

## Practice Prevention

# Mercury



“You probably have heard about or read that mercury is not good for mothers during pregnancy or for children of any age. Exposure to mercury during pregnancy may result in

serious damage to the developing brain. Exposure to mercury during childhood may result in more subtle but equally concerning changes in brain structure and function. You can do a lot to minimize this danger for your family. Educating others will help to minimize this danger for other families.

Mercury-tainted fish are the biggest source of concern. Thus, it is important that there be a limit to the amount of potentially mercury-laden fish women eat during their pregnancy and to have similar limits for children as they grow up. States issue advisories on fish consumption, identifying the types of fish most likely to have high mercury levels and recommending how much of what types of fish should be eaten by an adult during pregnancy and by children.

This excellent review informs you of the concerns with fish consumption. Other possible sources of mercury are also discussed with ideas on prevention for each.

Please be proactive when it comes to mercury. The potential consequences are too great for you not to be. Not all forms of brain damage or brain dysfunctions can be prevented. The harmful impact of mercury on the developing brain can. Don't ignore this opportunity to minimize harm to your child.”

- Larry B. Silver, MD

*from the Learning and Developmental Disabilities Initiative  
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**Mercury can cause brain and nervous system damage in children. It's the reason that most states issue fish consumption advisories.**

### What is mercury?

Mercury is a naturally occurring metal which is a persistent, bioaccumulative and toxic (PBT) pollutant. It cannot be degraded and accumulates in soil, water and living organisms. Mercury has several forms, combining with

other elements to make both organic and inorganic compounds. The most common compound, methylmercury, is produced mainly by bacteria in water and soil.

### How does mercury affect children's nervous systems?

The developing nervous system and brain of fetuses and young children are highly sensitive to mercury in any form, but particularly to methylmercury and mercury vapors.<sup>1</sup> Children who are exposed to relatively high doses of mercury before birth may develop mental retardation, cerebral palsy, deafness, blindness, speech difficulties<sup>2</sup> or seizures.<sup>3</sup> Chronic low-dose exposure before birth from the mother's fish consumption can lead to poor performance on neurobehavioral tests, particularly on tests of attention, fine-motor function, language, visual-spatial abilities such as drawing, and verbal memory.<sup>2</sup> Because a child's brain continues to develop well after birth, exposure to mercury in childhood can affect brain functions.<sup>4</sup>

Research indicates that there are differences in how easily some children eliminate or shed mercury from their bodies.<sup>5</sup> These differences may be genetic. The failure to shed mercury allows it to build up in body tissues so that even very small exposures over time can be harmful to these children.<sup>6</sup>

Mercury affects more than the nervous system. Exposure before birth may affect cardiac function.<sup>7</sup> Exposure at any age can cause increased blood pressure, tremors, changes in vision or hearing and memory problems. Mercury can also cause nausea, vomiting, abdominal cramps, diarrhea, eye irritation, skin rashes, weight loss, irritability, joint pain, deafness and damage to kidneys and lungs.<sup>8</sup>

## How are children exposed to mercury?

Mercury enters a child's environment from several sources – the most common being mercury pollution in the air. "Mercury pollution comes from power plant smokestacks, mining, and other industrial activities. When mercury lands in bodies of water, it moves up the food chain from the tiniest fish to the bigger ones that eat them. The older and larger these fish get, the more mercury collects in their flesh."<sup>9</sup> Large fish that eat smaller fish, such as tuna, sharks, or swordfish, tend to be more contaminated.

When children eat mercury-tainted fish, their brains are being exposed to mercury – during digestion, mercury is rapidly absorbed into the blood and enters and accumulates in the brain.<sup>2</sup> Because of the danger mercury may pose to fetuses and children, advisories have been issued throughout much of the United States recommending that women of childbearing age and children avoid eating fish high in mercury. In fact, every state but Alaska and Wyoming issued fish consumption advisories in 2003, according to the US Environmental Protection Agency.<sup>10</sup>

There are other ways that mercury pollutes soil and water and finds its way into fish:

- waste from metallic dental cavity-filling material (amalgam) that is disposed of in wastewater or municipal waste
- improper disposal (such as incinerating or sending to a landfill or into wastewater) of items containing mercury, including medical waste, batteries, fluorescent lights, some light switches, old paint, and old thermometers
- accidental mercury spills

In addition to exposure through fish, children can be exposed to mercury through these sources:

- dental amalgam used to fill children's cavities – the major source of inorganic mercury exposure in the general population<sup>11</sup>
- drugs and related products, including topical mercury-based skin creams, infant teething powders, contact solutions, nasal sprays, and some vaccines<sup>12</sup>
- breaking of household items that contain mercury, such as old thermometers or fluorescent light bulbs (for how to clean up breaks, see <http://epa.gov/mercury/spills/>)
- some magico-religious rituals and folk remedies<sup>13</sup>

## What can you do to reduce your child's risk?

Children and women of childbearing age can avoid eating fish that are known to accumulate mercury, such as tuna or swordfish: see [www.gotmercury.org](http://www.gotmercury.org) for a guide. Follow local and state fish advisories posted at [www.epa.gov/ostwater/fish](http://www.epa.gov/ostwater/fish). Get a fish and seafood guide to help you make smart fish purchases in groceries and restaurants. A wallet guide is available at (202) 667-4260 or at [www.mercuryaction.org/fish/images/wallet\\_card.pdf](http://www.mercuryaction.org/fish/images/wallet_card.pdf).

Ask your dentist about alternatives to mercury-based amalgam for filling cavities. Women and children with these fillings inhale tiny amounts of mercury from the fillings even long after the filling has hardened.<sup>11,14</sup>

Ask your doctor if any vaccinations that are being suggested for your child might contain thimerosal, a

preservative that contains mercury.

Trade in your old mercury thermometer for a digital one. Find out if your local hospital or health department has a trade-in program or knows of one near you.

Dispose of toxic waste, such as mercury thermometers, burned-out fluorescent light bulbs, or spent alkaline batteries, at an appropriate site. Find out if your city or county has hazardous waste collections or disposal sites. If these items break or leak, follow safe clean-up techniques immediately: <http://epa.gov/mercury/spills/>.

Urge your government officials to act to reduce the amount of mercury being released into the environment. Eliminating sources of mercury is ultimately the only way to protect our children.

**Footnoted resources**

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