



## **Copper Silver Ionization Water Treatment and Health**

### **What Is Copper Silver Ionization Water Treatment?**

Copper silver ionization water treatment is an EPA-approved method for disinfection and is most commonly used to control *Legionella* bacteria in building water systems. The water treatment uses a process where very small amounts of copper and silver are added into the water to eliminate bacteria and viruses in the water. When this type of disinfection treatment is in use, levels of copper and silver in the water can vary over time depending on water usage, water pH, and other conditions in the building system.

### **What Are Copper and Silver?**

Copper and silver are metals that occur naturally and are used to make many products. Copper is often used for plumbing system parts because it is lightweight and durable and has natural antimicrobial properties (which means bacteria do not grow easily on its surface). Silver can be found in rocks and soil and sometimes water.

We need small amounts of copper in our diet, and most people in the U.S. do not have a deficiency in copper. Most people are exposed to very low levels of copper and silver daily, mainly in food and drinking water.

Water with a lot of dissolved copper in it can appear blue and cause taste or odor issues in drinking water. Silver does not affect the taste, smell or look of water.

### **What Are the Effects of Copper and Silver?**

With high levels of copper exposure, a person could experience severe abdominal pain, nausea and vomiting. Generally, people do not experience those symptoms because the water can smell or taste bad when copper levels in water are high. Long-term exposure to high levels can damage the liver and kidneys. Exposure to high levels of silver can result in discoloration of the skin.

We would not expect the copper and silver levels detected in water samples where this type of treatment is being used to cause short-term health effects. The New York City Department of Health and Mental Hygiene (NYC Health Department) works with buildings that are using copper silver water treatment and does not recommend changes in water use, even if there are temporary elevations in copper or silver.

### **Should I Get Tested for Copper or Silver?**

Copper and silver both leave the body within a few weeks. The NYC Health Department does not recommend testing.

### **How Can I Reduce My Exposure to Copper and Silver?**

Because copper and silver occur naturally and small amounts are found in food and water, everyone is exposed to some amounts of these metals. You can also allow the water to run for at least 30 seconds until the water gets noticeably colder. As a reminder, always use cold water for cooking, drinking, and making baby formula and baby cereal. Never use hot tap water for consumption because copper and other metals dissolve more easily in hot water.

For more information about silver or copper, visit [atsdr.cdc.gov](https://www.atsdr.cdc.gov) and search for **silver** or **copper**.

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