through his nose. Some people find the use of oxygen to two liters per minute with a nasal mask to be helpful. Most of the time it will be unnecessary. It will be very useful when noxious materials are unavoidably used.

3) In regard to the use of oxygen:
- When the patient is having unavoidable petrochemical vapors in his mouth, two things must be done:
  a) The dental assistant must be using her suction device to remove as much of the vapors as possible. The patient should be breathing through his nose. Despite all the patient’s efforts, some noxious vapors will be inhaled.
  b) The physiological effects can be reversed to a great extent by having the dentist temporarily raise the oxygen to 12 liters per minute and the patient breathing deeply in and out for a few breaths
in order to "wash out" as much of the noxious vapors as possible and to utilize the salubrious effects of the oxygen in reversing the deleterious effects of noxious vapors. This procedure is highly effective.

Dental Cements

The cement we and others have found to be acceptable is the zinc oxide-ortho phosphoric oxide type of cement. No eugenol should be used, and no "varnish" should be applied to the tooth before the cement is used. This cement is an inorganic cement, and one brand we found to be acceptable and uncomplicated was "Fleck's Zinc Cement" manufactured by the Mizzy Co.

D. CONSIDERATIONS AFTER THE DENTAL PROCEDURE:

Once some of the mercury fillings have been removed some teeth will have to be protected with temporary aluminum caps. The presence of the new aluminum in the acidic mouth together with other dissimilar metals, i.e., mercury fillings (amalgam) or gold will produce a battery effect and electric current will flow with a strong current. This flow of electric current, i.e., the electrogalvanic effect, will very likely produce a discomfort as well as secondary effects in the hypersensitive individual. Gold anodized aluminum caps are available and these will minimize the problem.

E. MISCELLANEOUS:

ENDODONTAL PROBLEMS:

In a root canal procedure, sterilization of the interior of the infected tooth is required. Because the hypersensitive patient should not be exposed to many of these chemicals, this procedure presents a major problem. Some dentists have not recommended this procedure to hypersensitive patients. It would be a shame for a patient to lose a tooth because the dentist and doctor have capitulated to the difficult problem of petrochemical exposure in this procedure. Should one of our members have such a problem, I will be happy to discuss this with the endodontal specialist. Perhaps some method can be arrived at that uses inorganic sterilizing methods. At this time it remains unresolved, but not unsolvable.

The following translation of an article published in the Svenska Dagbladet, Sept 10, 1985 was kindly provided by Dr. Mats Hansen. The headline read "Large study on dentists and dental assistants. AMALGAM SUSPECTED TO BE RESPONSIBLE FOR HIGH MORTALITY IN BRAIN TUMORS."

The mortality in a certain type of brain tumor is doubled among dentists and dental assistants compared to the rest of the Swedish population. Mercury in amalgam is suspected to be the cause.

A research group at the Laboratory of Environmental Medicine (Karolinska Institute) led by Professor Anders Ahlbom has, in a large investigation, studied the mortality from brain tumors among dental personnel. All recorded dentists and dental assistants in Sweden in
1960 have been controlled for cancer diseases during the 1960 and 70ies.

A total of 9000 persons, half of them dentists and half assistants, have been searched in the cancer registry. With computer help all 9000 have been compared with data in the cancer registry where all persons with cancer are recorded.

The scientists at the Environmental Medicine Laboratory have worked for two years with the study.

DOUBLED FREQUENCY

The results show that dental personnel have increased mortality from the brain tumor glioblastoma, the most serious form of brain tumors. It usually leads to death within half a year. As a cause of death this type of tumor had the double frequency among dentists and assistants compared to others. In absolute figures 18 persons died from glioblastoma compared to the expected number of 9.

The increased mortality is statistically significant both for dentists and assistants. The prevalence is equal among men and women among the dental personnel.

We have also found a certain increased mortality in another similar brain tumor, glioma, but this increase is not as remarkable as the one for glioblastoma, says prof Anders Ahlbom.

As material for comparison the researchers have also studied all medical doctors and nurses working in 1960 and compared them with the cancer registry during the 1960ies and 70ies. Among these occupational groups there were no signs of increased prevalence of brain tumors compared to others.

