DIRECT MEASUREMENTS SHOW GROSS UNDERESTIMATION OF AMALGAM BEARERS MERCURY BODY BURDEN

Innovative brilliant scientific research versus the tunnel vision mind-set of the pro-amalgam dentists. That is exactly how you can describe the current situation.

Amalgamists Olsson and Bergman¹ have just published a study that attempts to invalidate the intra-oral mercury vapor studies of Vimy and Lorscheider²-⁴ and, for that matter, everyone else including the WHO conclusions. They are claiming and attempting to demonstrate that their re-calculations prove that the daily dose contribution of mercury from amalgam dental fillings is inconsequential and of no significance.

Conversely and contrary to what Olsson and Bergman are trying to prove, exciting new research has just been published proving gross underestimations of most previous studies measuring the amount of mercury being released by amalgam dental fillings. These are landmark studies reflecting direct measurement of mercury tissue levels in amalgam bearers rather than attempting to measure how much mercury vapor is released from their amalgams. The amount of mercury being excreted is factual hard evidence that the daily dose exposure required to give that large a tissue concentration, is much greater than any previously shown by intra-oral or exhaled mercury vapor data.

The April 1992 issue of FASEB includes a study done at the University of Arizona by Professor H. Vasken Aposhian and his colleagues demonstrating that two-thirds of the mercury excreted in the urine of those with dental amalgams appears to be derived originally from the mercury vapor released from their amalgams.⁵ A unique feature of this study was the development of an "amalgam score." The amalgam score was calculated on the basis that a tooth has five visible sides. If an amalgam surface was 1 mm or less it was given a score of 1; a diameter above 1 and less than 2 mm received a score of 2; and a diameter of 3 mm or more a score of 3. The amalgam score is the sum of the score of all amalgam surfaces on all teeth in the subjects mouth. The administration of 300 mg of DMPS by mouth increased the mean urinary mercury excretion of the amalgam group from 0.70 to 17.2 ug and that of the nonamalgam group from 0.27 to 5.1 ug over a nine hour period. There was a highly significant positive correlation between the mercury excreted in the urine two hours after DMPS administration and the dental amalgam scores. "The results of the present experiments show that there is...
a pool of inorganic mercury in the human body that can be mobilized by administering the chelating agent DMPS and that more mercury is excreted by individuals with amalgams than those without."

Unbeknownst to either research group, Dr. Zander and his colleagues had conducted a similar study in Germany which was published in February 1992. The Zander group also utilized DMPS as the challenge agent and arrived at almost the same conclusion, i.e., "The results show that the release of mercury from amalgam fillings represents the main source of mercury exposure in subjects with amalgam fillings." A 6-7 fold increase of mercury excretion was noted after application of DMPS. Subjects with amalgam fillings excreted significantly more mercury before as well as after application of DMPS than subjects without amalgam fillings. Urinary mercury excretions was significantly correlated with the number of amalgam fillings.6

Further corroboration of gross underestimation of body burden of mercury attributable to amalgam dental fillings was provided by Professor Skare in a study just published in LAKARTIDNINGEN (the Swedish Medical Journal).7 Utilizing both feces and urine, Skare and Engqvist found, in occupationally unexposed individuals, the number of restored amalgam surfaces were related to diurnal excretions of total mercury and silver. The fecal excretions of mercury were twenty times the corresponding urinary excretion. Amalgam bearers with a large number of fillings showed a fecal excretion of total-mercury that was 100 times larger than the mean intake of total-mercury from a normal Swedish dietary intake (2 mcg Hg/24 hour). Individuals, loaded with an average number of amalgams, are predicted to show a fecal total-mercury excretion of 60 mcg Hg/24 hours, thus exceeding the existing WHO-standard concerning the maximum allowable intake of total-mercury from food of 45 mcg Hg/24 hours.

Skare and Engqvist also make the following point: "The body uptake from inorganic mercury swallowed with the saliva is commonly considered to be small, being one reason for the few studies published on the human excretion of mercury in feces (F-Hg). However, as shown earlier by Stock 1934 (11) (Stock A. Cucuel F. Z Angew Chemie. 47:641-647, 1934.) and Frykholm 1957 (12) (Frykholm KO. Uppsala: Almqvist & Wiksell, 1957) the amount of mercury passing the gastrointestinal tract is comparatively large, as much as some hundreds of μg a day for individuals with a large number of amalgam restorations."

