ZINC CITRATE
15 mg

NPN 80004571

RESEARCH INFORMATION

Feature summary

Natural Factors Zinc Citrate is a low-dose zinc supplement for the maintenance of good health. Zinc is well known to support and protect the immune system, but it is also an essential trace mineral needed for numerous other functions throughout the body.

Zinc helps in connective tissue formation and has a positive effect on maintaining healthy skin and membranes, such as in wound healing. It also helps maintain healthy hair, nails, and bones. Zinc is needed to maintain the body's ability to metabolize nutrients and is a constituent of over 200 enzymes involved in digestion and metabolism. This includes the enzymes with roles in detoxification, bone metabolism, protein digestion, and energy production. It is also a component of insulin and is needed to break down alcohol.

Each Zinc Citrate tablet contains 15 mg of elemental zinc in a citrate form that is well absorbed and readily metabolized by the body. It is a great choice for people with low stomach acid levels or digestive disturbances that increase the risk of zinc insufficiency, as well as anyone with an inadequate mineral intake who needs help meeting their daily zinc requirements.

How it works

Zinc has structural, catalytic, and regulatory roles throughout the body. It has multiple functions in the development and maintenance of the immune system, including the production of immune cells, such as neutrophils, macrophages, and natural killer cells (Prasad, 2008). Zinc can also work as an antioxidant to counteract free radical damage generated from inflammatory processes (Prasad, 2008).

Zinc is involved in the formation of collagen, a structural protein needed to grow hair, skin, nails, and other connective tissues in the body, and has been shown to play a role in bone regeneration (O'Connor et al., 2020). It also helps with wound healing by stimulating cell division and the transport of vitamin A to the skin (Bhowmik et al., 2010).

Proper energy metabolism relies on zinc through its role as a cofactor for enzymes involved in protein, fat, and glucose metabolism, as well as insulin synthesis, storage, and secretion (Farooq et al., 2020). Additionally, zinc is needed for cell signalling, regulating the release of hormones, and influencing nerve impulses. It is an important element for thyroid and prostate gland function and to maintain normal testosterone levels (Bhowmik et al., 2010).

Bioavailability plays an important role in a person's zinc levels, with only 20–40% of the zinc from food being absorbed into the body (PennState Hershey Medical Center, 2013). Dietary compounds, such as phytic acid and iron, inhibit its availability from foods, while inflammatory and digestive disorders also reduce the amount that can be absorbed (Roohani et al., 2013).

Research

Zinc is an essential trace mineral needed for the maintenance of overall health. It is critical to the function of over 200 enzymes involved in major metabolic activities throughout the body (Wegmuller et al., 2014).

Zinc deficiency can lead to an array of symptoms, including impaired cognitive function, skin problems, such as acne, dermatitis, and psoriasis, hair loss, reduced appetite, recurrent infections, poor wound healing, and night blindness (Roohani et al., 2013). Deficiency may be caused by an inadequate dietary intake and the consumption of interfering nutrients that reduce its bioavailability, such as phytic acid. Vegans, vegetarians, the elderly, people with digestive disorders, and alcoholics are at a greater risk of zinc deficiency (Wegmuller et al., 2014).

Supplemental zinc helps correct deficiency and is available in various forms, including citrate, sulfate, acetate, oxide, and gluconate. In terms of bioavailability and ease of use, zinc citrate is considered an effective form. It was shown through a randomized, double-blind study to have an absorption rate of 61.3%, which was significantly higher than that of zinc oxide at 49.9% and comparable to zinc gluconate at 60.9% (Wegmuller et al., 2014).

An adequate zinc intake is essential for proper immune function. A randomized, double-blind, placebo-controlled trial found that daily supplementation with 30 mg of zinc had a positive effect on the immune response of elderly nursing home residents. In a period of over three months of supplementation, participants experienced a 47% higher increase in blood lymphocyte (T cell) levels than participants taking a daily placebo containing only 5 mg of zinc (Barnett et al., 2016). In addition, Air Force Academy cadets who supplemented with 15 mg of zinc per day in a seven month, randomized, placebo-controlled trial reported an 11% lower frequency of cold episodes (Veverka et al., 2009).

Healthy 55–70-year-old participants were supplemented with either 15 mg or 30 mg of zinc per day in a double-blind, placebo-controlled study. After six months, participants who had taken the lower dose of zinc had a positive increase in lymphocyte ratios (CD4/CD8) compared to the placebo group. This ratio is considered a predictor of survival in old age and therefore indicated a positive effect on participants' adaptive immunity. In contrast, the higher dose did not have a positive effect on immune status (Hodkinson et al., 2007).