We have now contacted research groups abroad since we want similar studies to be carried out in several countries says prof Ahlbom, now at a symposium of occupational medicine in Italy where the results will be presented.

AMALGAM SUSPECTED

The cause of the tumors must be somewhere in the occupational environment of the dental clinics. The mercury from amalgam is one possibility. Maybe also gases from chloroform and anesthetics. But the two latter factors are also present in the occupational environment of doctors and nurses and among these there was thus no increased incidence of brain tumors says Anders Ahlbom.

The specific factor for dental personnel is just their work with amalgam. If any component of amalgam should be suspected it is mercury, says Anders Ahlbom.

We don't know about any studies showing mercury to be cancerogenitc but there is very little knowledge of the effects of prolonged exposure to mercury.

RELEASES VAPOR

Amalgam, consisting of mercury to half of its weight, releases massive amounts of mercury vapor when it is prepared by the assistant and before it has hardened in the dental fillings.

In the beginning of this year another report on amalgam from the Dept. of Environmental Medicine attracted much attention. It was shown that in brains of dead people there was a correlation between the number of fillings in the teeth and the amount of mercury accumulated in brain tissue. This was the first time anyone has shown
that mercury from amalgam can spread into the brain.

The researchers at the Environmental Medicine Department will now continue with a study to assess any relation between the number of fillings and brain tumors.

The following news item was provided by Dr. Victor Penzer.
Boston, September 24, 1985
IN MASSACHUSETTS IT'S NOT A CRIME TO OPPOSE ADA'S VIEWS ON AMALGAM SAFETY

So decided the State Board of Examiners in response to the Department of Public Health accusations that Dr. Victor Penzer has been deceiving consumers with statements that dental amalgam fillings are hazardous to health.

After a thorough scrutiny by the investigators for the medical and dental state boards, followed by a hearing, the Complaint Committee concluded that "although Penzer's convictions are opposed to those of the American Dental Association, there is not sufficient data to refute Dr. Penzer's arguments decisively." The State Board expressed hope that the Department of Public Health "will be able to offer definitive refutation of the claims being made about the hazards of amalgam if such evidence can be gathered." The State Board believes that "to do so would be in the public interest."

REVIEWS/ABSTRACTS


ABSTRACT. We report a patient with documented IgA nephropathy in whom microscopic hematuria, proteinuria, and hypertension first occurred after placement of nickel alloy base dental crowns. Progressive proteinuria culminating in nephrotic-range proteinuria occurred parallel to increased nickel placement and dramatically resolved following nickel alloy removal. That immunologic alterations occur as a result of nickel exposure has already been suggested by the common occurrence of nickel contact dermatitis, often exacerbated by intraoral nickel placement, increased carcinogenesis in nickel refinery workers, and animal models of nickel-associated carcinogenesis. Our patient may represent an example of nickel-induced sensitization and associated IgA glomerulopathy. Further study of patients with immune-mediated glomerulopathy with attention to dental nickel exposure appears indicated.

ABSTRACT. 17 subjects were tested epicutaneously with 22 materials, including Ni, Pd, Cr and Co. 5 subjects with a positive allergic skin reaction to Ni were tested with a pure metallic nickel plate 3 x 5 mm, which was attached to buccal side of one lower premolar. These 5 subjects all developed local allergic contact stomatitis on the mucosa of the cheek adjacent to the metal plate. This was confirmed histologically. The same oral test with pure metallic palladium gave no reaction in subjects with a positive patch test. A control group gave no reactions to the metal plates. Allergic contact stomatitis was diagnosed with the help of both clinical and histological examinations.


SUMMARY AND CONCLUSIONS.

"Fatigue behaviour of amalgams made from nine commercially available dental amalgam alloys were determined at load levels of approximately 40-80% of their 7 d ultimate compressive strength values. Dental amalgams in general exhibited fatigue behaviour typical of other metallic materials. Over the range of stress levels investigated, significant differences in fatigue performance could be detected; but fatigue behaviours of all nine amalgam types were similar. At stress levels of approximately 50% of the ultimate compressive strength, substantial plastic deformation occurred. In that same range, the fatigue curves may have approached an endurance limit. Sybraloy displayed the best fatigue resistance of all amalgam alloy types investigated."


