

## ***COPPER: FRIEND AND FOE***

***More Than a Penny's Worth of Thoughts***  
(by Toni Temple, Ohio Network for the Chemically Injured)  
[www.ohionetwork.org](http://www.ohionetwork.org)

Copper is a reddish heavy metal that occurs naturally in rock, soil, water, sediment, and, at low levels, in the air. A small amount is necessary for the survival of all living organisms and humans.

Differing levels occur naturally in many foods. Copper is used to conduct electricity, make water pipes, and is used in alloys to make brass, bronze, and gunmetal. Jewelry and even pennies have been manufactured out of copper.

Everyone seems to know what a penny tastes like, even if they don't remember exactly when they placed one in their mouth.

***On the Other Side of the Coin***, copper is used in higher amounts to manufacture fungicides, insecticides, algacides, and repellents. These pesticides are designed and formulated to kill bugs, germs, bacteria, and fungus. Some of these copper formulations are used to pressure treat wood used for fences, decks, and picnic tables to prevent destruction of the wood by insects. Other copper compounds are used in petroleum refining, textile dyes, and food crops including citrus fruits, peanuts, potatoes, vegetables, and other field crops.

***The Dark Side of Copper***: These products can sensitize and harm humans. For example, excess copper can cause life-threatening anemia that may go undiagnosed unless a ferritin iron level blood test is taken. Copper is one of two heavy metals that can replace iron in the body (zinc is the other). Severe health problems occur because copper (and zinc) cannot create red blood cells.

Copper toxicity can also result in disturbance of copper metabolism; metal fume fever; gastrointestinal distress; hematological, hepatic, endocrine and ocular effects; liver damage; neurological and psychiatric symptoms; and more.

Additional information about copper and copper toxicity can be found in the Toxicological Profile for Copper published by the U.S. Department of Health & Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), Atlanta, GA. [www.cdc.gov](http://www.cdc.gov). The writer has personal experience with severe iron deficiency anemia caused by separate inhalation exposures to zinc and copper.

