Copper in Drinking Water FAQ

This fact sheet answers frequently asked questions about how copper in drinking water can affect health. Copper is a naturally occurring and essential nutrient for good health in low levels. Exposure to high levels of copper can harm health. Parents of infants and pregnant women should be aware of the possible health effects following exposure to high levels of copper and the possible ways to reduce exposure to copper in drinking water.

How does copper get in my drinking water?

Copper may get into drinking water when acidic water flows through copper pipes or plumbing in homes. Copper levels are highest in water that has been sitting in pipes containing copper for several hours. This is because copper is released from pipes containing copper and brass fixtures into the water. The amount of copper in the water decreases after the water is run for 15–30 seconds. The federal drinking water action level for copper is 1,300 parts copper per billion parts of water (ppb).

How does copper get into my body?

You may be exposed to small amounts of copper in the air you breathe, the water you drink, the foods you eat, or from touching copper, particles attached to copper, or copper compounds. Copper can get into the body from drinking water or preparing food with water containing copper. Copper is not easily absorbed through our skin.

What are the health effects of copper?

Copper is necessary for all living things in small "trace" amounts for good health. Consuming high levels of copper can cause nausea, vomiting, diarrhea, and stomach cramps. Long-term health effects following exposure to copper in drinking water are uncommon because consumption of high levels of copper will cause nausea and vomiting in almost all people. Some children less than one year old and people with Wilson's disease cannot eliminate copper as well and are more likely to experience negative health effects from copper exposure.

Can my child have a copper test done by their pediatrician?

Copper is normally found in all tissues of the body. It can be measured in blood, urine, feces, hair, and nails. Testing blood, urine, hair, and nails can only show if a person has been exposed to higher than normal levels of copper. It cannot be used to predict the amount of the exposure, how long the exposure occurred, or potential health effects.

What can I do right now to protect my family?

1. Use cold water.

Always use **cold** water for drinking and cooking. **Do not** use hot water for cooking or preparing baby formula. Run the water for 15-30 seconds before using it. This can reduce copper levels by flushing out the water that has been sitting in copper pipes for several hours. Boiling water does not eliminate copper. If there is copper in your water, boiling may increase copper levels.

2. Test your drinking water.

If you have copper in the pipes inside your home or if you aren't sure if you do, consider testing your water. This is the best way to find out if you have copper in your water. Testing typically costs between $20 and $40 and should be done by a certified laboratory. Water samples may be mailed or dropped off. Be sure to follow the lab's sample collection instructions exactly.

The Massachusetts Department of Environmental Protection (MassDEP) provides a list of certified laboratories, which can be found here: http://www.mass.gov/eea/agencies/massdep/water/drinking/certified-laboratories.html#1.

The EPA action level for copper in drinking water is 1,300 ppb (also reported as "1300 µg/L", "1.3 ppm", or "1.3 mg/L")

Where can I get more information?

MassDEP Drinking Water Program at 617-292-5770, or by email at Program.Director-DWP@state.ma.us or visit http://www.mass.gov/eea/agencies/massdep/water/drinking/is-there-copper-in-my-tap-water.html

MDPH Bureau of Environmental Health at 617-624-5757 for health-related questions on copper in drinking water.

CDC Agency for Toxic Substances and Disease Registry, Public Health Statement on Copper http://www.atsdr.cdc.gov/ToxProfiles/tp132-c1-b.pdf

List of state-certified laboratories for drinking water testing at (http://www.mass.gov/eea/agencies/massdep/water/drinking/certified-laboratories.html#1 - click on Find MassDEP-Certified Laboratories)

NSF International, a nonprofit organization that certifies bottled water and water filters at http://www.nsf.org/