

# Copper in Drinking Water FAQ for School and Childcare Facilities

This fact sheet answers frequently asked questions about copper and health, how copper may get into the drinking water at your school or childcare facility, and how children, teachers, and staff can avoid exposure. 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 young children, pregnant women, and people with Wilson's disease or liver disease should be aware of possible health effects following exposure to high levels of copper and should take precautions to minimize their exposure.

## **HOW DOES COPPER GET INTO DRINKING WATER?**

In Massachusetts, most drinking water sources from reservoirs and groundwater do not contain elevated levels of copper. When copper is present in water, it is typically due to the water flowing through pipes or plumbing in buildings with copper and brass parts. Service lines, which are the pipes that connect homes, schools, or other buildings to the water main, could have copper in them. Inside the school or facility, there may also be copper pipes or brass fixtures. Copper levels are highest when the water has been sitting in pipes for several hours. The amount of copper in the water decreases after the water is run for 1 minute. Hot water causes copper to dissolve and enter water faster.

## **HOW DOES COPPER GET INTO SOMEONE'S BODY?**

We regularly come into contact with small amounts of copper from breathing air, drinking water, and eating foods. Copper is not easily absorbed through the skin, but we may also come into contact with copper by touching copper, particles attached to copper, or copper compounds. Because copper is essential to good health in small "trace" amounts, everyone absorbs small amounts of copper every

day. Our bodies have a natural mechanism to maintain the proper level of copper.

## **WHAT IF COPPER LEVELS IN THE DRINKING WATER AT SCHOOL OR CHILDCARE ARE HIGH?**

If the copper levels are higher than the U.S. Environmental Protection Agency's (EPA) action level of 1,300 micrograms per liter (or 1,300 parts per billion), your school or childcare facility should work to determine the source. The Massachusetts Department of Environmental Protection (MassDEP) can provide assistance to schools and childcare facilities. Once a school is aware of a water copper exceedance, they should prevent access to any tap or fountain above the action level and provide an alternate source of water. There are a number of ways copper levels can be reduced, such as by replacing pipes and fixtures, reducing the corrosiveness of the water, or initiating a flushing program. Your school or childcare facility should keep parents, teachers, and staff updated as sampling progresses and informed of the results of the testing and their follow up actions.

## **HOW DOES COPPER MAKE YOU SICK?**

Periodically drinking water that contains copper above the action level does not guarantee it will harm someone's health. Consuming levels of copper above the action level may cause nausea, vomiting, diarrhea, and stomach cramps. Some infants and children, people with liver disease, and people with Wilson's disease have trouble eliminating copper from their bodies and are more likely to experience negative health effects, such as kidney and liver damage.

## SHOULD I OR MY CHILD HAVE BLOOD OR URINE TESTING DONE?

Medical screening is not generally recommended if copper is detected in drinking water at a school or EEC. Copper is normally found in all tissues of the body. Testing of blood, urine, feces, hair, and/or nails for copper 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. Specific health questions about exposure to copper should be directed to your doctor or other health care provider.

## HOW CAN I REDUCE COPPER EXPOSURE AT SCHOOL AND CHILDCARE FACILITIES?

If you are a student, teacher or staff member, you can help reduce your exposure if copper levels are elevated in tap water.

Easy things to do are:

- Obey signs identifying water outlets that are for handwashing only or shouldn't be used at all.
- Let the water run for 1 minute before you drink from a fountain or faucet.
- Use cold water for drinking and cooking. If you want hot water, run cold water from the faucet and warm it in the microwave or on the stove.
- When mixing powdered baby formula with tap water, always use cold water and do not use hot water. Simply warm formula to serve. Bottled or filtered water should be

used when mixing baby formula if copper levels are known to be elevated in tap water. Filters should be NSF-certified to remove copper.

## WHERE CAN I GET MORE INFORMATION?

### For additional health information contact:

Massachusetts Department of Public Health  
Bureau of Environmental Health  
Phone: 617-624-5757 | Fax: 617-624-5777 | TTY:  
617-624-5286  
[www.mass.gov/dph/environmental\\_health](http://www.mass.gov/dph/environmental_health)

### For additional drinking water information contact:

Massachusetts Department of Environmental Protection  
Drinking Water Program  
617-292-5770  
Program.Director-DWP@state.ma.us  
<http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html#19> (and see sections on "Copper" and "Lead and Copper")

## NOTE FOR PUBLIC WATER SUPPLIERS:

This FAQ does not fulfill the notification requirements of the Lead and Copper Rule 310 CMR 22.06B. Public Water Systems should contact MassDEP for specific Lead and Copper Rule requirements.

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OCTOBER 2016

