THINK ZINC

The Power of Zinc for Human Health

Role of Zinc in Human Metabolism

Over the last decades, we have learned a lot about the benefits of zinc and its role in human metabolism. This knowledge helps to prevent zinc deficiencies, optimize diets and recommend the right supplementation when needed.

Zinc is an essential trace element which exerts many functions in various biological and physiological processes in the human body. The essentiality of zinc in humans was established in 1963, and during the past 50 years, tremendous advances in both clinical and basic sciences of zinc metabolism in humans have been observed (1). In humans, zinc plays a significant role in the antioxidant defense system and helps to optimize immune function.

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Risk for Zinc Deficiency in Humans

Interestingly, approximately 95% of the zinc in the body is within the cells (2). The constant state of cellular zinc nutrition (called homeostasis) is naturally controlled by the human body and is maintained by adjustments in total zinc absorption and endogenous intestinal excretion. Through this synergistic process, the human body constantly works on maintaining homeostasis, and even has the capacity to cope with large fluctuations in intake (3). When homeostasis is disrupted, the uptake of zinc can be hindered, leading to a deficiency.

This can be due to dietary factors, antagonists in the gastrointestinal tract (such as other minerals) or the use of certain medications. The first human that was discovered with a zinc deficiency was in the early 1960s. Today, zinc deficiency still occurs and the risk for it is higher in areas where food sources are limited, with diets that contain a high proportion of grains and peas and those that are low in animal protein. These factors can increase the total phytic acid intake, which inhibits the uptake of minerals, including zinc, that are present in the diet.

How to Recognize a Zinc Deficiency

In general, zinc is essential for multiple metabolic functions. When people have a zinc deficiency, it leads to a range of diverse biochemical changes, which may not be obvious and can differ between individuals (4). The first impact of low zinc status is the decrease in the signaling function that turns genes on or off. If the zinc status continues to be low, the immune system is more prone to be affected, increasing risk for infection. Finally, if the body becomes zinc deficient, structural function will start to diminish (e.g. loss of keratin, the structure of nails and hair). The symptoms associated with a zinc deficiency are more diverse than seen with micro-elements that have specific functions in the body. For instance, a lack of iron can lead to anemia, a vitamin C deficiency may lead to the development of scurvy and the disease pellagra is associated with a niacin (vitamin B3) deficiency.

Dietary Reference Values for Zinc

The total amount of zinc in the body is approximately 1.5 g in women and 2.5 g in men (5) and the dietary reference values for zinc range from 6.2-10.2 mg/day for women and 7.5-12.7 mg/day for men, dependent on their dietary choices (6). Infants, children, adolescents, pregnant and lactating women have increased requirements for zinc and are at increased risk of zinc deficiency. But with today's dietary choices (more plant-based in some regions, high sugar intake, among others) and the presence of other factors such as the use of medication, can increase the risk for developing zinc deficiency. Health conditions like liver disease or prostate issues can also lead to a zinc deficiency. Supplementation can be recommended to replenish zinc levels in these groups.

Why Choose Zinc from Zinpro®?

When deciding on which zinc supplements to take, it is important to choose a source that can be easily absorbed by the human body. Zinc amino acid complexes are morestable in the gastrointestinal tract, which results in better absorption (bioavailability) than their inorganic counterparts. For over 52 years, Zinpro has been a pioneer in the research and development of performance trace minerals and innovative nutritional solutions. The company's dedication to improving health and wellbeing has led to the development of the patented Zinpro® Zinc LG, a new generation of zinc, marked by a unique combination of an organic zinc source with glutamic acid (Glu) and lysine (Lys). This ensures superior zinc uptake, which could lead to increased zinc levels in humans.

Learn more at
zinpro.com/zinc

ZINPRO® ZINC LG

Three Main Takeaways

1. During the past 50 years, tremendous advances in both clinical and basic sciences of zinc metabolism in humans have been observed
2. Infants, children, adolescents, pregnant and lactating women have more requirements for zinc and can be at increased risk of zinc deficiency
3. When deciding on supplementation, it is important to choose a zinc source that can be easily absorbed by the human body

References available upon request

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