The toxicity of Silver is rated just below that of Mercury by the EPA (1974). Another significant finding of this study was that fecal silver excretions also related to the number of amalgam surfaces. A very strong relationship was achieved when the fecal mercury excretions were compared with the corresponding fecal silver excretions. In effect, this also represents dissolution of the gamma-1 (Hg + Ag) phase of conventional silver amalgam and the abrasion and loss of silver and mercury.

With regard to silver, a recent report by Ernst E. et al. (see abstracts) demonstrated that after a single intravenous injection, silver was abundant in interstitial macrophages and in the basement membrane. Deposits of silver were also found in all cell types of spermatogenesis and the lysosomes of the Sertoli cells.

THE HARD SCIENTIFIC EVIDENCE AGAINST FURTHER USE OF DENTAL AMALGAM IN DENTISTRY IS BECOMING OVERWHELMING!

DENTAL PROFESSIONALS WILL SOON REALIZE THAT IT IS THEY WHO WILL BEAR THE LEGAL RESULTS OF CONTINUED IMPLANTATION OF MERCURY IN HUMANS AND NOT THE DOGMATISTS WHO ESPouse ITS SAFETY!

There has also been a benign neglect of the hard metallurgic data showing mercury release by transformation, corrosion, mechanical wear or abrasion. The following studies bring this information into perspective in relation to the direct tissue measurements outlined above.

..."There is both biological and metallurgical evidence that typical Hg-exposure levels produced by amalgam fillings are 5-10 fold higher than what are regarded as safe limits for exposure to mercury from other sources. There is no doubt that dental mercury should be taken into consideration as a possible etiological factor when considering
neurological, immunological and endocrinological diseases of unknown etiology.\textsuperscript{8} Those are profound words taken from a recent paper by Jaro Pleva Ph.D.\textsuperscript{8} Dr. Pleva is not only a world class metallurgist/dental materials expert, he is also a recovered victim of mercury poisoning from dental amalgam. From a pure metallurgic scientific point of view, and again forgetting about the tremendous effort on the part of the dental establishment to discredit intra-oral mercury vapor readings, here are some of the hard scientific data presented in his review paper:

Transformation: "As the amalgam sets, three main metallographic phases can be recognized alongside one another, designated as gamma-1 (Hg + Ag), gamma-2 (Hg + Sn) and gamma, which is the unreacted original alloy powder of Ag + Sn.\textsuperscript{5} From the literature it is obvious, that the setting reactions are unpredictable and that the resulting structural phases, most importantly gamma-1, vary considerably as regards their Hg-content. The impact of the structural instability on Hg-release is well illustrated by the presence of the beta-1 phase in fillings as they age. Beta-1 (AgHg) is formed by transformation from gamma-1 (Ag\textsubscript{5}Hg\textsubscript{3}), mercury being released in the process. Transition of only 1.0 gram of gamma-1 (Ag\textsubscript{5}Hg\textsubscript{3}) to AgHg in 10 years will release 170,000 \mu g Hg (8\% of the original content), giving an exposure of 46 \mu g Hg a day."

Corrosion: Pleva describes the various types of corrosion that have been observed on amalgam fillings after clinical use. These are general attack, selective corrosion, crevice attack, galvanic corrosion in contact with dissimilar metals and stress corrosion cracking. The dental profession’s main concern regarding the corrosion phenomenon has been the effect on mechanical performance. Although the release of free mercury droplets by corrosion has been scientifically documented, this and other studies demonstrating release of mercury by corrosion have not received adequate attention or possible concern related to health effects. In his own experiments Pleva has shown the release of about 30 \mu g Hg/day from corrosion.

Abrasion: "An exposure assessment based on corrosion data will not reflect the quantities of amalgam mercury released as a result of mechanical wear. Wear rates in a dry artificial mouth have been studied by DeLong (DeLong et al. Dent Mater 1:238-242, 1985). In correlation with clinical observations he found an amalgam wear rate of 65 \mu m per year at points of contact with enamel. For a total contact surface of 1 cm\textsuperscript{2} the wear will result in the release of 37000 \mu g Hg per year, i.e. 101 \mu g Hg a day."

