Copper in Drinking Water

The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that copper is a health concern at certain exposure levels. Copper, a reddish- brown metal, is often used to plumb residential and commercial structures that are connected to water distribution systems. Copper contaminating drinking water as a corrosion by-product occurs as the result of the corrosion of copper pipes that remain in contact with water for a prolonged period of time. Copper is an essential nutrient, but at high doses it has been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. Persons with Wilson's disease may be at a higher risk of health effects due to copper than the general public. EPA's national primary drinking water regulation requires all public water systems to install optimal corrosion control to minimize copper contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have copper concentrations below 1.3 parts per million (ppm) in more than 90% of tap water samples (the EPA "action level") are not required to install or improve their treatment. Any water system that exceeds the action level shall also monitor their source water to determine whether treatment to remove copper in source water is needed.

What Should I Do If My Drinking Water Has Elevated Copper Levels?

The easiest and most effective method for reducing exposure to copper is to avoid drinking or cooking with water that has been in contact with your house plumbing for more than six hours. When first drawing water in the morning or after a work day, flush the system by running the cold water faucet for 2-3 minutes, or until the water gets as cold as possible. (If you live in an apartment complex, flushing the system may take longer). Water used for showering or washing also helps flush the system. It is still a good idea to flush each faucet where water is drawn for drinking or cooking purposes since some fixtures contain copper.

Another option for reducing your exposure to copper is to purchase bottled water. This may be a useful option, particularly if it will be used by young children as drinking water, or for making infant formula. However, you should be careful to obtain bottled water which meets all drinking water standards.

If you are experiencing elevated copper levels in drinking water, it may be likely that lead levels are also elevated. This is especially true if the plumbing system in your home or apartment contains lead solder joints, lead service lines, or brass fixtures. Since lead and copper enter drinking water under similar conditions, it is advisable to test for lead when testing for copper.