

Mercury + Health

by Hannah Wallace

Discover the facts about this heavy metal in fish and dental fillings, and learn ways to stay safe

The more we hear about mercury, the scarier it seems. In 2008, the environmental watchdog group Oceana found alarmingly high levels of the neurotoxin in nationwide samples of sushi tuna. Last summer, after years of maintaining that mercury in amalgam teeth fillings was safe, the FDA conceded that these fillings may pose a health risk after all—at least to pregnant women and children. Most recently, researchers found detectable levels of the heavy metal in samples of commercial high-fructose corn syrup (HFCS), the sweetener of choice in countless soft drinks and packaged foods.

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Each year, the United States alone releases about 104 metric tons of mercury into the atmosphere, through the operation of coal-fueled power plants, waste combustors and incinerators, factories that produce chlorine, and a host of other sources. That leaves many to wonder whether they're at risk, how to avoid mercury, and what to do if they suspect they have toxic levels. As you'll see below, some of these issues are steeped in controversy—and that makes it all the more important to stay informed.

What are the main sources of exposure?

Worrisome news about amalgam fillings and HFCS aside, seafood remains the biggest source of exposure to methylmercury, the most toxic form of the metal, says Jane Hightower, M.D., author of *Diagnosis: Mercury*. Large predatory fish contain the most mercury, but experts still debate which fish to avoid. Shark, swordfish, king mackerel, and tilefish appear on both the EPA's and FDA's lists of fish that women who are pregnant or may become pregnant shouldn't eat. But the Environmental Working Group (EWG) and Oceana have criticized the FDA, citing old, inaccurate data and a tendency to be too easily influenced by the fishing industry.

Tuna, for instance, which contains methylmercury in high levels, remains notably absent from the FDA's "do not eat" list. In fact, a joint FDA/EPA advisory says that pregnant women can eat up to two 6-ounce servings of canned light tuna or one 6-ounce serving of albacore per week. (Canned light tuna tends to contain less mercury than albacore does.) But is that good advice? Oceana found that tuna steaks had an average mercury concentration of 0.68 parts per million (ppm)—nearly double the FDA's estimate of 0.38 ppm (a figure derived from a sample of fish taken more than four years ago). Plus, in 2005, an in-

vestigative team from the *Chicago Tribune* found that U.S. tuna companies often sell high-mercury tuna, such as albacore or ahi, as "canned light" tuna. "I used to think chunk light was okay," says Hightower. "But you don't know when you'll get hit with a different type of tuna. It's a roulette game."

Based on its own extensive analysis, the EWG recommends that the FDA expand its "do not eat" list to include tuna, sea bass, halibut, and six additional species. To see the complete list, along with a list of those lowest in mercury, go to ewg.org/safefishlist.

Who's at risk?

Pregnant women should take particular care because mercury easily crosses the blood-brain barrier and placenta, potentially harming a baby's growing nervous system and brain. (Women who may become pregnant should also beware, since mercury can stay in the body for up to a year.) And since the brain continues to develop through young adulthood, children are at increased risk as well.

With all the focus on these two groups, however, "people get the mistaken impression that no one else has to be concerned," says Edward Groth, Ph.D., a science consultant at the Mercury Policy Project, a consumer-advocate group. The elderly and those with autoimmune diseases, high blood pressure, and other heart-disease risk factors may also be more vulnerable. In addition, sensitivity is highly idiosyncratic, note both Hightower and Groth; as with other toxins, some people develop symptoms at lower levels of exposure than others.

What are the health effects of mercury exposure?

Children exposed to methylmercury in utero have trouble with attention, cognitive thinking, memory, language, and fine motor and visual spatial skills, according to the EPA. As for adults, studies show that those with

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high methylmercury levels have troubles with vision, motor function, and memory. Some evidence has linked excess mercury exposure and cardiovascular disease, too. Large epidemiologic studies of adults with methylmercury toxicity have reported symptoms such as impairment of peripheral vision, tingling in the hands and feet, lack of coordination, muscle weakness, and impairment of speech, hearing, and walking. Low-level symptoms may include memory loss, fatigue, insomnia, headache, or joint pain, says integrative physician Jeffrey Morrison. Diagnosis can prove difficult, however, since certain symptoms overlap with those of depression, Lyme disease, and chronic fatigue. “Mercury toxicity is a great imitator,” notes Morrison.

What should I do if I've been diagnosed with toxicity?

First, eliminate the source of exposure, says Morrison; for most people, that means eliminating large predatory fish. “The body has a natural [detoxifying] capacity of its own,” he says. Eating a diet rich in sulfur-containing foods such as cilantro, garlic, and eggs (sulfur binds to mercury) plus plenty of fiber and water can help, as can steaming in a sauna a couple of times a week.

Chelation therapy—taking a synthetic sulfur-containing amino acid that binds to heavy metals—remains controversial; even those who practice it agree that it can be dangerous. Morrison uses it only when a patient has had a large acute exposure to mercury or a long-standing low-level exposure. He stresses that chelation should be a slow and steady process. “If people try to detoxify too quickly, they can make themselves sicker,” he notes. “Mercury can redeposit elsewhere in the body, like the liver, heart, or brain.”

Should everyone be tested?

No. But if you have symptoms of methylmercury toxicity—especially if

you're thinking of getting pregnant and you've been eating several meals of predatory fish a week—you may want to get tested.

Who should worry about amalgam fillings?

There's no clear-cut answer. The FDA now says amalgam fillings, which contain 50 percent elemental mercury, may have neurotoxic effects but doesn't explicitly advise pregnant women and children against them. The FDA does caution people with health conditions that might increase sensitivity to mercury to “discuss options with their health-care practitioner.” According to the American Dental Association, however, scientific evidence shows no association between amalgams and health problems.

Amalgams don't contain the highly toxic methylmercury variety found in predatory fish. They do, however, release mercury vapor when you chew—from 3 mcg to 17 mcg daily, according to estimates from the World Health Organization. Whether this relatively small level of exposure may lead to health problems in some people is uncertain. “I can't categorically recommend against these fillings, but my own feeling is they should be minimized,” says Herbert Needleman, M.D., who wrote about amalgams in the *Journal of the American Medical Association* in 2006 and believes certain people may have a genetic predisposition to mercury toxicity.

An increasing number of dentists offer alternatives, such as resin-composite, ceramic, or porcelain fillings, explains Richard Hansen, a holistic dentist based in Fullerton, California. (For a list of holistic dentists by state, check out the International Academy of Oral Medicine and Toxicology Web site, iaomt.org). Think twice before having old amalgam fillings removed, however. “The most toxic exposure you'll ever get is by removing mercury fillings unsafely,” says Hansen. +