

FACTS



Mercury in Drinking Water



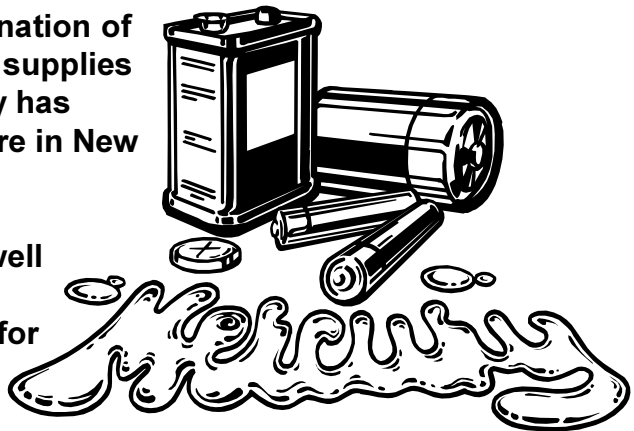
Division of Environmental and Occupational Health
Consumer and Environmental Health Services

FACTS Mercury in Drinking Water

<i>Introduction</i>	3
<i>What is Mercury?</i>	4
<i>How Can Mercury Get into Your Drinking Water?</i>	5
<i>How Can You Find Out if Mercury Is in Your Drinking Water?</i>	7
<i>Is Mercury Harmful to Your Health?</i>	8
<i>Is There a Medical Test to See If You Have Been Exposed to Mercury?</i>	10
<i>Is There a Safe Level of Mercury in Your Drinking Water?</i>	11
<i>Should You Continue to Use Your Drinking Water If Mercury Is Found?</i>	12
<i>What Can You Do to Remove Mercury from Your Private Well Water?</i>	13
<i>For More Information</i>	14
<i>Other Available Materials</i>	15

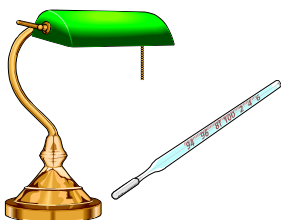
INTRODUCTION...

- People may be exposed to mercury from a variety of sources, including drinking water.
- Too much mercury in the human body can cause serious damage to the brain, nervous system and kidneys.
- Young children and developing fetuses are at greatest risk of the harmful effects of mercury.
- Inorganic mercury compounds are the most common forms of mercury found in drinking water.
- Organic mercury compounds, the most harmful forms of mercury, are rarely found in drinking water.
- Contamination of public water supplies with mercury has been very rare in New Jersey.
- Private well owners are responsible for testing their well water for mercury.



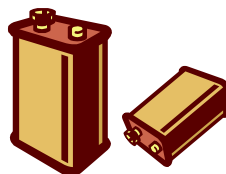
WHAT IS MERCURY?

Mercury is a shiny, silver-white metal found in small amounts in the earth's crust. At room temperature, metallic mercury is an odorless liquid that can slowly evaporate into the air. It can combine with other elements to form inorganic and organic compounds. Mercury is used for a wide variety of purposes.



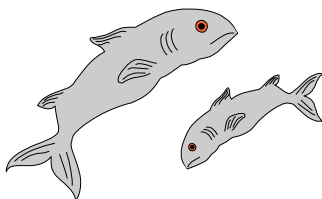
Metallic mercury has been commonly used in thermometers, pressure gauges, electric switches, fluorescent lamps, and dental fillings.

Inorganic mercury compounds (such as mercuric chloride) are used in batteries, paper manufacturing, and the chemical industry.



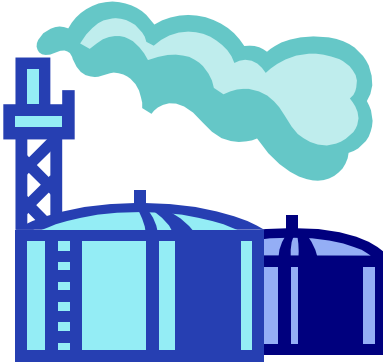
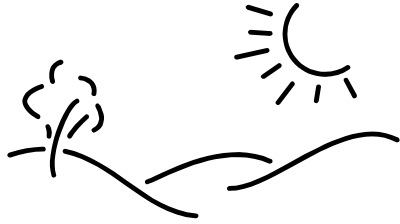
Mercury is used to prevent mildew in outdoor paints. It was also used in the past in indoor paints and agricultural pesticides.

