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Mercury

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How People are Exposed to Mercury

Mercury exists in various forms, and people are exposed to each in different ways. The most common way people in the United States are exposed to mercury is by eating fish containing methylmercury. Other exposures may result from using or breaking products containing mercury.

If you are concerned for your health or your family's health as a result of a potential exposure to mercury, get in touch with your physician or other health care provider. They will be able to tell you if the degree of mercury exposure is a concern, and what to do about it.

On this page, you can learn how people are **most often** exposed to:

- Methylmercury
- Elemental (metallic) mercury
- Other mercury compounds

On related pages:

- Information about the effects that mercury exposures have on health
<<https://epa.gov/mercury/health-effects-exposures-mercury>>
- How to minimize your exposures <<https://epa.gov/mercury/mercury-your-environment-steps-you-can-take#tab-2>>

Exposures to Methylmercury

Methylmercury, a highly toxic organic compound, is the form of mercury people in the United States encounter most frequently. Almost all people in the world have at least trace amounts of methylmercury in their bodies, reflecting its prevalence in the environment. However, most people have mercury levels in their bodies below the level associated with possible health effects.

Nearly all methylmercury exposures in the United States occur through eating fish and shellfish that contain higher levels of methylmercury.

How Does Methylmercury Get into the Fish and Shellfish?

Mercury gets into the air from a number of sources <<https://epa.gov/mercury/basic-information-about-mercury#airemissions>>. Once in the air, mercury eventually settles into bodies of water like lakes and streams, or onto land, where it can be washed into water. Microorganisms in waterbodies can change it into methylmercury, where it builds up in fish and shellfish. The levels of methylmercury in fish and shellfish depend on:

- What they eat
- How long they live
- How high they are in the food chain

In a given water body, the highest concentrations of methylmercury are generally found in large fish that eat other fish. Fish is a beneficial part of people's diet, and we encourage people to eat fish low in methylmercury.

Populations Particularly Sensitive to Methylmercury Exposures

Some communities eat significantly more quantities of fish than the general population. As a result, they may be exposed to much greater mercury contamination than the general population.

In past outbreaks of methylmercury poisoning, mothers with no symptoms of nervous system damage gave birth to infants with severe disabilities. This presented evidence that the nervous system of a developing infant may be more vulnerable to methylmercury exposures than an adult nervous system. Mothers who are exposed to methylmercury and breast-feed may also expose their infant children through their milk.

Additional Resources

- More about emissions of mercury into the air <<https://epa.gov/mercury/basic-information-mercury-0#airemissions>>
 - Guidelines for eating fish that contain methylmercury <<https://epa.gov/mercury/guidelines-eating-fish-contain-mercury>>
 - Information about the effects that methylmercury exposures can have on your health <<https://epa.gov/mercury/health-effects-exposures-mercury#methyl>>
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Exposures to Elemental (Metallic) Mercury

Common exposures: When most exposures to metallic mercury occur, they occur because mercury is released from a container, or from a product or device that breaks.

If the mercury is not immediately contained or cleaned up, it can evaporate, becoming an invisible, odorless, toxic vapor. Exposures may occur when people breathe this vapor and inhale it into their lungs. Poorly ventilated, warm, indoor spaces are of particular concern in cases of airborne mercury vapors. *Note that where metallic mercury generally is contained in glass or metal, it does not pose a risk unless the product is damaged or broken and mercury vapors are released.*

In other instances, metallic mercury is accidentally swallowed.

Sources of common potential exposure to metallic mercury are described below.

- **Fever thermometers:**
 - It is not uncommon for children to break fever thermometers in their mouths. When a thermometer containing mercury breaks in a child's mouth and the child might have swallowed some mercury, be aware that the mercury poses a low risk in comparison to breathing mercury vapor.
 - Learn what to do if a mercury thermometer breaks in your home or school <https://epa.gov/mercury/what-do-if-mercury-thermometer-breaks> (outside of someone's mouth).
- **Novelty jewelry:** Some necklaces (historically imported from Mexico) contain a glass pendant that contains mercury. The mercury-containing pendants can come in various shapes such as hearts, bottles, balls, saber teeth, and chili peppers. If broken, they can release metallic mercury to the environment.
- **Other consumer products:** Metallic mercury is often found in school laboratories. It is also in some thermometers, barometers, switches, thermostats, and electrical switches. View a list of products that contain mercury. <https://epa.gov/mercury/mercury-consumer-products>
- **Dental fillings:** Mercury is used in dentistry in dental amalgam, also known as "silver filling." Dental amalgam is a direct filling material used in restoring teeth. It is made up of approximately 40-50% mercury, 25% silver, and 25-35% blend of copper, zinc and tin. Amalgam use is declining because the incidence of dental decay is decreasing, and because well-performing substitute materials are available for restoring teeth. Learn more about mercury in dental fillings <https://epa.gov/mercury/mercury-dental-fillings>.
- **Gold mining:** Metallic mercury is sometimes used in artisanal and small-scale gold mining at locations outside of the United States. Mercury is mixed with gold-containing materials, forming a mercury-gold amalgam. The amalgam is then heated, vaporizing the mercury and leaving the gold. This process is very dangerous and can lead to significant mercury exposure. Miners working tailings in areas where mercury was previously used can also be inadvertently exposed to the residual mercury in these deposits. Learn more about mercury pollution from artisanal and small-scale gold mining <https://epa.gov/international-cooperation/reducing-mercury-pollution-artisanal-and-small-scale-gold-mining>.