In another study dealing with the in vivo electrochemical corrosion of dental amalgam, Gross and Harrison\textsuperscript{9} provide the following data:

\textquotedblleft If one takes a figure for wear of only 25 \mu m year\textsuperscript{-1} and a density of 11 g cm\textsuperscript{-3} for the dental amalgam and an area of 1 cm\textsuperscript{2} this is equivalent to a removal of about 75 \mu g of amalgam day\textsuperscript{-1}. About half of this by weight will be mercury if the composition is the same as the original material. A typical adult molar or premolar tooth has an occlusal area of about 0.5-1 cm\textsuperscript{2} so that a single amalgam filling with an occlusal area of 0.4 cm\textsuperscript{2} may, on average, release through wear 15 \mu g day\textsuperscript{-1}, half of the maximum allowed dose of mercury from all sources (of 30 \mu g day\textsuperscript{-1}), as specified by the US Environmental Protection Agency.\textsuperscript{10} (Clarkson TW et al. Mercury Health Effects Update. Health Issue Assessment. Final Report USEPA. EA 600/8-84-019F, 1984).

\textquotedblleft In addition to the possible indirect electrochemical mechanism for mercury loss (see above), neutral mercury has a substantial evaporation rate from untarnished amalgams, limited by the solid state diffusion within the amalgam, and perhaps the transition of the gamm-1 phase, Ag\textsubscript{5}Hg\textsubscript{3} or more probably Ag\textsubscript{22}SnHg\textsubscript{27} to the lower mercury beta-1 phase. AgHg \textsuperscript{(14)} (Okabe T. Dent Mater 3:1, 1987) and also, perhaps, the decomposition of a Cu-Hg phase, probably Cu\textsubscript{4}Hg\textsubscript{3} \textsuperscript{(46)} (Bryant RW. J Oral Rehab. 12:37, 1985). Qualitative measurements made in our work tend to confirm the view that the in vivo dissolution rate is additional to the electrochemical corrosion wear rate and as the amalgam surface roughens by the stripping off of tin and copper a greater area of the remaining Ag-Hg phases becomes available for dissolution.\textsuperscript{9}"

The dramatic information portrayed above when taken together with the recent studies demonstrating pathology presents an overwhelming scientific imperative for the immediate discontinuance of the use of amalgam as a dental filling material.

On the above basis, one would also think that any health care professional or medical or dental
researcher, having been exposed to such
information, would prudently and rationally
conclude that the time had arrived to put political
considerations aside and recognize that the dental
establishment has erred grievously in their
dogmatism of amalgam safety.
The head of the Swedish Medical Research Council
handed over organization of their recent
state-of-the-art conference to the dental members of
the Council. Unfortunately, the dental members are
all amalgamists who as yet do not appear ready to
recognize one shred of scientific evidence
indicating there may be a problem with the safety
of dental amalgam. The conclusions of the Medical
Research Council’s state-of-the-art conference,
held on 9-10 April 1992 in Stockholm, leaves very
little question of their dogmatism:
"Mercury-containing silver amalgam is the
most used, cost-effective dental filling
material. Small amounts of mercury are
released from amalgam but this release has
not been documented to cause systemic toxic
effects. Allergic reactions might occur but are
very rare and can be eliminated by exchang-
ing for other materials. Available scientific
data does not support stopping the use of
amalgam for new fillings or the exchange of
usable amalgam fillings.
It should be emphasized that patients who
consider their problems caused by amalgam
when the obvious cause of the symptoms can-
not be diagnosed, should be offered thorough
medical and psychosocial examination."

Translation of the press release
by M. Hanson, Ph.D.
The state-of-the-art conference was a shocking
disservice to the thousands of patients who have had
health problems ameliorate or clear after
replacement of their dental mercury implants.
Fortunately the Swedish public is too intelligent and
well informed to accept the conclusions of the
contrived state-of-the-art conference.
This time, it appears that the amalgamists may have
gone too far in their zeal to repress the truth and will
end up hoisted on their own petard. The day prior to
the Medical Research Council Conference (MRCC)
many key members of the Swedish Parliament and
those Swedish Government officials involved in
health decisions received special presentations by
world class scientists (Vimy, Nylander, Lindvall,
Lind, Skare, Stejskal) on the current scientific data
that seriously questions the safety of dental
amalgam and the continued practice of implanting
mercury in the human body.

It is our understanding that because of the wide
divergence between the facts presented to members
of Parliament and the distorted conclusions
resulting from the MRCC, there may be a
Parliamentary investigation into various aspects of
the entire amalgam problem.

In addition, many of the top scientists and
researchers in Sweden were greatly disturbed by the
unprofessional manner in which the conference was
conducted and the very unscientific conclusions
resulting from the MRCC.

Another interesting sidelight to the events was the
fact that the press was invited to the presentations
made to members of the Parliament but were not
allowed to attend the Medical Research Council
Conference and report firsthand their own
interpretation of the proceedings.

