

A Patient's Guide

To

Mercury

Holistic Dental Center

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- **Supplements**
- **Nutritional Support**
- **Detox Alkaline Diet**

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History of Mercury

- 500 bc - used in India as a drug
- 7th century - used by the Chinese in a “silver paste” to fill decayed teeth
- 10th century - Arabian physicians used Mercury as an ointment
- 13th century - Mercury made its way into Europe
- 16th century - Mercury was the drug of choice for the treatment of syphilis
- 17th century - Mercury was found to be poisoning miners and was known as an occupational hazard for miners, gliders, tinsmiths and physicians
- 1713 - the first public outcry over the use of mercury
- By the early 1800's, the use of a Hg/silver paste as a tooth filling material was being popularized in England and France and it was eventually introduced in North America in the 1830s. Some early dental practitioners expressed concerns that the Hg/silver mixture (amalgam) expanded after setting, frequently fracturing the tooth or protruding above the cavity preparation, and thereby preventing proper jaw closure. Other dentists were concerned about mercurial poisoning, because it was already widely recognized that Hg exposure resulted in many overt side effects, including dementia and loss of motor coordination.
- By 1845, the American Society of Dental Surgeons and several affiliated regional dental societies adopted a resolution that its

members sign a pledge not to use amalgam. Members of the society were suspended for the malpractice of using amalgam.

- But the advocates of amalgam eventually prevailed and membership in the American Society of Dental Surgeons declined, forcing it to disband in 1856. In its place arose the American Dental Association, founded in 1859, based on the advocacy of amalgam as a safe and desirable tooth filling material.

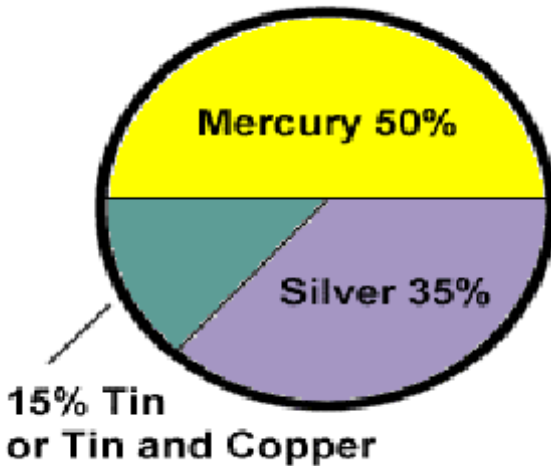
- Dr. J. Foster Flagg started the first organized movement for amalgam. He believed that amalgam was a valuable filling material and reports of toxicity were untrue. The profession still remained doubtful until the efforts of G. V. Black, teacher, lecturer and scientific researcher who did more to perfect dental amalgam than anyone. His techniques are still taught today.

- In the early 19th century a chemist named Gaspard demonstrated mercury's fetotoxic effects by exposing fly eggs to mercury which did not hatch and control eggs which were not exposed to mercury which hatched. Despite evidence to the contrary, widespread belief that mercury could cure diseases dramatically increased use. Mercury became the drug of choice in the last quarter of the 19th century. Mercurials or mercury salts were shown to have germicidal and antiseptic effects and were used until the 1990's, even though there were reported problems such as:

- 1953-1965 - Minamata Bay, Japan - 121 people were poisoned by methyl mercury, 46 died

- Niigata - 47 cases reported with 6 deaths also methyl mercury. The source of contamination of the fish eaten was factory discharge of mercuric chlorides used to manufacture vinyl. Research also showed mercury penetrated the placental membrane - 6% of children born had cerebral palsy.

- At the present time, based on 1992 dental manufacturer specifications, amalgam (at mixing) typically contains approximately 50% metallic Hg, 35% silver, 9% tin, 6% copper, and a trace of zinc. Estimates of annual Hg usage by U.S. dentists range from approximately 100,000 kg in the 1970's to 70,000 kg today.



- Hg fillings continue to remain the material preferred by 92% of U.S. dentists for restoring posterior teeth. More than 100 million Hg fillings are placed each year in the U.S. Presently, organized dentistry has countered the controversy surrounding the use of Hg fillings by claiming that Hg reacts with the other amalgam metals to form a “biologically inactive substance” and by observing that dentists have not reported any adverse side effects in patients. Long-term use and popularity also continue to be offered as evidence of amalgam safety.

