

The importance of minerals in diet and signs of deficiencies.

Roya Schulin*

Department of Nutrition, ETH Zurich, Institute of Food, Nutrition and Health Zurich, Switzerland

Introduction

Minerals are essential nutrients that are required in small amounts by the body to perform various functions. These minerals play a vital role in maintaining a healthy body, and a balanced diet must contain an adequate amount of minerals to ensure proper growth and development. There are two types of minerals: macro-minerals and micro-minerals. Macro-minerals, such as calcium, magnesium, and potassium, are required in larger amounts, while micro-minerals, such as iron, zinc, and iodine, are required in smaller amounts. In this article, we will discuss the importance of minerals in the diet and the signs of deficiencies [1].

Importance of minerals in diet

Minerals are essential for many functions in the body, including building strong bones and teeth, regulating metabolism, maintaining fluid balance, transmitting nerve impulses, and supporting the immune system. Without an adequate supply of minerals, the body cannot function properly, and deficiencies can lead to a variety of health problems. Calcium is essential for building strong bones and teeth, regulating heart rate, and maintaining nerve function. Calcium deficiency can lead to osteoporosis, a condition in which bones become weak and brittle, making them more susceptible to fractures [2].

Magnesium is required for muscle and nerve function, regulating blood pressure, and maintaining a healthy immune system. Deficiencies in magnesium can lead to muscle cramps, fatigue, and irregular heartbeats. Potassium is essential for maintaining fluid balance in the body, regulating muscle and nerve function, and supporting cardiovascular health. Deficiencies in potassium can lead to muscle weakness, fatigue, and irregular heartbeats. Iron is essential for the production of hemoglobin, which carries oxygen in the blood. Deficiencies in iron can lead to anemia, a condition in which the body does not have enough red blood cells to carry oxygen to the body's tissues.

Zinc is required for the production of DNA, wound healing, and supporting the immune system. Deficiencies in zinc can lead to delayed wound healing, hair loss, and weakened immune function. Iodine is required for the production of thyroid hormones, which regulate metabolism. Deficiencies in iodine can lead to hypothyroidism, a condition in which the thyroid gland does not produce enough thyroid hormone, leading to fatigue, weight gain, and depression [3].

Signs of deficiencies

Deficiencies in minerals can lead to a variety of health problems. The signs and symptoms of mineral deficiencies can vary depending on the type and severity of the deficiency. Here are some signs of mineral deficiencies:

- Calcium deficiency: weak bones and teeth, osteoporosis, muscle cramps, irregular heartbeats, and high blood pressure.
- Magnesium deficiency: muscle cramps, fatigue, weakness, and irregular heartbeats.
- Potassium deficiency: muscle weakness, fatigue, irregular heartbeats, and high blood pressure.
- Iron deficiency: anemia, fatigue, weakness, shortness of breath, and dizziness.
- Iodine Zinc deficiency: delayed wound healing, hair loss, weakened immune function, and loss of appetite.
- Deficiency: hypothyroidism, fatigue, weight gain, and depression.

It is essential to note that many of these symptoms can also be caused by other health problems, so it is important to consult a healthcare professional if you suspect you may have a mineral deficiency [4].

How to ensure adequate mineral intake

A balanced diet that includes a variety of nutrient-dense foods is the best way to ensure an adequate intake of minerals. Some of the best food sources of minerals include:

- **Calcium:** Dairy products, leafy green vegetables, tofu, and fortified foods such as orange juice and cereal.
- **Magnesium:** leafy green vegetables, nuts and seeds, whole grains, and legumes.
- **Potassium:** bananas, citrus fruits, leafy green vegetables, tomatoes, and avocados.
- **Iron:** red meat, poultry, fish, leafy green vegetables, beans, and fortified cereals.
- **Zinc:** oysters, red meat, poultry, beans, nuts, and whole grains.
- **Iodine:** seafood, seaweed, iodized salt and dairy products.

Supplements can also be used to ensure an adequate intake of minerals, but it is important to consult a healthcare professional before taking any supplements, as excessive intake can lead to toxicity [5].

*Correspondence to: Roya Schulin, Department of Nutrition, ETH Zurich, Institute of Food, Nutrition and Health Zurich, Switzerland, E-mail: schulin.roya@gmail.com

Received: 17-Apr-2023, Manuscript No. AAINM-23-98212; Editor assigned: 20-Apr-2023, PreQC No. AAINM-23-98212(PQ); Reviewed: 04-May-2023, QC No. AAINM-23-98212;

Revised: 08-May-2023, Manuscript No. AAINM-23-98212(R); Published: 15-May-2023, DOI: 10.35841/ainm-7.3.144

Conclusion

Minerals play a vital role in maintaining a healthy body, and deficiencies can lead to a variety of health problems. To ensure an adequate intake of minerals, it is essential to consume a balanced diet that includes a variety of nutrient-dense foods. It is also important to consult a healthcare professional if you suspect you may have a mineral deficiency, as many of the symptoms can be caused by other health problems. By prioritizing a healthy, balanced diet, we can ensure that our bodies receive the minerals they need to function properly and maintain optimal health.

References

1. Sandstead HH, Prasad AS, Schulert AR, et al. Human zinc deficiency, endocrine manifestations and response to treatment. *Am J Clin Nutr.* 1967;20:422-42.
2. Turnlund JR, King JC, Keyes WR, et al. A stable isotope study of zinc absorption in young men: Effects of phytate and a-cellulose. *Ame J Clin Nutr.* 1984;40(5):1071-7.
3. Steel LI, Cousins RJ. Kinetics of zinc absorption by lumenally and vascularly perfused rat intestine. *Am J Physiol Gastrointest Liver Physiol.* 1985;248(1):G46-53.
4. Liuzzi JP, Cousins RJ. Mammalian zinc transporters. *Annu Rev Nutr.* 2004;24:151-72.
5. Hambidge M, Krebs NF. Interrelationships of key variables of human zinc homeostasis: Relevance to dietary zinc requirements. *Annu Rev Nutr.* 2001;21(1):429-52.