



The "Mercury Toxicity" Scam: How Anti-Amalgamists Swindle People

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More than half a century ago, Orson Welles panicked his radio audience by reporting that Martians had invaded New Jersey. On December 23, 1990, CBS-TV's "60 Minutes" achieved a similar effect by announcing that toxins have invaded the American mouth. There was, however, a big difference. Welles' broadcast was intended to be entertaining. The "60 Minutes" broadcast, narrated by veteran reporter Morley Safer, was intended to alarm—to persuade its audience that the mercury in dental fillings is a poison. It was the most irresponsible report on a health topic ever broadcast on network television.

Mercury is a component of the amalgam used for "silver" fillings. The other major ingredients are silver, tin, copper, and zinc. When mixed, these elements bond to form a strong, stable substance. The difference between bound and unbound chemicals can be illustrated by a simple analogy. Elemental hydrogen is an explosive gas. Elemental oxygen is a gas that supports combustion. When combined, however, they form water, which has neither of these effects. Amalgam's ingredients are tightly bonded to each other. Although the types of chemical bonds in water and amalgam differ, saying that amalgam will poison you is just as wrong as saying that drinking water will make you explode and burst into flames.

Very sensitive instruments can detect billionths of a gram of mercury vapor in the mouth of a person with amalgam fillings. However, the minuscule amount of mercury the body absorbs from amalgams is far below the level that exerts any adverse health effect [1-6]. One study found that people with symptoms they related to amalgam fillings did not have significant mercury levels. The study compared ten symptomatic patients and eight patients with no reported health complaints. The symptom group had neither a higher estimated daily uptake of inhaled mercury vapor, nor a higher mercury concentration in blood and urine than in the control group. The amounts of mercury detected by the tests were trivial [6]. Some studies have shown that the problems patients attribute to amalgam restorations are psychosomatic in nature and have been exacerbated greatly by information from the media or from a dentist [7-11]

An extensive review published in 1993 by the U.S. Department of Health and Human Services concluded that "there is scant evidence that the health of the vast majority of people with amalgam is compromised or that removing fillings has a beneficial effect on health." [12] In January 1998, the American Dental Association Council on Scientific Affairs issued a report on dental amalgam safety, with emphasis on studies that had been published since the 1993 review. The report concluded:

Millions of people have amalgam restorations in their mouths, and millions more will receive amalgam for restoring their carious [decayed] teeth. Over the years, amalgam has been used for dental restorations without evidence of major health problems. Newly developed techniques have demonstrated that minute levels of mercury are released from amalgam restorations, but no health consequences from exposure to such low levels of mercury released from amalgam restorations have been demonstrated. Given the available scientific information and considering the demonstrated benefits of dental amalgams, unless new scientific research dictates otherwise, there currently appears to be no justification for discontinuing the use of dental amalgam [13].

Dubious Claims

Despite these facts, a small but vocal group of dentists, physicians and various other "holistic" advocates claim that amalgam fillings are a health hazard and should be replaced. The leading advocate of such advice is Hal Huggins, D.D.S., of Colorado Springs, Colorado. Dr. Huggins graduated from the University of Nebraska School of Dentistry in 1962 and received a master of science degree from the University of Colorado in 1989.

Huggins has held many seminars for dentists on his notions about "balancing body chemistry" by nutritional methods. The basic premise of this approach is that many diseases and conditions can be prevented or cured by diet alone. In 1975, the American Dental Association Council on Dental Research concluded that there was little or no evidence to support Huggins' dietary claims.

In 1985 Huggins and his wife Sharon published a book, *It's All In Your Head*, which combines the discredited theories of balancing body chemistry with the assertion that mercury in silver fillings is toxic. The book states that he became interested in this subject in 1973 when a dentist from Argentina told him that leukemia, Hodgkin's disease, bowel disorders and a host of other diseases had been cured by removing silver-mercury amalgams. Huggins says early results were "sporadic and unpredictable. At best only 10% of the patients responded." Later he claimed that some fillings have "negative electrical current" and that removing fillings in the proper sequence and supplementing with nutrients would improve success rates. Since then he has crusaded against the use of amalgam and limited his practice to advice on these matters.