Less common exposures: On rare occasions, people can suffer serious health consequences after exposures to very high levels of mercury vapor, especially if the exposure has occurred over a prolonged period. Two examples of very high exposures, with serious health effects:

- In 1989, an adult was melting dental amalgam in a casting furnace in the basement of his home in an attempt to recover silver from the amalgam. Mercury fumes released during the operation apparently had entered air ducts in the basement and had circulated throughout the house. He and the other residents of the home suffered serious health consequences.
- Also in 1989, several pounds of liquid mercury spilled in a child's bedroom. The mercury was not cleaned up sufficiently. He and his two sisters continued to be exposed to high levels of evaporating mercury for a prolonged period, and they suffered serious health consequences. (Source: CDC.gov [✉](http://www.cdc.gov/mmwr/preview/mmwrhtml/00014464.htm))
<<http://www.cdc.gov/mmwr/preview/mmwrhtml/00014464.htm>>

Additional Resources

- Information about the effects that elemental/metallic mercury exposures can have on your health <<https://epa.gov/mercury/health-effects-exposures-mercury#metallic>>

Exposures to Other Mercury Compounds

Other compounds of mercury, like phenylmercury acetate and ethylmercury, have been commonly used as fungicides, preservatives, antiseptics (e.g., Mercurochrome, a trade name of the antiseptic merbromin) or disinfectants. Such mercury compounds also have been used in a variety of products. However, most uses have been discontinued.

Some medicines use small amounts of these compounds as preservatives. Learn about the use of thimerosal, a mercury-containing preservative, in vaccines

<<https://epa.gov/mercury/mercury-thimerosal-vaccines-and-lab-reagents>>.

In addition, mercury is still used in skin lighteners and anti-aging products for the skin. These products are manufactured abroad and are sold illegally in the United States. View the U.S. Food and Drug Administration's page on mercury poisoning that is linked to skin products [✉ <http://www.fda.gov/forconsumers/consumerupdates/ucm294849.htm>](http://www.fda.gov/forconsumers/consumerupdates/ucm294849.htm).

Misuse or overuse of mercury-containing products can lead to excessive exposure to mercury compounds. This happens especially with outdated products that contain more mercury.

Additional Resources

- Information about the effects that exposures to other mercury compounds can have on your health [<https://epa.gov/mercury/health-effects-exposures-mercury#compounds>](https://epa.gov/mercury/health-effects-exposures-mercury#compounds)

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[What You Can Do <https://epa.gov/mercury/mercury-your-environment-steps-you-can-take>](https://epa.gov/mercury/mercury-your-environment-steps-you-can-take)

[Laws & Regulations <https://epa.gov/mercury/environmental-laws-apply-mercury>](https://epa.gov/mercury/environmental-laws-apply-mercury)

[Guidelines for Eating Fish <https://epa.gov/mercury/guidelines-eating-fish-contain-mercury>](https://epa.gov/mercury/guidelines-eating-fish-contain-mercury)

[Products that Contain Mercury <https://epa.gov/mercury/mercury-consumer-products>](https://epa.gov/mercury/mercury-consumer-products)

[Broken Bulbs <https://epa.gov/mercury/cleaning-broken-cfl>](https://epa.gov/mercury/cleaning-broken-cfl)

[Broken Thermometers <https://epa.gov/mercury/what-do-if-mercury-thermometer-breaks>](https://epa.gov/mercury/what-do-if-mercury-thermometer-breaks)

[Science and Research Resources <https://epa.gov/mercury/resources-mercury-science-and-research>](https://epa.gov/mercury/resources-mercury-science-and-research)

[En español <https://espanol.epa.gov/espanol/informacion-basica-sobre-el-mercurio>](https://espanol.epa.gov/espanol/informacion-basica-sobre-el-mercurio)

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