- For most of the 150 years that mercury has been in fillings, the dental establishment insisted that it posed no health threat because it could not escape from the amalgam. Nevertheless, some patients have long claimed that replacing their silver fillings with gold, porcelain or composite resins have cured them of colitis, food allergies, PMS or multiple sclerosis.

The following amino acids contain sulfur which pulls mercury from the body. All are antioxidants and detoxifying agents:

- Taurine - 500 mg/day
- Glutathione - 500 mg/day
- L-Methionine - 500 mg/day
- L-Cysteine - 500 mg/day
- Acidophilus - these bacteria seem to play a role in mercury excretion
- DHEA - 25-100mg/day for adrenal support

- In 1979 researchers established that mercury does leach from filled teeth. In fact, fillings can be the largest single source of exposure to inorganic mercury. - *quoted from Lifestyle magazine, "Drilling for Danger"*

- According to the World Health Organization, amalgams are a prime source of mercury exposure. Over 180 million Americans have Hg fillings. Each amalgam can release between 3 to 17mcg of Hg/day. The mercury released forms methyl mercury which is absorbed through the oral tissues and air passages, transported to the brain and other body tissues.

[The following is a presentation both for and against Mercury YOU Decide](#)

Pro: Mercury in dental amalgams chemically binds with the alloy metals and results in an inert substance. The ADA also frequently claims that the components of amalgams are analogous to sodium and chlorine which are hazardous in their pure form but combined form ordinary table salt.

Con: An amalgam is a mixture and the properties of the components remain the same, i.e. a mercury atom remains a mercury atom and remains highly toxic, vaporizing and leaching out of the amalgam. Guzzi, et al, The Lancet, 360:2081, Dec 21/28,2002;

Pro: If mercury is emitted from amalgams, it is only in very minute amounts. The average amalgam weighs 1 gram and is 50% mercury.

Con: As much as 50% of the mercury in an amalgam has been found to have vaporized after 5 years, and 80% after 20 years. Pleva J, "Dental Mercury - A Public Health Hazard"

Pro: The small amounts of mercury emitted from amalgams are not bioavailable.

Con: Mercury vapor from amalgam is the single largest source of systemic mercury intake for persons with amalgam fillings. WHO Document 118, p.36, 1991;

Pro: No other country has banned the use of dental amalgam.

Con: Most other developed countries have issued limited bans, or mandated health warnings regarding the use of mercury amalgam including: Canada, Great Britain, France, Austria, Norway, Sweden, Switzerland, Japan, Australia and New Zealand. Swedish National Dept. of Health, Mercury Amalgam Review Panel, 1987

Has the US Food and Drug Administration Approved the Mixed Dental Amalgam?

To avoid classifying mixed amalgam, the FDA took the position that mixed amalgam was a “reaction” product manufactured by the dentist when he or she mixed the mercury with the alloy before placing it in your tooth.

Is there enough mercury in an amalgam filling to continue a low chronic-level exposure for years?

The answer is yes. For example, if a single large amalgam filling contained 1 gram of mercury (1 million micrograms) and lost a significantly toxic 10 micrograms per day there would be enough mercury for 100,000 days or about 274 years of exposure.

Does mercury emit from amalgams at a rate that should cause concern?

The answer is yes. Dental amalgams, or “silver fillings” as organized dentistry calls them, are approximately 50% mercury by weight and

it is quite easy to demonstrate that mercury vapors readily emit from these fillings.

Does mercury cause damage?

The mercury challenges systemic functions of every individual and of developing fetuses, so it can lead to health problems and fetal malformations. Mercury leakage and its subsequent pathophysiologic effects are most often slow, insidious processes. So health problems caused by dental mercury poisoning are perceived many years after the amalgams are placed. Lorscheider, F.L., Vimy, M.J., and Summers, A.O. *“Mercury Exposure from Silver Tooth Fillings: Emerging Evidence Questions a Traditional Dental Paradigm.”* FASEB Journal (April 1995).