An information packet distributed during 1985 by Huggins' Toxic Element Research Foundation claims that, "Everyone reacts to the presence of mercury Some 80% of the population will experience only a slight change of their immune system which will result in three colds per winter instead of only two, or an elevation of 2000-3000 count in their white blood cells. Those sensitive 20% might experience a drastic drop in immunocompetence to the point of autoimmune disease, or an elevation of white blood cells of 30,000 or more."

According to Huggins, "sensitive" individuals can develop emotional problems (depression, anxiety, irritability), neurological disorders (facial twitches, muscle spasms, epilepsy, multiple sclerosis), cardiovascular problems (unexplained rapid heart rate, unidentified chest pains), collagen diseases (arthritis, scleroderma, lupus erythematosus), allergies, digestive problems (ulcers, regional ileitis), and immunologic disorders (which he claims include leukemia, Hodgkin's disease, and mononucleosis). He recommends replacing mercury fillings with other materials and taking vitamins and other supplements to prevent trouble following amalgam removal.

Dubious Tests

Anti-amalgam dentists typically use a mercury vapor analyzer to convince patients that "detoxification," is needed. To use the device, the dentist asks the patient to chew vigorously for ten minutes, which may generate tiny amounts of mercury from the fillings. Although this exposure lasts for just a few seconds and most of the mercury will be exhaled rather than absorbed by the body, [the machines give a falsely high readout](#), which the anti-amalgamists interpret as dangerous.

The most commonly used analyzer is the Jerome mercury detector (pictured to the right), an industrial device which multiplies the amount of mercury it detects in a small sample of air by a factor of 8,000. This gives a reading for a cubic meter, a volume far larger than the human mouth. The proper way to determine mercury exposure is to measure urine levels, which indicate how much the body has absorbed and then excreted. Scientific testing has shown that the amount of mercury absorbed from fillings is too small to be significant.



Some anti-amalgamists administer a "patch test" with a dilute solution of mercuric chloride. Redness of the skin or any of a large number of other symptoms are then misinterpreted as signs of "mercury poisoning," and the

patient is advised to have all amalgam fillings removed.

Some anti-amalgamists have used a voltmeter to measure supposed differences in the electrical conductivity of the teeth. One such device—the "[Amalgameter](#)"—was sold by Huggins during the early 1980s. In 1985, after another company took over its marketing, the FDA concluded that the device was misbranded because accompanying literature alleged that it could be used to recommend the removal of dental fillings. In a regulatory letter, the agency said:

There is no scientific basis for the removal of dental amalgams for the purpose of replacing them with other materials as described in your leaflet We consider your device as being directly associated with a process that may have adverse health consequences when used for the purposes for which it was intended.

FDA action appears to have driven Amalgameters from the marketplace [14]. However, many anti-amalgam dentists use [other devices](#) for the same purpose.

Dubious Consultations

In addition to seeing patients, Huggins operated a consultation service through which patients were evaluated and received advice by telephone or mail. The advice centered around a "Mercury Assist Program," based on the results of hair analysis, a complete blood count, a chemistry profile, a urine mercury test, and a detailed questionnaire about diet, lifestyle, past medical history, and current symptoms. The resultant data were incorporated into a lengthy report containing recommendations for diet, supplementation, lifestyle, and amalgam removal. Huggins claims that to successfully rid the body of mercury, one must be on a restrictive diet, take supplements that stimulate the cell membrane, and have the mercury fillings removed in the proper sequence.

In the late 1980s, when Huggins charged \$1,500 for an in-office consultation and \$378 for the assist program, I went through the assist program by mail. The report claimed that my urine mercury level "suggested toxicity" (because it was too low!), and that my hair sample showed "deficiencies" in chromium, iron, manganese, potassium, and lithium, and "excesses" in calcium, zinc, and copper. The report included 17 pages of biochemical nonsense related to these findings and more than 30 pages of other advice. The accompany instructions said to contact Huggins' facility for the name of a dentist who would replace my amalgam fillings. The report recommended that I begin taking vitamin C (3 grams per day), potassium, and three of Huggins' special supplement products two days before the old fillings were removed and that I have blood, urine, and hair tests three weeks after removal is completed. The cost of the follow-up interpretation would be \$100 plus the cost of tests done through Huggins's office.

