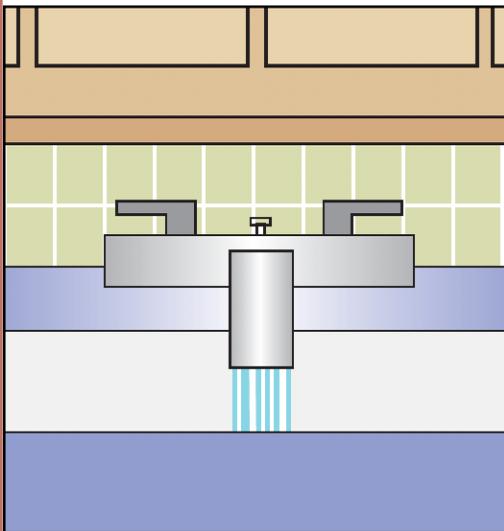




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# YOUR HOUSEHOLD WATER QUALITY: MERCURY IN YOUR WATER

**Mercury in your drinking water poses a threat to your health. The U.S. Environmental Protection Agency (EPA) has set the current standard for mercury in drinking water at 2 parts per billion (ppb). The amount of mercury in public water systems is regulated according to EPA standards. If your water comes from a public system, it is routinely tested to ensure safe mercury levels. However, if you are concerned about mercury levels in your municipal water supply, you should request a consumer confidence report from your water provider or visit EPA's site at [www.epa.gov/ccr](http://www.epa.gov/ccr). Unlike users of public water systems, those who use private water supplies (such as wells, springs, and cisterns) are responsible for ensuring the quality of their own drinking water. Since private systems are more susceptible to mercury than public water systems, private well owners should take steps to guard their health. Measures include routine testing and wellhead maintenance and protection.**

## MERCURY OCCURRENCE

A naturally occurring element found in the earth's crust, mercury is released into the atmosphere by natural geological activity and through mining. Mercury is used in a number of commercial products, including thermostats, thermometers, fluorescent light bulbs, paints, pesticides, batteries, dental fillings, and others. Mercury-containing products and their manufacturing processes are also possible sources of mercury contamination. Mercury can also be deposited from air pollution caused by the combustion of fossil fuels, cement manufacturing, and metal refining, to name a few.

The natural release of mercury from the earth's crust can affect drinking water, but man-made causes for mercury contamination are far more common. Mercury that is spilled or improperly stored at industrial and hazardous waste sites can infiltrate into underground water supplies, thus contaminating private water sources. Even simple household products, such as outdoor paint, can leak mercury into the environment if not properly discarded. Mercury can also be present at former agricultural sites where mercury-containing pesticides were once used. The EPA banned production of mercury-containing pesticides in 1976.

## TYPES OF MERCURY YOU MAY WANT TO KNOW ABOUT

Mercury in nature exists in both inorganic and organic forms. Inorganic forms include elemental mercury and inorganic mercury compounds (such as mercuric chloride) that are used in various products and industrial processes. Organic mercury compounds, predominantly methylmercury, are primarily found in large fish, such as bass, shark, swordfish, and tuna as a result of the mercury bioaccumulation in the muscle of the fish from natural deposition and from contaminated water.

Adverse health effects from exposure to mercury depends on the type of mercury, dose, and duration of exposure as well as the age and general health of the individual. Mercury poisoning caused by exposure to inorganic mercury occurs

mainly through inhalation of fumes containing either elemental or inorganic mercury compounds, which primarily correlates to industrial work. Exposure to methylmercury occurs through eating fish with bioaccumulated mercury. The Georgia Department of Natural Resources (DNR, [gadnr.org](http://gadnr.org)) issues an annual fish consumption guide which includes consumption suggestions for various types of fish in different water bodies. Methylmercury attacks the brain and nervous system, and can cross the placenta to attack the fetus. Methylmercury poisoning has limited reversibility, whereas effects of inorganic mercury poisoning could be alleviated when exposure is reduced or eliminated.

## POTENTIAL HEALTH CONCERNS

Over time, mercury can build up in the body until it adversely affects your health. The EPA has established that long-term drinking of water containing mercury concentration at levels above the maximum contaminant level (MCL) of 2 ppb can cause damage to the brain, kidneys, and nervous system depending on the type and amount of the mercury contamination. Young children and developing fetuses are especially susceptible to the harmful effects of mercury.

