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Mercury poisoning

This article discusses poisoning from mercury.

This article is for information only. DO NOT use it to treat or manage an actual poison exposure. If you or someone you are with has an exposure, call the local emergency number (such as 911), or the local poison control center can be reached directly by calling the national toll-free Poison Help hotline (1-800-222-1222) from anywhere in the United States.

Poisonous Ingredient

There are three different forms of mercury that cause health problems. They are:

- Elemental mercury, also known as liquid mercury or quicksilver
- Inorganic mercury salts
- Organic mercury

Where Found

Elemental mercury can be found in:

- Glass thermometers
- Electrical switches
- Fluorescent light bulbs
- Dental fillings
- Some medical equipment

Inorganic mercury can be found in:

- Batteries
- Chemistry labs
- Some disinfectants
- Folk remedies
- Red cinnabar mineral

Organic mercury can be found in:

- Older germ-killers (antiseptics) such as red mercurochrome (merbromin) (this substance is now banned by the FDA)
- Fumes from burning coal
- Fish that have eaten a form of organic mercury called methylmercury

There may be other sources of these forms of mercury.

Symptoms

ELEMENTAL MERCURY

Elemental mercury is usually harmless if it is touched or swallowed. It is so thick and slippery that it usually falls off the skin or leaves the stomach and intestines without being absorbed.

A lot of damage can occur, though, if elemental mercury gets into the air in the form of small droplets that are breathed into the lungs. This often occurs by mistake when people try to vacuum up mercury that has spilled onto the ground.

Breathing in enough elemental mercury will cause symptoms right away. These are called acute symptoms. Long-term symptoms will occur if small amounts are inhaled over time. These are called chronic symptoms. Chronic symptoms may include:

- **Metallic taste** in the mouth
- **Vomiting**
- **Difficulty breathing**
- Bad cough
- Swollen, bleeding gums

Depending on how much mercury is inhaled, permanent lung damage and death may occur. Long-term brain damage from inhaled elemental mercury can also occur.

There have been cases of mercury being injected under the skin, which can cause fever and rash. Infection may develop, requiring surgical drainage and removal of the mercury.

INORGANIC MERCURY

Unlike elemental mercury, inorganic mercury is usually poisonous when swallowed.

Depending on how much is swallowed, symptoms may include:

- Burning in the stomach and throat
- Bloody diarrhea and vomiting

If inorganic mercury enters your bloodstream, it can attack the kidneys and brain. Permanent kidney damage and kidney failure may occur. A large amount in the bloodstream may cause massive blood and fluid loss from diarrhea and kidney failure, leading to death.

ORGANIC MERCURY

Organic mercury can cause sickness if it is breathed in, eaten, or placed on the skin over long periods of time. Usually, organic mercury causes problems over years or decades, not right away. This means that being exposed to small amounts of organic mercury every day for years will likely cause symptoms to appear later. A single large exposure, however, can also cause problems.

Long-term exposure will likely cause symptoms in the nervous system, including:

- Numbness or pain in certain parts of your skin
- Uncontrollable shaking or tremor
- Inability to walk well
- Blindness and double vision
- Memory problems
- Seizures and death (with large exposures)

Being exposed to large amounts of the organic mercury called methylmercury while pregnant may cause permanent brain damage in the baby. Most health care providers recommend eating less fish, especially swordfish, while pregnant. Women should talk to their provider about what they should and should not eat while pregnant.

Before Calling Emergency

Have this information ready:

- Person's age, weight, and condition (for example, is the person awake and alert?)
- Source of the mercury
- Time it was swallowed, inhaled, or touched
- Amount swallowed, inhaled, or touched

Do not delay calling for help if you do not know the above information.

Poison Control

Your local **poison control center** can be reached directly by calling the national toll-free Poison Help hotline (1-800-222-1222) from anywhere in the United States. This national hotline number will let you talk to experts in poisoning. They will give you further instructions.

This is a free and confidential service. All local poison control centers in the United States use this national number. You should call if you have any questions about poisoning or poison prevention. It does NOT need to be an emergency. You can call for any reason, 24 hours a day, 7 days a week.

What to Expect at the Emergency Room

General treatment for mercury exposure includes the steps just below. Treatment for exposure to different forms of mercury are given after this general information.

The person should be moved away from the source of exposure.

The health care provider will measure and monitor the person's vital signs, including temperature, pulse, breathing rate, and blood pressure.

Tests that may be done include:

- Blood and urine tests
- Chest x-ray
- ECG (electrocardiogram) or heart tracing

Treatment may include:

- Activated charcoal by mouth or tube through the nose into the stomach, if mercury is swallowed (under limited circumstances)
- Dialysis (kidney machine)
- Fluids through a vein (by IV)
- Medicine to treat symptoms

The type of exposure will determine what other tests and treatments are needed.

ELEMENTAL MERCURY

Inhaled elemental mercury poisoning may be difficult to treat. The person may receive:

- Humidified oxygen or air
- Breathing tube through the mouth into the lungs and use of a breathing machine (ventilator)
- Suctioning of mercury out of the lungs
- Medicine to remove mercury and heavy metals from the body
- Surgical removal of the mercury if injected under the skin

INORGANIC MERCURY

For inorganic mercury poisoning, treatment often begins with supportive care. The person may receive:

- Fluids by IV (into a vein)
- Medicines to treat symptoms
- Activated charcoal, a medicine that soaks up many substances from the stomach
- Medicines called chelators to remove mercury from the blood

ORGANIC MERCURY

Treatment for exposure to organic mercury usually consists of medicines called chelators. These remove mercury from the blood and move it away from the brain and kidneys. Often, these medicines will have to be used for weeks to months.

Outlook (Prognosis)

Breathing in a small amount of elemental mercury will cause very few, if any, long-term side effects. However, breathing in larger amounts can lead to a long hospital stay. Permanent lung damage is likely. There may be brain damage. Very large exposures will likely cause death.

A large overdose of inorganic mercury may cause massive blood and fluid loss, kidney failure, and likely death.

Chronic brain damage from organic mercury poisoning is difficult to treat. Some people never recover, but there has been some success in people who receive chelation treatment.

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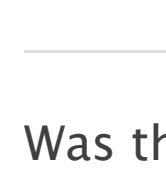
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Updated by: Jacob L. Heller, MD, MHA, Emergency Medicine, Emeritus, Virginia Mason Medical Center, Seattle, WA. Also reviewed by David Zieve, MD, MHA, Medical Director, Brenda Conaway, Editorial Director, and the A.D.A.M. Editorial team.

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