Neither [hair analysis](#) nor computerized nutrition questionnaires provide a legitimate basis for determining the body's nutritional state or for recommending supplements. Nor can a low [urine mercury level](#) "suggest toxicity." Robert S. Baratz, M.D., D.D.S., an expert on dental materials, has reviewed about a dozen "Mercury Assist" reports and concluded: "They vary only slightly from person to person. All advise that the sender has mercury poisoning. The Assist Program was a scam." [15]

Huggins also claimed that many alternative dental materials contain toxic substances and recommended his [Serum Compatibility Testing™](#) to determine which materials were least likely to cause trouble. This test is also invalid [16].

Dubious Ethics

There is overwhelming evidence that amalgam fillings are safe. Since 1905, although billions have been used successfully, fewer than fifty cases of allergy to the amalgam have been reported in the scientific literature. In 1986, the American Dental Association Council on Ethics, Bylaws, and Judicial Affairs concluded that "removal of amalgam restorations solely for the alleged purpose of removing toxic substances from the body, when such treatment is performed at the recommendation of the dentist, presents a question of fraud or quackery in all but an exceedingly limited spectrum of cases." The ruling was triggered in part by the case of an Iowa dentist who

had extracted all 28 teeth of a patient with multiple sclerosis. The dentist received a 9-month license suspension followed by 51 months of probation.

Removing good fillings is not merely a waste of money. In some cases, it results in loss of teeth. In 1985 a \$100,000 settlement was awarded to a 55-year-old California woman whose dentist removed her silver fillings. Based on testing with a [Dermatron](#) (a phony electrodiagnostic device), the dentist claimed that six of her fillings were a "liability" to her large intestine [17]. In removing the fillings from five teeth, the dentist caused severe nerve damage necessitating root canal therapy for two teeth and extraction of two others.

"Mercury-free" dentists typically use scare tactics to promote their services. For example, a February 1998 newspaper ad by a Michigan dentist stated: "After ten years, 85% of the mercury can be lost. Should we allow our bodies to become a toxic waste dump?" The National Council Against Health Fraud has pointed out that practitioners who do not wish to use amalgam can still practice ethically by giving appropriate advice and referring patients elsewhere when amalgam is the best choice. But advertising a practice as "mercury-free" is unethical because it falsely implies that amalgam fillings are dangerous and that "mercury-free" methods are superior [18].

What makes anti-amalgamists tick? James R. Berry, associate publisher of the American Dental Association's newspaper, has characterized them this way:

We know that some few of them are sincere, though confused by the Scientific Method. They read nonsense and accept it. Others have clearer vision and no excuses. They see plainly enough, and what they see is opportunity, which comes in green. When the universal quest for health collides with greed, the collision is loud and dangerous. People get hurt by those they expect, at minimum, to do no harm.

The anti-amalgamists—with their mercury meters . . . would be comical figures if they weren't so insidious. They prey on easy targets: the desperately ill grasping for hope against a dark alternative [19].

Dr. Baratz has also pointed out:

Dentists who engage in attempting to "diagnose" or "treat" "heavy metal toxicity", or who test patients for heavy metals by any means are not practicing dentistry. These activities fall outside the scope of dental licensure. Any dentist who believes a patient requires diagnosis or treatment for any medical condition outside of the scope of dentistry is obliged to make a referral to a physician or other health professional as appropriate. Failure to make such a referral is considered negligent practice in most jurisdictions [20].

Dubious Research

In 1990, researchers at the University of Calgary in Alberta, Canada, reported on an experiment in which they placed 12 amalgam fillings in each of six sheep. Within two months, the researchers claimed, the sheep lost much of their kidney function while a control group (two sheep) had lost none. *Newsweek*, which accepted the report at face value, described it as the first evidence that the amount of mercury escaping from fillings and winding up in body tissues is harmful. (*Newsweek's* article was coauthored by very same writer who had panned fluoridation earlier in the year.) However, experts in biochemistry, toxicology, dentistry, and veterinary medicine consider the sheep study meaningless.

Two weeks before the *60 Minutes* program aired, Dr. Baratz mailed a warning to its producer:

- The Canadian researchers prepared their amalgam with a method that has been obsolete for more than 40 years. The resultant amalgam contained excess mercury and was softer and therefore more easily worn by chewing, especially in a cud-chewing animal such as a sheep.
- The amalgams were placed in opposing teeth, so they would grind against each other. This enhanced the

already enhanced rate of release of materials.