Organic mercury compounds (such as methyl mercury) are found in large fish, such as bass, shark, swordfish, and tuna. Contact the Consumer and Environmental Health Services for more information about mercury in fish (see page 14).



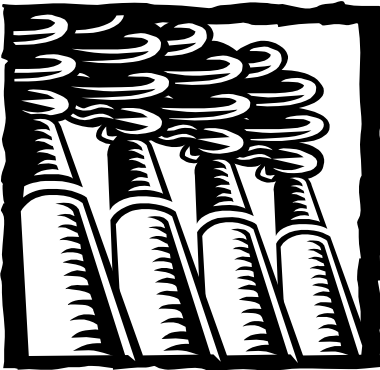
HOW CAN MERCURY GET INTO YOUR DRINKING WATER?

Mercury, carried by wind and rain, is found throughout the environment mostly due to the:



- release of naturally occurring mercury from rock and soil;

- burning of coal and oil that contains small amounts of mercury;



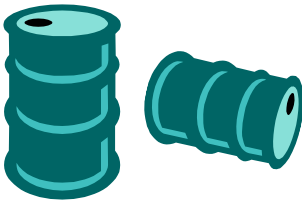
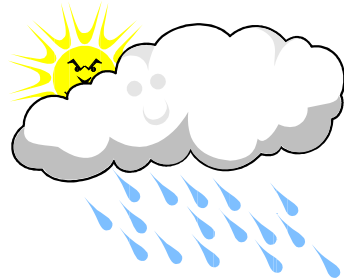
- release of mercury from metal smelters; and

- incineration of materials that contain mercury, such as batteries.

Inorganic mercury compounds are the most common forms of mercury found in drinking water. Organic mercury compounds are rarely found in drinking water.

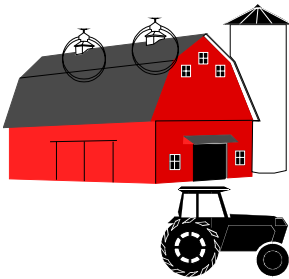
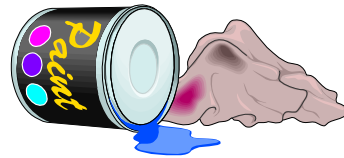
There are many ways that mercury can get into your drinking water:

- Rain and snow can carry mercury from the air into surface waters supplies such as lakes, rivers and reservoirs.



- Mercury can seep into underground water supplies from industrial and hazardous waste sites.

- Improperly disposed household products, such as mercury containing outdoor paints, can move through the soil and reach private well water supplies.



- Past applications of mercury-based pesticides on agricultural lands, such as farms and fruit orchards, can wash into nearby surface waters or travel through the soil into underground water supplies.

Very small amounts of mercury are present in many lakes and rivers. Bacteria in surface waters can change metallic mercury and some types of inorganic mercury into organic forms.

HOW CAN YOU FIND OUT IF MERCURY IS IN YOUR DRINKING WATER?

Although contamination of public water supplies with mercury has been very rare in New Jersey, mercury has been found in private wells throughout the southern parts of the State. Contact your local health department for guidance on testing your well for mercury based on your specific situation.

If you get water from a public water supply, your water is tested for mercury according to a schedule determined by the New Jersey Department of Environmental Protection (NJDEP), Bureau of Safe Drinking Water. To obtain the test results for your drinking water system, contact your water company or the NJDEP.

If you have a private well, you can get your water tested by a private laboratory listed in the telephone directory. Call the NJDEP, Office of Quality Assurance, to make sure that the laboratory is certified to test for mercury in drinking water (see page 14 for telephone number).