If you decide to have mercury fillings removed, you need to take high doses of antioxidants before, during and after removal of mercury. Start approximately one week before mercury removal.

Below is a general protocol for mercury removal which may be tailored to suit the individual needs of the patient.

Mercury Detox Program

Spirulina and fresh Cilantro (Chinese parsley) are foods that seem to have an affinity for mercury and should be eaten in large quantities during mercury removal and as general supplementation. A good way to take this is to place some in a blender with some sea salt and olive oil. (Garlic can be added but then garlic can be added to anything.) Blend until creamy and take one tablespoon with meals. This can also be made into a salad dressing.

Key References

- Khatoon, S., Campbell, S.R., Haley, B.E. and Slevin, J.T. Aberrant GTP b-Tubulin Interaction in Alzheimer's Disease. Annals of Neurology 26, 210-215 (1989).
- David, S., Shoemaker, M., and Haley, B. Abnormal Properties of Creatine kinase in Alzheimer's Disease Brain: Correlation of Reduced Enzyme Activity and Active Site Photolabeling with Aberrant Cytosol-Membrane Partitioning. Molecular Brain Research 54, 276-287 (1998).
- Duhr, E.F., Pendergrass, J. C., Slevin, J.T., and Haley, B. HgEDTA Complex Inhibits GTP Interactions With The E-Site of Brain b-Tubulin Toxicology and Applied Pharmacology 122, 273-288 (1993).
- Pendergrass, J.C. and Haley, B.E. Mercury-EDTA Complex Specifically Blocks Brain b-Tubulin-GTP Interactions: Similarity to Observations in Alzheimer's Disease. pp98-105 in Status Quo and Perspective of Amalgam and Other Dental Materials (International Symposium Proceedings ed. by L. T. Friberg and G. N. Schrauzer) Georg Thieme Verlag, Stuttgart-New York (1995).
- Pendergrass, J. C., Haley, B.E., Vimy, M. J., Winfield, S.A. and Lorscheider, F.L. Mercury Vapor Inhalation Inhibits Binding of GTP to Tubulin in Rat Brain: Similarity to a Molecular Lesion in Alzheimer's Disease Brain. Neurotoxicology 18(2), 315-324 (1997).
- Pendergrass, J. C., Cornett, C.R., David, S. and Haley, B. Mercury and Zinc Levels in Frontal Pole and Hippocampus of Alzheimer's Disease Brain: Relationship to Abberant GTP-b-Tubulin Interactions. Submitted to Neurotoxicology (1998).

- Jayaram, B. and Haley, B.

Identification of Peptides Within the Base Binding Domains of the GTP and ATP Specific Binding Sites of Tubulin. *J. Biol. Chem.* **269** (5) 3233-3242 (1994).

- Olcott, M. and Haley, B. I

Identification of Two Peptides From the ATP-Binding Domain of Creatine Kinase. *Biochemistry*, **33**, 11935-11941 (1994).

- Tumani, H., Shen, G-Q., Peter, J. and Bruck, W. Glutamine Synthetase in Cerebrospinal Fluid, Serum and Brain: A Diagnostic Marker for Alzheimer Disease? *Arch. Neurol.* **56**, 1241-1246, 1999.

- Olivieri, G., Brack, Ch., Muller-Spahn, F., Stahelin, H.B., Herrmann, M., Renard, P; Brockhaus, M. and Hock, C.

Mercury Induces Cell Cytotoxicity and Oxidative Stress and Increases b-amyloid Secretion and Tau Phosphorylation in SHSY5Y Neuroblastoma Cells. *J. Neurochemistry* **74**, 231-231, 2000.

- Leong, CCW, Syed, N.I., and Lorscheider, F.L.

Retrograde Degeneration of Neurite Membrane Structural Integrity and Formation of Neurofibrillary Tangles at Nerve Growth Cones Following In Vitro Exposure to Mercury. *NeuroReports* **12** (4):733-737, 2001.

- Schubert, J., Riley, E.J. and Tyler, S.A.,

Combined Effects in Toxicology—A Rapid Systemic Testing Procedure: Cadmium, Mercury and Lead. *J. of Toxicology and Environmental Health* **v4**:763-776, 1978.