- Because rubber dams were not used when the fillings were placed, scrap amalgam was free to enter the sheeps' mouth and be swallowed.
- The methods used to detect and calculate the amount of mercury absorbed were not valid.
- Although the researchers claimed that body mercury levels rose during the experiment, they had not measured the levels that were present in the beginning. The data actually showed that the animals swallowed a lot of free mercury during the placement of the fillings.
- Their claim of kidney toxicity was based on urinary findings that show just the opposite of what is known to occur in mercury poisoning in humans.

Baratz and at least one other knowledgeable critic also spoke by telephone to "60 Minutes" producer Patti Hassler before the program was aired. But they encountered a stone wall.

Toxic Television

The "60 Minutes" segment on dental amalgam, which was considerably longer than most of its reports, was called "Poison In Your Mouth." It interspersed remarks from an American Dental Association representative with statements by three amalgam critics and four patients who claimed to have made a remarkable recovery from arthritis or multiple sclerosis after their amalgam fillings were removed. The most powerful segment featured a woman who said that her symptoms of multiple sclerosis had disappeared overnight. The fact that arthritis and multiple sclerosis normally have ups and downs was not mentioned during the program. Neither was the fact that removal of fillings temporarily *raises* body mercury load, so that no "overnight cure" could possibly be caused by mercury removal [21,22].

The American Dental Association's representative was interviewed by Morley Safer at ADA headquarters. It was obvious from Safer's questions that the program would be a hatchet job. After *American Dental News* published a lengthy article about the interview, a sharp-eyed dentist noted that an accompanying photograph showed Safer smoking a cigarette despite the fact that ADA headquarters has an obvious no-smoking policy.

After the program was aired, I wrote to Don Hewitt, executive producer of *60 Minutes*, explaining why "the overnight cure" was a hoax. My letter also asked whether Morley Safer had mercury fillings and, if so, whether he followed his own advice and had them removed. CBS's director of audience services replied:

Our aim was not to condemn dentists or their use of silver amalgam fillings. . . . Rather, the *60 MINUTES* staff made every effort to ensure that our report was balanced in presenting arguments from both sides of the issue.

Not surprisingly, the broadcast triggered an avalanche of queries to dentists and induced many viewers seek replacement of their fillings with other materials. *Consumer Reports*, *American Health*, *Prevention*, and many health newsletters reassured their readers that amalgam is safe. But the program's damage cannot be undone. In August, *Consumer Reports* published the following letter:

"My mother, who was diagnosed with Lou Gehrig's disease more than two years ago, had her mercury fillings removed immediately after the show aired. After she had spent \$10,000 and endured more than 18 hours of dental work so painful she once fainted in the waiting room, her condition did not improve. The pain was outweighed only by the monumental disappointment she and the whole family experienced as we lived through one false hope."

In 1990, Consumer Reports Books published [Health Schemes, Scams, and Frauds](#), a book on quackery that I helped to write. The book concluded:

In CU's view, dentists who purport to treat health problems by ripping out fillings are putting their own economic interests ahead of their patients' welfare. The false diagnosis of mercury-amalgam toxicity has such harmful potential and shows such poor judgment on the part of the practitioner that CU believes dentists who engage in this practice should have their license revoked [23].

In recent years, Hal Huggins has also targeted root canal therapy, claiming that it can make people susceptible to arthritis, multiple sclerosis, amyotrophic lateral sclerosis, and other autoimmune diseases. As with amalgam fillings, there is no objective evidence that teeth treated with root canal therapy have any adverse effect on the immune system or any other system or part of the body. Huggins's dental license was revoked in 1996. During the [revocation proceedings](#), the administrative law judge concluded:

- Huggins had diagnosed "mercury toxicity" in all patients who consulted him in his office, even some without mercury fillings.
- He had also recommended extraction of all teeth that had had root canal therapy.
- Huggins's treatments were "a sham, illusory and without scientific basis." [24]

He then worked as a part-time consultant at the Center for Progressive Medicine, a Mexican clinic that claimed to treat "diseases frequently created or exacerbated by adverse reactions to common dental materials and procedures."