IS MERCURY HARMFUL TO YOUR HEALTH?

Mercury can cause a variety of harmful health effects in the body. The type and severity of these health effects depend upon the form and amount of mercury that you are exposed to, and how much mercury has built up in the body over time.

Inorganic mercury compounds are unlikely to cause health effects in adults at the levels sometimes found in drinking water supplies. Young children are more sensitive than adults to inorganic mercury since it is more easily absorbed into their bodies.



More health information is needed to determine if exposure to low levels of inorganic mercury can cause harmful effects in people.

At high levels of contamination (which are not typically found in drinking water), inorganic mercury can affect the nervous system causing symptoms such as irritability, nervousness, changes in vision or hearing, and difficulties with memory.

In animals studies, it has been shown that small amounts of inorganic mercury can pass from the mother's body into the developing fetus. Other health effects, such as kidney damage, certain types of tumors, and changes in the immune system, have been seen in animals exposed to very high levels of inorganic mercury. It is not known if inorganic mercury can cause these effects in people.



The harmful effects of mercury on the nervous system are well documented based on instances where people were exposed to high levels of mercury in food and in the workplace.

Organic mercury compounds are the most harmful forms of mercury. They are easily absorbed into the blood through the digestive tract and, at high levels, can damage the nervous system and kidneys.

Organic mercury is especially harmful to young children since it

can easily enter their nervous system and interfere with brain development. It also can pass easily from the mother's blood into the developing fetus causing damage to the brain.

There is not enough health information to show that organic mercury causes cancer in people.

**IS THERE A MEDICAL TEST TO SEE IF YOU
HAVE BEEN EXPOSED TO MERCURY?**

Mercury can be measured in the blood, urine, and hair of people who have had high levels of exposure, such as in the workplace. These tests can estimate the amount of mercury in the body and used to see if there has been a decrease in mercury levels after the exposure has been eliminated.

For most people, exposure to high levels of mercury in drinking water is very unlikely.

Typically, mercury exposure occurs mostly from eating fish and from dental fillings.



IS THERE A SAFE LEVEL OF MERCURY IN YOUR DRINKING WATER?

If your water exceeds the MCL for mercury, it does not necessarily mean that the water will make you sick. Because of the uncertainty, however, it is important that steps be taken to reduce the level of mercury to below the MCL.

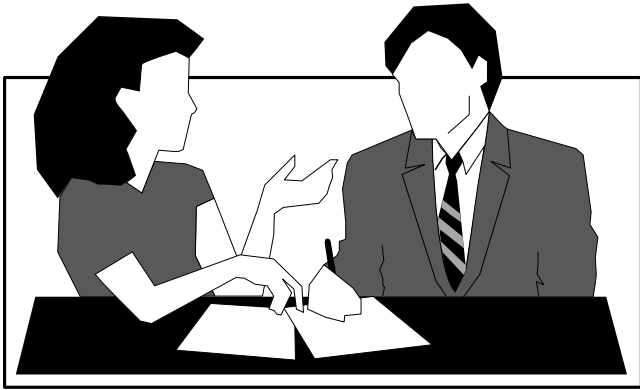
In order to prevent or reduce the chances of health effects from occurring due to drinking water contamination, “Maximum Contaminant Levels” (MCLs) have been established by the NJDEP and the United States Environmental Protection Agency (USEPA). MCLs are set at levels well below those known to cause harmful health effects. MCLs are limits that public water systems are required to meet by law.

In 1979, the U.S. Food and Drug Administration ruled that bottled water could contain no more than 2 parts per billion (or 2 micrograms per liter of water) of mercury. Since then, this level has been adopted by the USEPA and NJDEP as the MCL for public drinking water supplies.

If you have a private well, you should report any test results that exceed the MCL to your local health department. They will be able to investigate the source of the contamination and see if other wells around you are also contaminated.

SHOULD YOU CONTINUE TO USE YOUR DRINKING WATER IF MERCURY IS FOUND?

