



Copper Deficiency is a Global Problem

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WHO NEEDS COPPER?

We all do. This includes babies, teens, adults, and the elderly. Some of us need a little more such as pregnant and nursing women, who are feeding the baby as well as themselves, and infants and teens, who are growing at a fast rate. The adequate intake of copper is 1 mg/day for adults, and 1.3 mg/day for pregnant and lactating women.

HOW MANY PEOPLE ARE COPPER DEFICIENT?

It is estimated by the World Health Organization (WHO) that people worldwide are at greater risk of adverse health effects from copper deficiency than from excess copper. (*Copper: Essentiality and Toxicity. IPCS News—The Newsletter of the International Programme on Chemical Safety December 1996 (10): <http://www.who.int/ipcs/publications/newsletters/en/10.pdf> (page 4)*)

WHY DO WE NEED COPPER?

We need copper for blood cell- and blood vessel formation, a healthy heart, and for stabilizing the connective tissue that binds one part of the body to another. Copper is also needed for brain development and for the effective communication between nerve cells in the brain as well as for healthy bones and teeth.

WHAT ADVERSE EFFECTS RESULT FROM COPPER DEFICIENCY?

Serious diseases such as diseases of the blood (hypochromic anemia, neutropenia, or low white cells), hypopigmentation of the skin and “steely” or “kinky hair,” abnormal bone formation and blood vessel abnormalities can occur if copper intake is too low. Patients suffering from severe copper deficiency after excessive zinc supplementation or after weight loss surgery developed severe anemia and irreversible neurological symptoms (such as gait abnormalities and painful tingling and numbness). Copper deficiency can also be a risk factor for osteoporosis, rheumatoid arthritis, and cardiovascular disease. Even mild copper deficiency can result in a higher rate of colds and flu, loss of skin tone, reproductive problems, and fatigue.

DOES COPPER DEFICIENCY AFFECT PLANTS AND ANIMALS?

Yes. Copper is an essential trace element that is required by plants and animals for normal growth and metabolism. In plants, a deficient copper supply leads to reduced yields, impaired quality of crop products, increased susceptibility to disease, and, in severe cases, to crop failure. Rice, wheat, citrus, oats, spinach, and carrots are some of the major crops sensitive to copper deficiency in soils. Thus, there is also a significant economic aspect to agricultural copper deficiency.

HOW CAN WE PROTECT AGAINST COPPER DEFICIENCY?

We can eat a balanced diet that includes foods that are good sources of copper such as whole grains, nuts, seeds, organ meats (liver, kidney), shellfish, legumes, and dark chocolate. In agriculture, applying copper fertilizers such as copper sulfate, copper oxychloride, or copper-fortified macronutrient fertilizers is an effective treatment. Spraying inorganic compounds on soils is another soil remedy and has little long-lasting residual effect on soil copper content, an important consideration in dealing with government regulators.

COPPER

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