

Are your teeth toxic?

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The mercury in 'silver' fillings would be hazardous waste in a river----yet it's sitting in your mouth

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A professional musician from Arlington Heights suffers from mysterious rashes and lip blisters. A dental hygienist in Hoffman Estates battles migraines. And a social worker in Prospect Heights is diagnosed with multiple sclerosis.

All three tried treating their ailments using a controversial method: by having dentists remove and replace their so-called "silver" amalgam tooth fillings, which contain about 50 percent mercury. And all three swear they experienced life-changing health improvements.

Their personal testimonies are part of what makes dental amalgam, the silver lining for hundreds of millions of American mouths, one of the most divisive issues in dentistry. Though it's one of the oldest materials in oral health care--used by people of all ages for the last 150 years--anti-mercury groups are pushing the startling message that mercury residing in the mouth can leach into the body and cause illness.

"I thought my career was over," said Arlington Heights' Matt Comerford, now a trumpet player with the Lyric Opera who was suffering from painful sores along his gums. He began investigating the metals in his mouth and eventually had nine silver fillings replaced with a mercury-free alternative material.

"Within a week [of having the amalgams replaced], everything healed," Comerford said.

Amalgam, most dentists admit, is crude and ugly, but they say it's a valuable option because it's strong, durable and relatively cheap.

And studies have shown that there is insufficient evidence to link it to health problems (with the exception of allergic reactions), according to the American Dental Association and several federal agencies, including the Centers for Disease Control and Prevention.

Regardless, anti-mercury groups are appalled by the notion that the toxic element, which is considered a hazardous waste by the Environmental Protection Agency, is safe when it's packed inside a tooth. They argue that although it was once thought to be inert inside the mouth, studies now show that mercury can be emitted in minute amounts of vapor and absorbed by the patient through inhalation and ingestion.

At Doctor's Data, a Chicago lab that specializes in trace-metals analysis, clinicians have found that the amount of mercury in a person's stool is highly correlated to the number of amalgams in the mouth.

"What stool testing drives home is that parts of the amalgams don't stay in the teeth and we're swallowing mercury," said Dean Bass, a chemist at Doctor's Data and a scientist at Argonne National Laboratories. "But it doesn't necessarily tell you how much mercury the body absorbs."

Mercury-free options for teeth

A major debate surrounding silver (mercury) amalgam fillings is whether they cause the teeth to crack, creating the need for root canals and other major surgery. Lincoln Park dentist Gerilyn Alfe believes they do, just one reason she has embraced mercury-free alternatives to amalgams for the last decade.

"I don't think ripping metal fillings out of everyone's mouth is a good practice," said Alfe of Chicago Smile Spa, "But if they're starting to deteriorate or fracture, I will replace them with bonded, tooth-colored aesthetic fillings."

The use of silver fillings has dropped nearly 40 percent since 1979, thanks in part to better oral care that decreased the overall frequency and size of cavities. Better diagnostics allow dentists to find cavities earlier, when they are much smaller and easier to restore with alternative materials, including porcelain inlays or onlays, and tooth-colored fillings, or composites.

Porcelain inlays or onlays are ceramic or glasslike fillings and crowns. They are popular because "they are bonded to the tooth structure, extremely strong and many people can expect 15 to 20 years service with it," said Peter Dawson Boulder of Aesthetic Dentistry of Atlanta.

The American Dental Association, which says it doesn't promote the use of one restorative material over another, says porcelain is highly resistant to wear but can rapidly wear opposing teeth if its surface becomes rough. They may fracture under "heavy biting loads." And it's important to find a dentist with good technique because the strength depends greatly on the quality of the bond to the underlying tooth structure.

Tooth-colored fillings, another common option, are made from durable plastics called composite resins. First introduced in the 1960s, they've undergone continual improvements in durability, color stability and esthetics. Tooth-colored fillings are actually bonded to teeth; silver/amalgam fillings are not bonded to teeth.

"The technique behind bonding actually strengthens a tooth because the bonding locks in so tightly to the inside walls of the tooth through tiny micro pores," said Chris Kammer of the Center for Cosmetic Dentistry in Middleton, Wis., a mercury-free practice.

But composites aren't for every tooth. They work best in small restorations and low-stress areas and might not be effective with a large cavity or for the chewing surface of a back tooth. They also cost more because they take longer to place.