ABSTRACT.

The placental transport of mercury in pregnant mice and its localization in the embryo and fetus from early organogenesis through the whole fetal period was studied by whole-body autoradiography and gamma counting. Metallic mercury (\(^{203}\)Hg\(_0\)) (after inhalation) was compared to inorganic \(\text{HgCl}_2\) (after i.v. injection). Hg\(_0\) appears to be oxidized to Hg\(_{2+}\) in the fetal tissues and Hg\(_0\) inhalation results in about 4-fold higher fetal mercury concentration than Hg\(_{2+}\) injection (9.9 versus 2.4% gram dose per gram tissue).

Preadministration to the dams with ethanol or aminotriazole resulted in higher fetal concentrations (especially in the liver) of mercury after inhalation of Hg\(_0\) but not after injection of Hg\(_{2+}\). A
high placental concentration and accumulation in the corpora lutea of mercury after Hg\(^0\) inhalation should also be noted.


ABSTRACT.

To clarify the normal metabolism of mercurials in the human feto-placental system, organic (or methyl) mercury and inorganic mercury were measured in maternal blood (MB), umbilical cord blood (UB), and chorionic tissues of the placenta (PC) and its blood vessels (PV), obtained from pregnant women just after delivery, as well as in fetal liver and fetal brain from induced abortion cases. Organic mercury was commonly detected in MB, UB, PC and PV, with slightly more elevated values in UB and PC than in MB, whereas inorganic mercury was detected in PC and PV, but not in MB and UB. In the fetal liver, 27-60% of mercury was in the form of inorganic mercury, whilst in four of five fetal brain samples, inorganic mercury was not detected. Additionally, fetal liver demethylation activity was studied in vitro. Incubation of methyl mercury with chopped fetal liver tissue for 24 h resulted in demethylation of approximately 1% of the methyl mercury.

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EDITORIAL

WHAT IS THE REAL AMALGAM CONTROVERSY?
Sam Ziff

Dr. Zamm in the first few sentences of his patient brochure focuses on the major issue of the amalgam controversy, i.e. sensitivity of toxicity? Phrased more succinctly, allergy or metabolic overload due to a poison?

The primary defense of the pro-amalgam advocates is empirical, i.e. "150 years of use in the the mouth proves amalgam is safe except in those few individuals who are hypersensitive". On the surface a very powerful statement. However, let's look at that statement and attempt to quantify it scientifically.

1. In 165 years of use, there has not been one primary scientific research study proving the safety or biocompatibility of dental amalgam in the human body.

2. In 165 years, with the exception of a few isolated voices in medicine, physicians have not even considered the premise that amalgam or other dental materials could be an etiological factor in any disease state or syndrome.
3. After 107 years of use, the first primary scientific research study attacking the safety of amalgam was published. (Stock, 1926) What was the reaction of medicine? Character assassination and in essence, total disregard of the hypothesis raised.

4. NOT ONCE IN THE NEXT 53 YEARS WAS ANY ATTEMPT MADE TO REPLICATE PROFESSOR STOCK’S EXPERIMENTS AND FINDINGS.

5. In 1957 (31 years after Stock’s revelations) Dr. Frykholm published his Ph.D. dissertation in Sweden concluding amalgam was safe and posed no threat to human health. Dr. Frykholm’s dissertation immediately became the "prima facie" evidence of the pro-amalgam advocates that the use of amalgam was safe. It has remained the cornerstone of their defense even to this date, in spite of the fact that reputable scientists all over the world have found the scientific experiments and protocols utilized by Dr. Frykholm to arrive at his conclusions to be flawed and invalid. Perhaps more importantly, with the exception of verifying the release of mercury vapor during placement of an amalgam filling, NO ONE HAS BEEN ABLE TO REPLICATE HIS FINDINGS AND CONCLUSIONS.

6. Conversely, in 1979 (53 years later) replication of Professor Stocks' findings began to appear. Gay et. al. in 1979 were able to demonstrate the release of mercury vapor from amalgam fillings in vivo. Additional findings published in 1981 by Dr. Sware and his associates replicated and confirmed the release of mercury vapor from amalgam fillings.

