

Why the amalgam debate just won't go away

What with one claim or another questioning the safety of dental amalgam every few years during the past two decades, small wonder at least two congressmen now want to abolish the country's most economic and durable restorative material. If the allegations aren't true, why would anyone continue the debate for so many years? A closer look at what motivates four anti-amalgamist leaders attempts to answer these questions.

[*By Dennis Spaeth*](#)

Though the four individuals selected for this story are by no means the only leaders in this debate, they are among the most prominent. And, as the following vignettes show, each of these leaders plays a unique role in this ongoing drama.

The litigator: "Shawn Khorrami, a California attorney who is the lead litigator behind several lawsuits against the ADA, some state dental associations and a host of dental amalgam manufacturers.

The scientist: "Boyd Haley, a professor and chairman of the chemistry department at the University of Kentucky.

The lobbyist: "Charles Brown, a lobbyist and an attorney who serves as national counsel of Consumers for Dental Choice, a coalition of anti-amalgam groups.

The evangelist: "Dr. Hal Huggins, who has reached an untold number of dentists, physicians and patients since he began spreading his anti-amalgam message in 1974.

The scientist

Boyd Haley, Ph.D., professor and chairman of the chemistry department at the University of Kentucky, is happy the ADA is suing Khorrami for defamation because now the association has to go to court and discuss the issues.

"I want to see them put their expert witnesses on the stand," says Haley, "and then you walk up and lay 100 papers in front of them that talk about mercury toxicity and talk about mercury coming out of amalgam fillings."

To Haley, the great amalgam debate is simple: Mercury is toxic. Keep it out of the mouth. End of story.

"Can I prove that chronic exposure causes any one specific disease? Well, that takes a long time to do that kind of research. It's hard to prove that," says Haley, who even some of his critics say has earned a solid reputation as a researcher. He's received millions in funding from the National Institutes of Health between 1975 and 2000 for various research projects that led him to develop photoaffinity labeling with nucleotides.

It was his work with photoaffinity labeling while researching Alzheimer's disease that drew him to the amalgam debate in about 1992. Shortly after publishing a study that found mercury caused aberrancies in rat brains similar to those found in human brains with Alzheimer's disease, he came under attack by the dental profession.

"Then I started being called a quack and a crackpot," he recalls. "And that's what really got me irritated, because I was being very cautious."

Haley, for instance, doesn't say removing amalgam will cure any disease. On the other hand, he does suggest that doing so would reduce a person's exposure to mercury and that would take "an oxidated stress off of the body" a very significant one."

He admits that he's suggested to people with one disease or another that he would have his amalgam removed if he had the same problem. "When they do, they get better," he notes.

When his wife, Sandra, had her amalgam removed, he says her energy level increased.

Anecdotal evidence aside, Haley simply can't understand the ADA's position on amalgam, which is that it is safe and no scientific evidence exists that shows any cause-and-effect relationship between mercury in dental amalgam and any disease. "If you say wait until you prove that this toxic material is really reaching a concentration to harm a significant number of human beings," says Haley, "it seems to me that that's kind of a heartless way to look at protecting the public."

Like Khorrami, Haley discounts the NIH amalgam study on children designed to address the very questions Haley and others like him have raised. He says he is suspect of the National Institute of Dental and Craniofacial Research and its role in that study.

While Haley could not decide who should do such a study, he is emphatic that the ADA should admit it has made a mistake and change it, instead of belittling people who have done research.

"I have a good reputation," Haley adds. "I've published too much that everybody has repeated, and I haven't had to write a retraction ever in my life that I did anything that wasn't right."

What's more, he continues, he published a paper in 1992 that suggested glutamine synthetase was a possible diagnostic marker for Alzheimer's disease. Last March, Haley says, other researchers published a study that found that to be the case. "The increase of the release of that enzyme from the brain tissue and the inhibition of it is due to mercury toxicity.

"So I have a history of being right when I talk about things. I'm very careful."

In the years since publishing that first paper suggesting a link between mercury and Alzheimer's disease, Haley says he's tried to share the information with the appropriate government agencies and the ADA, hoping that they would then take care of the alleged amalgam problem. "But you write letters and they don't even respond to them.

"So now I've become more of an activist because I have lost total respect for the dental branch of the Food and Drug Administration and for the ADA," he continues. "If they were honest people, they'd invite me to a talk and beat me up."

