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Copper in diet

Copper is an essential trace element present in all body tissues. A small amount is needed for the body to function, but the body cannot make its own copper. You must get it from food.

Function

Copper works with iron to help the body form red blood cells. It also helps keep the blood vessels, nerves, immune system, and bones healthy. Copper also aids in iron absorption.

Food Sources

Oysters and other shellfish, whole grains, beans, nuts, potatoes, and organ meats (kidneys, liver) are good sources of copper. Dark leafy greens, dried fruits such as prunes, cocoa, black pepper, and yeast are also sources of copper in the diet.

Side Effects

Normally people get enough copper from the foods they eat. Menkes disease (kinky hair syndrome) is a very rare disorder of copper metabolism that is present before birth. It occurs in male infants and affects their copper levels.

Lack of copper may lead to anemia and osteoporosis.

In large amounts, copper is poisonous. A rare inherited disorder, Wilson disease, causes deposits of copper in the liver, brain, and other organs. The increased copper in these tissues leads to hepatitis, kidney compromise, brain disorders, and other problems.

Recommendations

Dosages for copper, as well as other nutrients, are provided in the Dietary Reference Intakes (DRIs) developed by the Food and Nutrition Board at the National Academies of Sciences, Engineering, and Medicine. DRI is a term for a set of reference intakes that are used to plan and assess the nutrient intakes of healthy people. These values, which vary by age and sex, include:

- **Recommended Dietary Allowance (RDA)**: The average daily level of intake that is enough to meet the nutrient needs of nearly all (97% to 98%) healthy people. An RDA is an intake level based on scientific research evidence.
- **Adequate Intake (AI)**: This level is established when there is not enough scientific research evidence to develop an RDA. It is set at a level that is thought to ensure enough nutrition.

Dietary Reference Intakes for copper:

Infants (AI)

- 0 to 6 months: 200 micrograms per day (mcg/day)
- 7 to 12 months: 220 mcg/day

Children (RDA)

- 1 to 3 years: 340 mcg/day
- 4 to 8 years: 440 mcg/day
- 9 to 13 years: 700 mcg/day

Adolescents and adults (RDA)

- Males and females age 14 to 18 years: 890 mcg/day
- Males and females age 19 and older: 900 mcg/day
- Pregnant females: 1,000 mcg/day
- Lactating females: 1,300 mcg/day

The best way to get the daily requirement of essential vitamins is to eat a balanced diet that contains a variety of foods from the food guide plate.

Specific recommendations depend on age, sex, and other factors (such as pregnancy). Women who are pregnant or producing breast milk (lactating) need higher amounts. Ask your health care provider which amount is best for you.

Alternative Names

Diet - copper

References

La Charite J. Nutrition and growth. In: Kleinman K, Mcdaniel L, Molloy M, eds. *The Harriet Lane Handbook*. 22nd ed. Philadelphia, PA: Elsevier; 2021:chap 21.

Mason JB, Booth SL. Vitamins, trace minerals, and other micronutrients. In: Goldman L, Schafer AI, eds. *Goldman-Cecil Medicine*. 26th ed. Philadelphia, PA: Elsevier; 2020:chap 205.

National Institutes of Health website. Copper: fact sheet for health professionals. ods.od.nih.gov/factsheets/Copper-HealthProfessional/ [https://ods.od.nih.gov/factsheets/Copper-HealthProfessional/]
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