It is truly unfortunate that Sweden and its
institutions and research scientists, who have
traditionally been in the forefront of the scientific
exploration of the mercury/amalgam question,
should now find themselves frustrated and inhibited
by a few pro-amalgam zealots in influential
positions.

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human exposure to mercury .3. DMPS induced
mobilization of mercury in subjects with and without


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In Germany, the Bundesgesundheitsamt (BGA) (Ministry of Health) has issued a government pamphlet outlining the use of amalgam in dental therapy (ISBN 3-89254-129-9). Five major points are covered: 1) The manufacture and distribution of gamma-2 amalgam is stopped. 2) Amalgam dental fillings are restricted to use in posterior teeth only. 3) Amalgam is not to be used as a root filling material. 4) Amalgam is not to be placed in teeth of children up to 6 years of age and should not be placed in the teeth of pregnant women. 5) Amalgam should not be placed in the teeth of anyone with kidney problems. (Note: We will be getting a translation of the whole document, that should be available by the next issue of Bio-Probe).

BIO-PROBE COMMENT: We find it amazing how the same scientific studies can be interpreted so differently by two government agencies with similar country responsibilities for citizen health, i.e. FDA: Amalgam is safe and presents no threat to health; BGA: Is deeply concerned about health effects and further use.

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Chapter 15. "Industrial Exposure to Mercury," written by Woodhall Stopford, M.D., Department of Community and Family Medicine Duke University Medical Center, Durham NC 27710.

Page 370 15.1.2 Chlorine and caustic production.

"One of the major users of metallic mercury is the chloralkali industry. Chlorine and sodium hydroxide are produced by passing an electrical current through a concentrated brine solution. In the mercury cell process, mercury acts as one of the electrodes and also amalgamates with the sodium that is produced in the initial decomposition of the salt. This electrolytic process results in the over-all elaboration of both chlorine and hydrogen. If chlorine and hydrogen are given off together, an explosive mixture can result. To prevent this the mercury-sodium amalgam is then pumped into a second reaction vessel where water is introduced. The reaction in this vessel then results in the elaboration of hydrogen and the formation of sodium hydroxide. Each of the mercury cells can contain up to three tons of mercury, and up to 100,000 amperes at 4 volts is required for each cell. This large amount of energy results in the concomitant release of large amounts of heat. Consequently, a great deal of ventilation is used to keep the working temperature at tolerable levels. Such ventilation has the benefit of keeping mercury vapor levels under control. The release of trace amounts of chlorine can also decrease mercury vapor levels by as much as 80% by the formation of mercuric chloride (Viola and Cassano, 1968). In fact, Smith et al. (1970) found that only 17% of chloralkali workers were exposed to an average mercury level of greater than 100 ug/m³. In this group the only significant objective finding was that of a tremor. In the group exposed to less than 100 ug/m³ of mercury, no significant findings were noted."

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"With extreme exposure to inorganic mercury, one can find concentric constriction of the visual fields (Fig15.3), a finding that is usually associated only with alkyl mercury poisoning. Baldi et al (1954) found such a constriction of visual fields in 12 of a group of 1077 hatters they examined. The onset of this disorder was associated with an episode of mercurialism in all cases. Both Kark et al. (1971) and Sakuma et al. (1975) have noted that constriction of visual fields can resolve with treatment by chelating agents. These investigators also noted poor night vision and red-green color blindness in their subjects. In one subject these abnormalities also resolved with treatment. More common eye abnormalities include the finding of mercurialentis which is a brownish discoloration of the anterior capsule of the lens. Such a defect occurs only after chronic exposure to mercury and can present without any evidence of mercurialism. Similar depositions of brownish pigment have been
noted in the cornea of workers (Burn, 1962). Both of these disorders appear to result from the direct penetration and deposition of mercury vapor, not from any systemic exposure (Abrams, 1963). While mercurialentis has never been associated with a visual abnormality, the corneal deposition of this pigment can result in decreased visual acuity."

"Individuals who have severe mercurialism can also have defects of other sensory organs. Krajina (1953) noted between 50 and 70% of the workers at the mine at Idria have a high frequency hearing loss. Such a hearing loss is reversible. Both Kark et al. (1971) and Pilat et al. (1960) noted improvement of a hearing loss associated with mercurialism following the use of chelation therapy. In some individuals, further auditory disturbances can occur with the symptoms of vertigo, ringing in the ears and loss of balance (Thompson 1914). The sense of smell can also be affected. Giglioni (1909) noted complete or partial loss of the smell sense in 10 of 20 workers at the mines at Monte Amiata who had severe mercurialism."