For Additional Information

- [NCAHF Position Paper on Amalgam Fillings](#)
- [Dental Amalgam](#) page of the American Dental Association
- [Dental Amalgam Fact Sheet](#) of the California Dental Association
- [Serum Compatibility Testing](#)
- [Hugnet](#): Current views and activities of Hal Huggins
- [Consumers for Dental Choice](#): A group crusading to protect dentists who promote or practice what it calls "mercury-free dentistry."
- ["Holistic Dentistry"](#)

References

1. Mackert JR. [Dental amalgam and mercury](#). Journal of the American Dental Association 122:54-61, 1991.
2. The mercury in your mouth. Consumer Reports 56:316-319, 1991.
3. Olsson S, Bergman M. [Daily dose calculations from measurements of intra-oral mercury vapor](#). Journal of Dental Research 71:414-423, 1992.
4. Mackert JR. [Factors affecting estimation of dental amalgam exposure from measurements of mercury vapor in levels in intraoral and expired air](#). Journal of Dental Research 66:1175-1180, 1987.
5. Mackert JR Jr, Berglund A. [Mercury exposure from dental amalgam fillings: absorbed dose and the potential for adverse health effects](#). Critical Review of Oral Biology and Medicine 8:410-436, 1997.
6. Berglund A, Molin M. [Mercury vapor release from dental amalgam in patients with symptoms allegedly caused by amalgam fillings](#). European Journal of Oral Science 104:56-63, 1996.
7. Herrstrom P, Hogstedt B. [Clinical study of oral galvanism: No evidence of toxic mercury exposure but anxiety disorder an important background factor](#). Scandinavian Journal of Dental Research 101:232-237, 1993.
8. Lindberg NE, Lindberg E, Larsson G. [Psychological factors in the etiology of amalgam illness](#). Acta Odontologica Scandinavica 52:219-228, 1994.
9. Bagedahl-Strindlund M and others. [A multidisciplinary clinical study of patients suffering from illness associated with mercury release from dental restorations: Psychiatric aspects](#). Acta Psychiatr Scandinavica 96:475-482, 1997.
10. Malt UF and others. [Physical and mental problems attributed to dental amalgam fillings: a descriptive study of 99 self-referred patients compared to 272 controls](#). Psychosomatic Medicine 59:32-41, 1997.
11. Bailer J and others. [Adverse health effects related to mercury exposure from dental amalgam fillings: toxicological or psychological causes?](#) Psychological Medicine 31:255-263, 2001.
12. Benson JS and others. [Dental Amalgam: A Scientific Review and Recommended Public Health Strategy for Research, Education and Regulation](#). Washington, D.C., 1993, US Public Health Service.

13. ADA Council on Scientific Affairs. [Dental amalgam: Update on safety concerns](#). Journal of the American Dental Association 129:494-501, 1998.
14. Dentist's device. FDA Consumer 23(8):35-36, 1989.
15. Baratz RS. Personal communication to Stephen Barrett, M.D., December 21, 1999.
16. Baratz RS. ["Serum compatability" testing](#). Quackwatch, posted Dec 23, 1999.
17. Sherry v Doe. Calif Sonoma County Superior Court, No. 134740, March 1, 1985.
18. [NCAHF Position Paper on Amalgam Fillings](#). NCAHF Web site, Oct 2002.
19. Berry JR. False hope suffers a setback. ADA News 27(22):4, 1996.
20. Baratz RS. [Key points about amalgam safety](#). Modified from testimony to the Florida Board of Dentistry, September 29, 2001.
21. Molin M and others. [Mercury, selenium and glutathione peroxidase before and after amalgam removal in man](#). Acta Odontologica Scandinavica 48:189-202, 1990.
22. Sandborgh-Englund G, Elinder C, Langworth S, Schutz A, Ekstrand J. [Mercury in biological fluids after amalgam removal](#). Journal of Dental Research 77:615-624. 1998.
23. Barrett S and the editors of Consumer Reports Books. [Health Schemes, Scams, and Frauds](#). Mount Vernon, N.Y.: Consumer Reports Books, 1990.
24. Connick N. Before the State Board of Dental Examiners, State Board of Colorado. Case No. 95-04. [In the matter of the disciplinary proceedings regarding the license to practice dentistry in the State of Colorado of Hal A. Huggins, D.D.S., License No. 3057](#). Feb 29, 1996.

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