

What is copper?

Copper is a naturally occurring element found in rocks, soil, water, and air. Copper is an essential element in plants and animals (including humans), which means it is necessary for us to live. An individual will eat and drink about 1 milligram (mg) of copper per day.

Copper is used to make many different kinds of products like wire, plumbing pipes, and sheet metal. Combined with other metals it is used to make brass and bronze pipes and faucets. Copper compounds are commonly used in agriculture to treat plant diseases like mildew, for water treatment, and as preservatives for wood, leather, and fabrics.

What happens to copper when it enters the environment?

Copper can be released into the environment by mining, farming, and manufacturing operations and also through waste water releases into rivers and lakes. Along with man-made sources, copper can also be released naturally into the environment via volcanoes, windblown dusts, decaying vegetation, and forest fires. When released copper usually attaches to particles made of organic matter, clay, soil, or sand.

How might I be exposed to copper?

- You may be exposed to copper from breathing air, drinking water, eating foods, or having skin contact with copper.
- Water from your faucets may have high levels of copper if your house has copper pipes.
- Soils can also contain high levels of copper especially if they are near copper smelting plants. Children may be exposed to this copper by swallowing dirt from the ground, their toys and their hands.
- You may be exposed if you work with copper or other metals.

How can copper affect my health?

Everyone should absorb small amounts of copper every day because copper is essential for good health. However, if high levels of copper are breathed in, it can cause irritation of the nose and throat. Ingesting too much copper can result in nausea, vomiting, diarrhea, and eventually lead to liver and kidney damage. Animal studies suggest that young children may have more severe effects than adults. It has not been determined if copper can cause birth defects or developmental defects in humans. Animal studies suggest that exposure to high levels of copper may cause a decrease in fetal growth.

How can families reduce the risk of exposure to copper?

- Parents should monitor their children's behavior while playing outdoors to prevent their children from intentionally or inadvertently eating copper contaminated soil.
- Parents should wash their children's outdoor toys regularly to remove any copper contaminated soil.
- Adults and children should wash their hands after being outdoors and before eating.
- If you work with copper, wear the necessary protective clothing and equipment, and always follow safety procedures. Shower and change your clothes before going home each day.

Is there a medical test to show whether I've been exposed to copper?

Copper is found throughout the body; in hair, nails, blood, urine, and other tissues. Tests to measure copper levels in the body are not usually available at a doctor's office because they require special equipment, but the doctor can send samples to a specialty laboratory. High levels of copper in these samples can show that you have been exposed to higher- than normal levels of copper. These tests cannot tell whether you will experience harmful effects.

For more information please contact the:

Texas Department of State Health Services, Health Assessment and Toxicology Group

1100 West 49th Street, MC 1964, Austin, Texas 78756

1-800-588-1248

<http://www.dshs.state.tx.us>