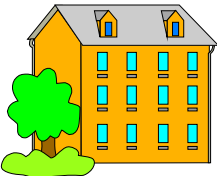
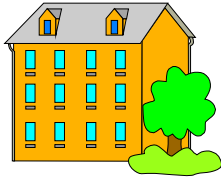
- If you get your water from a public water supply, the NJDEP will require your water company to take actions to reduce mercury levels to below the MCL.



- If you have a private well with mercury levels above the MCL, you should follow the advice of your local health department. Their advice will be based on how much mercury is found in your water and whether infants are exposed to the water. For example, they may recommend the use of an alternate source of drinking water, such as bottled water, until the problem is resolved.

Boiling water is not recommended since this can release certain forms of mercury into the air and can increase the levels of inorganic mercury as the water evaporates.

WHAT CAN YOU DO TO REMOVE MERCURY FROM YOUR PRIVATE WELL WATER?



The USEPA has identified the Best Available Technologies (BATs) that are capable of removing regulated contaminants from your drinking water. The BATs for inorganic mercury are distillation and reverse osmosis. For organic mercury, the BAT is filtration through granulated activated carbon (GAC). However, the NJDEP recommends a special copper-zinc filter for inorganic mercury in private wells. In some situations, a deeper well or a hook-up to a clean public water supply may be the solution.

For more information on home water treatment devices, contact the NJDEP, Bureau of Site Management; the USEPA, Safe Drinking Water Hotline; or NSF International (see page 14 for telephone numbers).

FOR MORE INFORMATION...



◆ **Local Health Department**

Local water issues, private well testing guidance, and health effects of mercury in drinking water

◆ **New Jersey Department of Health and Senior Services
Consumer and Environmental Health Services**

Visit our
website at:
[www.state.nj.us/
health](http://www.state.nj.us/health)

PO Box 369

Trenton, NJ 08625-0369

(609) **588-3120**

Health effects of mercury in drinking water

(609) 588-3123

Health advisories on mercury in fish

◆ **New Jersey Department of Environmental Protection
Bureau of Safe Drinking Water**

(609) 292-5550

Federal and State drinking water regulations and public water supply monitoring results

Office of Quality Assurance

(609) 292-3950

NJ certified laboratories for mercury in drinking water

Bureau of Site Management

(609) 984-2990

Home water treatment devices

◆ **United States Environmental Protection Agency
Safe Drinking Water Hotline**

(800) 426-4791

Federal drinking water regulations, health effects of mercury in drinking water, and other water safety issues

◆ **NSF International**

(313) 769-8010

(800) NSF-6275

Home water treatment device and bottled water information

◆ **Environmental and Occupational Health Clinical Center
University of Medicine and Dentistry/New Jersey**

(732) 445-0123

Physician referral or consultation on health effects of mercury

OTHER AVAILABLE MATERIALS...



- ___ *FACTS: Cryptosporidium in Drinking Water*
- ___ *FACTS: Lead in Drinking Water*
- ___ *FACTS: Microorganisms in Drinking Water*
- ___ *FACTS: Nitrate and Nitrite in Drinking Water*
- ___ *FACTS: Pesticides in Drinking Water*
- ___ *FACTS: Volatile Organic Compounds in Drinking Water*

- ___ *Contacts and Information: Drinking Water Issues*
- ___ *Parasites and New Jersey Drinking Water: Information on Giardia and Cryptosporidium*
- ___ *Private Well Testing*

- ___ *Don't Drink Lead (11" x 17" poster)*
- ___ *Keep Your Baby Safe From Lead (11" x 17" poster)*

Name _____

Address _____

Town _____ **State** _____ **Zip** _____

Please send this order form to:

New Jersey Department of Health and Senior
Services
Consumer and Environmental Health Services
PO Box 369
Trenton, NJ 08625-0369



Division of Environmental and Occupational Health
Consumer and Environmental Health Services
PO Box 369
Trenton, NJ 08625-0369