For most people, exposure to high levels of mercury through drinking water is very unlikely. Typically, exposure occurs from eating fish with high concentrations of mercury or from dental fillings.

## SHOULD I HAVE MY WATER TESTED FOR MERCURY?

People who use private water supplies are responsible for ensuring the quality of their own water. Private water sources should be tested for contamination at least once a year, but no single test can identify all possible contaminants. For more information about testing your well water, contact your county University of Georgia Cooperative Extension agent or refer to UGA Extension [Circular 858-2](http://Circular 858-2), "Testing for Water Quality," which is also available at [aesl.ces.uga.edu](http://aesl.ces.uga.edu). If an initial test shows that mercury is below the MCL, a yearly follow-up testing is not recommended unless any appreciable changes occur in routine testing results, water quality, or the health of the residents.

Should your water supply test higher than the recommended 2 ppb for mercury, consider installing a home water treatment system. You should not boil your water to combat mercury contamination, as this process can release mercury into the air.

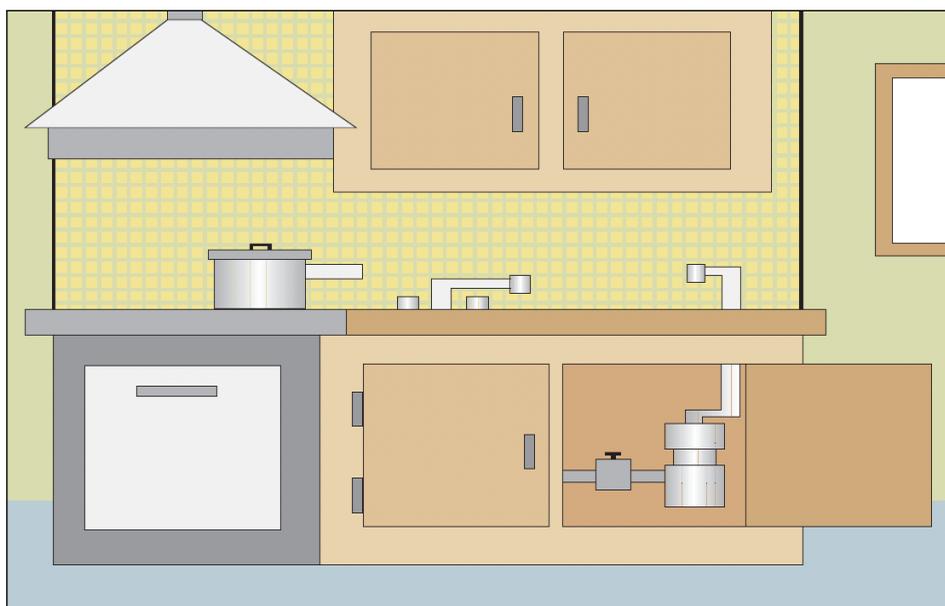
## IS MY HOME TREATMENT SYSTEM ELIMINATING MERCURY?

If you are concerned about mercury levels in your private water supply, you will need to test specifically for mercury. There are a number of treatment systems that are effective in removing mercury:

- reverse osmosis
- distillation
- copper-zinc filtration
- granular activated carbon

For more information on these treatment options see UGA Extension [Bulletin 939](http://Bulletin 939), "Water Quality and Common Treatments for Private Drinking Water Systems."

A **"point of use"** filtration system can be used to remove mercury from drinking water ([aesl.ces.uga.edu](http://aesl.ces.uga.edu)).



## MORE ABOUT MERCURY

Testing your drinking water for mercury contamination is only one way to avoid exposure to mercury. Only purchase mercury-containing products when there is no other alternative. Digital thermostats and digital thermometers are an excellent substitute for the traditional mercury-containing varieties. Low-mercury bulbs (with green end caps) are a better option than standard fluorescent bulbs. Dispose of mercury-containing items as hazardous waste. Tightly seal the item in a bag or container and label it "MERCURY WASTE." Be aware that mercury spilled inside or outside the house can lead to exposure.

Certain cultural rituals and the consumption of various types of fish also present risks of mercury exposure. For more information about mercury, potential sources of mercury exposure, and the proper disposal of mercury-containing products, contact your county Extension agent.

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### Sources:

Agency for Toxic Substances and Disease Registry (ATSDR). Toxicological Profile for Mercury ([www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=115&tid=24](http://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=115&tid=24)). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, 1999.

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