7. To what avail? In 1984 (3 years after publication of scientific proof that mercury vapor is released from amalgam fillings during function) the ADA publically stated that mercury stays locked in the amalgam filling once placed and its toxic properties are rendered harmless.

8. In April through August of 1985 scientific studies were published confirming and expanding the data available on the release of mercury vapor from amalgam fillings during normal intraoral functions. Significant release of mercury vapor was demonstrated during tooth brushing that paralleled the findings recorded during normal chewing function. In August of 1985, Dr.'s. Vimy and Lorscheider published their findings of intraoral mercury vapor readings that exceeded established toxic values in some patients. In Sweden (in publication) replication of release of mercury vapor from amalgams was accomplished with an additional discovery that hot liquids also stimulated the release of mercury vapor to the same extent that chewing and tooth brushing did.

9. To what avail? In September 1985, the ADA announced the availability of a patient handout detailing the safety of dental amalgam. This is a 4 color "Public Relations" accomplishment that is a masterpiece of obfuscation. I quote:

"IS DENTAL AMALGAM SAFE?
Scientific studies of dental amalgam in tooth restoration have been carefully conducted for more than 100 years.
for the vast majority of dental patients. If there were any proven health hazard, dentists would immediately stop using amalgam."

Bio-Probe comments: In November 1984 the International Academy of Oral Medicine and Toxicology formally challenged the ADA and its Board of Trustees to provide primary scientific research documentation to support their claims that "scientific studies have shown amalgam to be harmless". The ADA in their response to the I.A.O.M.T. were unable to cite ANY SCIENTIFIC STUDY TO SUPPORT THEIR POSITION. With regard to their statements about amalgam I would like to point out that in 1969, Djerassi and Berova, in a classical scientific study, demonstrated that 16.1% of the patients in their study were allergic to AMALGAM ITSELF. (Allergic reactions were also demonstrated for the components of amalgam) NO EFFORT HAS EVER BEEN MADE BY THE ADA OR THE NIDR TO REPLICATE THIS LANDMARK STUDY.

"IS THE MERCURY COMPONENT OF AMALGAM ALSO SAFE?
Yes. After more than a century of thorough testing, no scientifically reliable study has found the mercury component of amalgam to present a threat to the general health of dental patients. Indeed, for the great majority of patients, the benefits of using amalgam restorations far outweigh any risks. This is because mercury is made virtually harmless when it combines with the other metals used to produce amalgam.

In fact, mercury in small quantities is found throughout the human body. It enters the body primarily through the air we breathe and through our drinking water. Eventually, the body rids itself of mercury through the urine, but there is always a very low level of mercury present in the human system."

Bio-Probe comments: Since 1969, 5 scientific studies have been published suggesting mercury/amalgam as a probable or possible etiological factor involved in the health conditions addressed in the studies. All stated further investigation was warranted. Two autopsy studies done in Europe have shown positive correlations between brain mercury levels and the numbers and surfaces of amalgam fillings.

The World Health Organization in their technical report series #647 published in 1980 (I might add that the panel of experts that compiled the report are considered to be the premiere scientific authorities on the subject of mercury toxicity in the world) state "The most hazardous forms of mercury to human health are elemental mercury vapor and the short-chain alkylmercurials". Now, we have all of the studies related above confirming the release of elemental mercury vapor from amalgam fillings, BUT NOWHERE IN THE SCIENTIFIC LITERATURE IS THERE ANY STUDY THAT EVEN IMPLIES THAT ELEMENTAL MERCURY VAPOR RELEASED FROM AMALGAM FILLINGS HAS BEEN MADE HARMLESS BECAUSE IT HAD PREVIOUSLY BEEN
COMBINED WITH THE OTHER METALS USED TO PRODUCE AMALGAM. IF SUCH A STUDY EXISTS I CALL UPON THE ADA TO PRODUCE THIS MAJOR SCIENTIFIC WORK THAT FLIES IN THE FACE OF ALL KNOWN RULES OF CHEMISTRY.