"15.5.3.3 Saliva mercury determinations. No mercury has been detected in saliva samples unless there was a mercury vapor exposure. Salivary glands are primary organs of excretion of mercury, and excessive exposure to inorganic mercury can result in salivary gland enlargement as well as excessive salivation (Buckell et al., 1946). Salivary mercury levels can be much higher than blood mercury levels and the finding of less than one part per million of mercury saliva is a strong indication that not enough exposure has occurred to produce neurological symptoms."

**Table 15.5**

Relationship between salivary mercury levels and the occurrence of tremor among workers at a chemical factory producing oxides and chlorides of mercury as well as phenyl mercuric acetate (W. Stopford, pers. obs.).

<table>
<thead>
<tr>
<th>Salivary mercury (ppm)</th>
<th>Control</th>
<th>After 1 day</th>
<th>After 2 days</th>
<th>After 4 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>#with tremor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salivary mercury:</td>
<td>&lt;1.0</td>
<td>1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>#without tremor</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salivary mercury:</td>
<td>&gt;1.0</td>
<td>1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Air mercury levels:</td>
<td>0.20-1.50 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine mercury:</td>
<td>0-3100 μg/l (av.547)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### REFERENCES FOR STOPFORD


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### ABSTRACTS/REVIEWS

Uzzell BP and Oler J.

Chronic low-level mercury exposure and neuropsychological functioning.

**ABSTRACT:** To measure the effects of chronic low-level exposure to inorganic mercury, the neuropsychological performances of 13 female dental auxiliary workers with elevated head mercury levels (as measured by X-ray fluorescence technique) were compared with 13 workers with no measurable mercury levels. Workers with elevated mercury levels scored significantly less well on the Recurrent Figures, and SCL-90R, but not on the WAIS, Rey’s AVL, PASAT, BGT, Grooved Pegboard, and Finger Tapping Tests. Chronic subtoxic levels of inorganic mercury appear to produce mild changes in short-term nonverbal recall and heightened distress generally, and particularly in categories of obsessive compulsion, anxiety and psychoticism, without alterations in general intellectual functioning, attention, verbal recall, and motor skills.

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Zander D. et al.

Studies on human exposure to mercury.3. DMPS induced mobilization of mercury in subjects with and without amalgam fillings.


**ABSTRACT:** The urinary excretion of mercury (per 24 h) was determined in 29 subjects before and after application of DMPS (2,3-dimercapto-1-propane sulfonic acid, 300 mg per os).

A 6-7 fold increase of mercury excretion was noted after application of DMPS. Subjects with amalgam fillings excreted significantly more mercury before as well as after application of DMPS than subjects without amalgam fillings. Urinary mercury excretion was significantly correlated with the number of amalgam fillings. About 50% of the variance of urinary mercury can be explained by the number of amalgam fillings. The results show that the release of mercury from amalgam fillings represents the main source of mercury exposure in subjects with amalgam fillings.

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Ernst E., Rungby J & Baatrup E.

Ultrastructural localization of silver in rat testis and organ distribution of radioactive silver in the rat.


**ABSTRACT:** The deposition of silver after a single intravenous injection (2 micrograms Ag g-1 body weight) was studied in the testes of Wistar rats 24 hours and 1 and 2 weeks after dosing the radiolabelled $^{110}$AgNc3 (2 micrograms Ag and 1.2 kBq g-1 body weight). Also, the temporal accumulation of silver during the experimental period was monitored in the blood, testes, epididymides, kidney, liver and brain. The subcellular distribution of silver within the testes was demonstrated by using the histochemical techniques of autometallography. Silver was cleared rapidly from the blood. After an initial rise, concentrations in organs remained almost stable throughout the experimental period. Silver was especially abundant in interstitial macrophages and in the basement membrane. Deposits of silver were found in all cell types of spermatogenesis and in the lysosomes of the Sertoli cells.

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Moberg LE, Applegren B and Sjostrand NO

Low concentrations of inorganic mercury inhibit in vitro autonomic transmission in the presence of albumin.