Zinc is involved in wound repair and tissue regeneration. Deficiency has been shown to worsen mucosal inflammation in people suffering from inflammatory bowel disease (IBD). A review of clinical data found a significant association between zinc deficiency and an increased risk of hospitalizations, surgeries, and complications in patients with Crohn's disease and ulcerative colitis. Patients who took measures to correct their deficiency were also found to reduce their incidence of hospitalizations, surgeries, and complications compared to those who remained deficient (Siva et al., 2017).

People with low zinc levels are at a greater risk of infection, which can lead to skin problems (Lei et al., 2019). Additionally, an imbalance in the body's copper to zinc ratio is an underlying factor of skin disorders like psoriasis. A meta-analysis of 15 studies found that patients with psoriasis had significantly higher blood copper levels and lower blood zinc levels than healthy controls. In cases where psoriasis progressed, zinc levels were found to decrease further (Lei et al., 2019). Zinc is essential to the proper metabolism of protein, fat, and glucose. In a double-blind, randomized placebo-controlled trial, pre-diabetic adults supplementing with 30 mg of zinc per day for six months were shown to have significantly improved fasting blood glucose concentrations and blood lipid profiles (Islam et al., 2016).

Ingredients

Each tablet contains:

Zinc (citrate) ..... 15 mg

Dosage

Recommended adult dose: 1–2 tablets daily with with a meal, a few hours before or after taking other medications, or as directed by a health care practitioner.

Cautions

Zinc supplementation can cause a copper deficiency. Keep out of the reach of children.

References

Barnett, J. B., Dao, M. C., Hamer, D. H., et al. (2016). Effect of zinc supplementation on serum zinc concentration and T cell proliferation in nursing home elderly: a randomized, double-blind, placebo-controlled trial. *The American Journal of Clinical Nutrition, 103*(3), 942-51.

Bhowmik, D., Bhattacharjee, C., Kumar, S. (2010). A potential medicinal importance of zinc in human health and chronic disease. *International Journal of Pharmacy and Biomedical Sciences, 1*(1), 5-11.

Farooq, D. M., Alamri, A. F., Alwhahabi, B. K., et al. (2020). The status of zinc in type 2 diabetic patients and its association with glycemic control. *Journal of Family & Community Medicine, 27*(1), 29-36.

Hodkinson, C. F., Kelly, M., Alexander, H. D., et al. (2007). Effect of zinc supplementation on the immune status of healthy older individuals aged 55-70 years: The ZENITH study. *The Journals of Gerontology, 62*(6), 598-608.

Islam, R., Attia, J., Ali, L., et al. (2016). Zinc supplementation for improving glucose handling in pre-diabetes: A double blind randomized placebo controlled pilot study. *Diabetes Research and Clinical Practice, 115,* 39-46.

Lei, L., Su, J., Chen, J., et al. (2019). Abnormal serum copper and zinc levels in patients with psoriasis: A meta-analysis. *Indian Journal of Dermatology, 64(*3), 224-30.

O'Connor, J. P., Kanjilal, D., Teitelbaum, M., et al. (2020). Zinc as a therapeutic agent in bone regeneration. *Materials (Basel, Switzerland), 13*(10), 2211.

PennState Hershey Medical Center. (2013). Zinc [Internet]. Pennstatehershey.adam.com. Retrieved from http://pennstatehershey.adam.com/content.aspx?productid=107&pid=33&gid=000344

Prasad, A. S. (2008). Zinc in human health: effect of zinc on immune cells. *Molecular Medicine, 14*(5-6), 353-7.

Roohani, N., Hurrell, R., Kelishadi, R., et al. (2013). Zinc and its importance for human health: An integrative review. *Journal of Research in Medical Sciences: The Official Journal of Isfahan University of Medical Sciences, 18*(2), 144-57.

Siva, S., Rubin, D. T., Gulotta, G., et al. (2017). Zinc deficiency is associated with poor clinical outcomes in patients with inflammatory bowel disease. *Inflammatory Bowel Diseases, 23*(1), 152-7.

Veverka, D. V., Wilson, C., Martinez, M. A., et al. (2009). Use of zinc supplements to reduce upper respiratory infections in United States air force academy cadets. *Complementary Therapies in Clinical Practice, 15*(2), 91-5.

Wegmüller, R., Tay, F., Zeder, C., et al. (2014). Zinc absorption by young adults from supplemental zinc citrate is comparable with that from zinc gluconate and higher than from zinc oxide. *The Journal of Nutrition, 144*(2), 132-6.