

# CHOCOLATE: A DELICIOUS SOURCE OF COPPER

**Chocolate is not just a source of pleasure. Provided that it is not consumed in excess quantities, it is also a healthy food, because it is rich in copper, a trace element naturally present in the environment and essential to human health.**

## **Chocolate's nutritional qualities**

Known for its antidepressant virtues (as a result of substances such as salicin and serotonin), chocolate is a healthy food. Already known to the Spaniards during the colonisation of America, chocolate's nutritional and energy qualities make it an excellent fortifier. Rich in carbohydrates and fat, high in calories (513 kcal per 100 g of dark chocolate), chocolate contains magnesium, potassium, calcium, iron and copper. "Naturally, the quality of the raw materials is a decisive factor and accounts for Marcolini's reputation, in terms of chocolate's taste and nutritional qualities," says Pierre Marcolini, the famous chocolate artisan.

## **The human body needs copper**

Naturally present in the body and in the environment, copper is a vital mineral, especially for a foetus or a child. Copper participates in the development of many physiological functions: the nervous system, cardiovascular system, iron transport and bone growth, while ensuring the proper functioning of the immune functions. In addition, a shortage of copper may have serious consequences, such as Menkes syndrome, a rare genetic disorder characterised by a copper deficiency and having irreversible effects on development.

Throughout life, the body needs a regular supply of copper to stay in good health. According to the World Health Organisation, there is greater risk of health effects from deficiency of copper intake than from excess copper intake. America's National Academy of Sciences has defined the recommended daily amount ("RDA") for copper of 0.9 mg a day for adults, 1.0 mg a day for pregnant women and 1.3 mg a day for women who breast-feed. Certain human health problems are associated with diets containing less than 1 mg of copper per day. In particular, a lack of copper may cause anaemia, because copper helps to absorb iron. There might also be a relationship between a copper deficiency and the development of cardiovascular illnesses. Copper also has an impact on the normal metabolism of cholesterol: healthy adults whose diet contains low levels of copper have higher rates of LDL cholesterol (the "bad" cholesterol) and lower rates of HDL cholesterol (the "good" cholesterol). Copper also plays an important role in the health of the skeletal system: studies suggest the existence of possible correlations between a copper deficiency and osteoporosis, because copper participates actively in bone mineralisation.

## **What are other sources of copper?**

The actual copper content of different foods varies based on the food itself, the growing conditions and the processing method. However, in general, with the exception of chocolate, the following foods are the best sources of copper: seafood, offal (such as liver), whole grains, nuts, grapes and certain legumes (such as beans and lentils).

## **About the European Copper Institute:**

*The European Copper Institute is a Joint Venture between the world's mining companies (represented by the International Copper Association, Ltd.) and the European copper industry. Its mission is to communicate copper's benefits to modern society across Europe. [www.eurocopper.org](http://www.eurocopper.org)*

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