**ABSTRACT:** The influence of albumin, 4.5 and 45 g/l, on the effects of Hg$^{2+}$, 10(-9)-10(-3) M, on the neuromuscular transmission of the isolated guinea-pig ileum and vas deferens was investigated. Hg$^{2+}$, 10(-9)-10(-6) M, transiently increased the basal tone of the ileum in Tyrode solution without albumin. Albumin, 4.5 g/l, reversed this stimulant effect but enhanced the contractile response to direct muscle stimulation. This contractile response also increased in the vas deferens. Albumin, 45 g/l, obliterated the stimulant effects of Hg$^{2+}$ on the smooth muscle of the ileum but not of the vas deferens. The effects caused by higher concentrations of Hg$^{2+}$, 10(-5)-10(-4) M, reduced the contractions in both organs. Consequently, Hg$^{2+}$ in concentrations presently considered acceptable in blood plasma (10(-9)-10(-8) M) suppressed both cholinergic and adrenergic neuromuscular transmission even in the presence of albumin.

*****
Skare I, Engqvist A.
Amalgam restorations - an important source to human exposure of mercury and silver.

**ABSTRACT:** For ten healthy individuals, occupationally unexposed to mercury, the number of restored amalgam surfaces was related to diurnal excretions of total mercury and silver by urine and feces. The fecal excretions of mercury and silver were ranging between 1-190 ug Hg/24 hour and 4-97 ug Ag/24 hour respectively. The fecal mercury excretions amounted to twenty times the corresponding urinary excretion. The individual, being most loaded with amalgam, showed a fecal excretion of total-Hg, which was one hundred times larger than the mean intake of total-Hg from a normal Swedish dietary (2 ug Hg/24 h). Using our data, an individual averaged loaded with amalgam is predicted to show a fecal total-Hg excretion of 60 ug Hg/24 hour, thus exceeding the existing WHO-standard concerning the maximum allowable intake of total-Hg from food (45 ug Hg/24 h)

Agrawal R; Chansouria JP.
Alterations in plasma sodium and potassium levels following chronic oral ingestion of lead, mercury and cadmium in male albino rats.

**ABSTRACT:** Adult male albino rats were orally administered 0, 25, 50, 100 ppm of lead nitrate, mercuric chloride and cadmium chloride for 60, 120 and 180 days. The plasma sodium levels were decreased in rats exposed to varying doses of lead and mercury up to 180 days, while animals which consumed cadmium chloride showed an increase in sodium levels. In lead and mercury treated animals, plasma potassium levels were increased up to 180 days. The levels were decreased in cadmium exposed rats. These observations suggest that chronic exposure to these heavy metals considerably influences plasma sodium and potassium levels depending on the dose and duration of exposure.

**FORUM**
Safety of silver/mercury dental fillings will be probed by FDA and the National Institute of Dental Research due to claims by toxicologists that mercury might lead to brain disorders, arthritis and other problems. In private discussions, FDA officials say that a direct link is unlikely. (The Kiplinger Washington Letter, Washington April 3, 1992).

**BIO-PROBE COMMENT:** As usual, there is a predetermined conclusion of safety by any of the establishment spokespersons. We also found it interesting that Dr. Harald Löe who heads up the U.S. National Institutes of Dental Research was a participant in the Swedish Medical Research Council Conference and concurred in their conclusions. The truth of the matter is that after the recent meeting of the Society of Toxicologists in Seattle during February 1992, many toxicologists who attended the special symposium on the toxicity assessment of mercury vapor from dental amalgams, are expressing serious concerns about the safety and continued use of amalgam as a dental filling material.

**ASSOCIATION OF HEALTH PRACTITIONERS**
1992 Annual Scientific Meeting to be held May 14th-17th, Thurs-Sunday at the Catamaran Resort Hotel, San Diego, California.
Speakers:
William H. Moore, Jr., J.D. The legal meaning of A.H.P. Doctrines & Standards.
John Yiamouyiannis, Ph.D. Threats to public health: Fluroide & Mercury.
Marshall Mandell, M.D. Allergies the great deceiver.
Senator Diane E. Watson, Ph.D. The Legislative process & health freedom.
Rev. Jim Jeffers, Ph.D. Health care and the law.
James Merrill, J.D. Collision Course: Civil war dentistry meets environmental law.
On May 14th there will be workshops on Nutrition, Homeopathy, Cranial, Trace mineral analysis, Electro-Acupuncture, Vision improvement and Stress zones & parasites.
Hotel reservations 1-800-288-0770 or FAX 619-488-0901. State you are with A.H.P.
Discounted travel through Northern Virginia Travel. 800-628-1125 or 703-722-3299.

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