With regard to their position concerning the dietary and environmental intakes of mercury it is important to point out that dietary studies done by the FDA indicate the average daily intake measured at 12 different locations in the United States is 3.4 micrograms per day. An intake that pales in the face of recorded readings obtained from individuals with extensive dental amalgam in their mouths.

There is no scientific evidence to support the statement that the body eventually rids itself of mercury through the urine. Quite the contrary, in fact, is reported in several reliable scientific studies that conclude that mercury being excreted in the urine has no bearing on determining body burden or how much is retained in the cells of the body. There are scientific studies that show the body handles each dose of mercury independently and that in cases of chronic exposure (such as the continual release of mercury vapor from amalgam fillings) the slowest half-life portion will continue to accumulate over the lifetime of the organism. This is especially true of the brain where studies have shown the half-life of mercury to be 21 to 27 years.

All of the foregoing is a long way to get to the major issue raised by Dr. Zamm. Mercury vapor is a poison that can disrupt a myriad of metabolic functions in the body. The hypothesis of metabolic overload raised by Dr. Zamm is worthy of the most serious consideration by the medical and scientific communities of the world. If the body is capable of equilibrating a known quantity of a toxic substance, for example 3.4 micrograms derived from our food and water, what happens to the individual who is subjected to additional daily intakes of the same magnitude or greater resulting from inhalation of mercury vapor released from amalgam fillings? Couple that to the person who may already have other health conditions that have compromised some of the body's normal homeostasis mechanisms and what do you have? Frank systemic toxicity or hypersensitivity?

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FORUM

The following letter to the Editor was received from Wm A. Westendorf, D.D.S. in Cincinatti, Ohio.

I have been using only composite restorations in my General Dentistry practice since October, 1982.

I had many problems with post-operative sensitivity; starting about 4-5 days after placement of the restoration. I tried many different CaOH bases and different combinations of composite materials. For the last six months my problems have been completely resolved by the use of LIV GC lining cement. If directions are followed exactly this luting cement can and should be placed over the entire pulpal floor and
axial walls. No other base material is necessary. This glass ionomer bonds to the dentin and has a compressive strength of 600 PSI. Three minutes should be allowed for this base to harden. Then the material can be acid etched for placement of any composite material, preferably P10 or P30.

Post and Core build-ups: these can be handled by the use of ESPE Ketac-cement. When all old amalgam and decay has been removed a matrix band should be placed around the tooth. Attention to contour and contact in this procedure is not important. Sufficient powder should be added to the mix until it has lost its sheen, then in this putty form, placed within the band and condensed. There is a four minute setting time, then crown prep should continue in the usual manner. With this procedure you avoid placing etching material close to the pulp, therefore, no pulpal irritation.

These glass ionomer materials contain a slow release fluoride component which helps remineralize involved dentin, which helps in preventing recurrent decay about the margins of the crowns.

Both of these procedures have made my life with composites much more enjoyable.

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Bio-Probe has received many requests for copies of various articles in support of specific research efforts or as support back-up in defense of a particular position taken in discussions with colleagues. In the past we have attempted to satisfy these requests and have never charged for the service rendered. We are unable to continue to support these types of requests without compensation for the time and effort and mailing costs involved.

We have also received many requests for the slides and documentation used by Dr’s. Vimy and Ziff in making their typical one hour presentations on mercury/amalgam. We are now going to try and fulfill these types of requests for documented one hour presentations that may be given at study clubs etc.

To arrive at some estimate of volume and costs, please let us know if you are interested in utilizing these types of services.

For those of you who missed the 1st Annual Meeting of the International Academy of Oral Medicine and Toxicology, Creative Audio taped the entire meeting and the Album of audio tapes is available for $125.00 or individual tapes of specific presentations are available for $9.50 each. If interested call Creative Audio at 219-838-2770.

In this regard, the presentation by Dr. Earl Snider: "Overview of Heavy Metal Toxicity" has further documentation in the form of copies of the cover sheet of each reference used in the presentation (approximately 100) and these are available at a charge of $25.00.

The above services are only available to subscribers of Bio-Probe or to members of the International Academy of Oral Medicine and Toxicology.