As for the government reviews of the science questioning the safety of amalgam, Haley discounts them because he says they were conducted by a committee consisting largely of dentists and material scientists.

If anyone believes anything the government says anymore, then Haley is mistaken. One of the U.S. Public Health Service reviews evaluated 175 citations related to the potential adverse effects of mercury in dental amalgam. "The citations represented an assortment of literature, including peer-reviewed publications, non-refereed publications, untranslated foreign documents, print media articles and letters to the editor," according to the FDA. Scientists from the Office of Science and Technology "performed a triage of the citations" so that evaluation could focus on studies that met a set of criteria established by the review group.

"This process resulted in 57 articles, which were reviewed by scientific experts from FDA, CDC and NIH representing disciplines of general toxicology, neurotoxicology, immunotoxicology, epidemiology, dental materials and clinical dentistry," the FDA reports. "These experts commented on the strengths and weaknesses of each paper, the appropriateness of methodologies, control groups and statistics, and whether the conclusions were supported by the data. The conclusions drawn by these experts were overwhelmingly unanimous. None of the reviewers suggested that any study under review would indicate that individuals with dental amalgam restorations would experience adverse health effects."

All lies, according to Haley. To counter such alleged misinformation, Haley collected a myriad of anti-amalgamist studies, papers and other information and posted all of it to the Web site of ALT Inc., a company he co-founded in 1997 that, among other things, sells nucleotide photoaffinity probes to researchers.

"I put that mercury stuff on (the Web site) because I got damned tired of the ADA saying there's no science," he says. "It's just something I feel compelled to do because I have a real distaste for people who lie. And the ADA right now is lying to Congress telling them that this is just junk science."

That these reviews can discount the research by anti-amalgamists and that the ADA refers to it as "junk science" is particularly disturbing to Haley. And he plans to retaliate, suggesting that he has considerable influence among the anti-amalgamists to organize a massive letter-writing campaign to Congress. "Even I'm surprised at how much clout I have, not that I have a lot of money or anything, but people think that I'm a very honest person and I pride myself on that. I'm going to make sure Congress gets flooded with a very short request from voters." He wants political leaders to go to Medline on the Internet and type in "mercury toxicity" and "amalgam" and see how much of the resulting list of research links looks like junk science.

Like Khorrami, Haley seems convinced that the ADA would discredit any science questioning the safety of amalgam because of the association's economic interest in amalgam. Aside from the money manufacturers pay to have their amalgam products considered for the ADA Seal, Haley claims that dentists earn more by using amalgam than they could by switching to a composite resin, despite the fact that composite resin restorations clearly are more expensive to patients. Amalgam, he says, has a higher profit margin because dentists can produce more amalgam restorations in a day than they can composite resin fillings.

As quick as he is with theories about the economic interests of the ADA and dentists, Haley is even quicker to disavow any financial interest of his own in the ongoing amalgam debate. When asked about the products he sells through the ALT Inc. Web site, Haley insists that "you won't find one thing on there that we sell that makes money off of mercury."

But he does make some money on the message that amalgam is dangerous. The site sells videotapes of various presentations from an ALT-sponsored conference. Several of Haley's presentations on mercury toxicity are available for purchase on the site.

In addition, the ALT site also sells Toxicity Prescreening Assays (TOPAS) to dentists. As the site notes, TOPAS allows dentists "to quickly distinguish between current disease activity and old damage (deep pockets), something not possible with simple periodontal probings." In short, the test reportedly can measure the amount of toxic thiols produced by periodontal disease bacteria.

And, according to a paper authored by Haley, "the reaction of oral mercury from amalgams and the reaction of this mercury with toxic thiols produced by periodontal disease bacteria very likely enhances the toxicity of the mercury being released."

Though this statement would seem to indicate that the TOPAS device could be used by dentists to illustrate to patients the severity of their mercury toxicity exposure, Haley dismissed the notion. "This is something that would escape any but the brightest of them (dentists)," he says.

But, he adds, "there is no doubt" that the thiols produced by periodontal disease bacteria and measured by TOPAS could be used to indicate to a patient that his or her mercury vapor exposure will be more severe.

Haley notes, though, that the site really doesn't make any significant income from the videotapes or TOPAS. The main income is from the sale of photoaffinity nucleotide analogs to researchers.