Unightly amalgams are still considered the most durable and the best choice for large restorations. But amalgam is metal and X-rays cannot penetrate through it, said Dr. Parviz Azar-Mehr, a Prosthodontist and Professor of Clinical Dentistry at the University of Southern California. That means X-rays might not pick up decay under the amalgam filling, and "it can lead to even worse problems than the original cavity the amalgam was meant to treat," said Azar-Mehr, who recommends that silver fillings more than 15 yrs old be replaced with crowns or tooth-covered fillings.

A long-running controversy

The debate over silver amalgam dates at least to 1845, when the now-defunct American Academy of Dental Surgeons asked its members to sign a pledge never to use it. Though amalgam use has been declining since the 1970s because more eye-pleasing options are available and cavities are smaller, federal lawmakers have introduced a bipartisan bill to ban silver/mercury fillings for children and pregnant and nursing women and to phase them out completely in three years.

In California, dentists are required by state law to post a warning that dental amalgams "cause exposure to mercury, a chemical known to the state of California to cause birth defects or other reproductive harm."

"The ADA is wrong that the issue is 'safety.' The issue is 'risk,'" said Charlie Brown, national counsel for Consumers for Dental Choice and Coalition for Mercury-Free Dentistry. He has filed a petition asking the Federal Trade Commission to investigate the ADA and the Connecticut State Dental Association for what the group claims is making false, deceptive and unsubstantiated claims in promoting silver/mercury amalgam.

"On this point scientists agree: Mercury is a virulent neurotoxin that can permanently harm the developing brain of a child or fetus. Yet a recent Zogby poll shows three in five people don't know that 'silver' fillings have mercury," said Brown, who pointed out that silver fillings are in fact mainly mercury.

The ADA staunchly defends the safety of amalgam, still used in about 30 percent of restorations. Amalgam, made by mixing elemental liquid mercury with an alloy powder composed of silver, tin, copper and sometimes smaller amounts of other metals, hardens quickly and tolerates saliva. This makes it useful for treating squirmy young children or special-needs patients who have a hard time sitting still.

Money and ethics

Some dental insurance companies don't cover the more expensive alternatives to amalgam. And because science doesn't definitively link the silver fillings to health problems, the ADA considers it unethical for dentists to tell patients that removing amalgams can improve health.

"Amalgam has the longest history, the most data and the largest number of studies supporting it. Yet time after time, we have to come back and address it," said Dr. Fred Eichmiller, director of the ADA Foundation's Paffenbarger Resource Center, where alternatives to amalgams have been invented.

Critics argue that the issue also is environmental. Mercury is emitted into the air when bodies with mercury fillings are cremated. It gets into the water when fillings are removed and leftover material is not disposed of properly.

"Amalgams don't need to be used in the 21st Century," said Downers Grove dentist Janet Stopka, who uses composite, porcelain and gold.

For consumers, the decision whether to replace amalgams can be a difficult one. Urine, hair and feces can all be tested for mercury levels and chelating agents can pull mercury out of the organs. But the results don't necessarily tell whether there is enough mercury present to pose a health risk and an official diagnosis of "mercury poisoning" can be tentative.

Swapping out old fillings can be expensive; each replacement can cost \$75 to \$200. And there are no guaranteed benefits.

Nevertheless, Dawn Quast, a dental hygienist for Dr. John Rothchild in Hoffman Estates, decided to have four small fillings replaced after she witnessed both small and profound improvements in Rothchild's patients who had amalgams replaced.

"I had a migraine the night I had the last silver one removed and haven't had one since [in 12 years]," Quast said.

Rothchild, a mercury-free dentist, said he doesn't push people into having silver fillings removed.

No guarantees

"I never promise any medical cures because you can't," he said. Instead, he presents both sides of the issue on his Web site and provides patient referrals. "If people come in asking about amalgams, I'll tell them," he said. "If they're there for basic dentistry, I don't say anything."

Linda Brocato of Prospect Heights went to several dentists before she made the difficult decision to have her 16 silver fillings removed. Her problems began in 1980, when she looked in the mirror one morning and noticed her right eye was drooping. Seven years and dozens of health issues later, the former social worker was crippled, diagnosed with multiple sclerosis.

It wasn't until Brocato heard about the Minneapolis-based group Dental Amalgam Mercury Syndrome (DAMS), however, that she began to believe she had mercury poisoning.

Two weeks after she had her last amalgams replaced, Brocato said her slurred speech began to disappear and her strength and balance improved. She knows the symptoms of MS come and go, which could explain her improved health, but she is convinced that removing the silver fillings made a big difference.

"I have five pages of improvements," said Brocato, 56, who is still in a wheelchair but no longer takes medication for MS. She is now one of the Illinois coordinators for DAMS. "I don't know how people can say there isn't evidence."