

## Zinc Lozenges

### DESCRIPTION

Zinc Lozenges, provided by Douglas Laboratories®, supply bioavailable zinc, sweetened with sorbitol and flavored with natural orange extracts. Each tablet contains 10 mg of elemental zinc in the form of zinc citrate.

### FUNCTIONS

Zinc is an essential trace element involved in most major metabolic pathways. General signs of human zinc deficiency indicate that zinc has important functions in maintaining immune function, reproduction, healthy skin, and growth. Numerous studies support the fundamental role of zinc in normal immune response in humans. Immune cells must be able to rapidly divide in order to respond to daily challenges. Like all rapidly dividing cells, immune cells depend on adequate amounts of dietary zinc. As a cofactor of the antioxidant enzyme superoxide dismutase (SOD), zinc can be considered an antioxidant nutrient. Zinc supplementation has been shown to increase the antioxidant activity of SOD, and provide increased free radical protection. Zinc deficiency is associated with increased oxidative damage. Absorption of toxic heavy metals, especially cadmium and lead, is lower in individuals with high zinc status compared to those with low zinc status.

The body pool of readily available zinc appears to be small, which renders the body susceptible to deficiency and therefore dependent on a steady dietary supply of bioavailable zinc. While typical zinc intakes in U.S. adults are between 10 and 15 mg per day, which approach the RDA, intakes in the elderly are often low. Pregnant women are also at risk for zinc deficiency, since they have a higher requirement for this trace element. Frequently, vegetarians and chronically depressed individuals have been found to have low zinc status.

### INDICATIONS

Zinc Lozenges may be a useful nutritional adjunct for individuals who wish to increase their intake of zinc.

### FORMULA (#ZNL)

Each tablet contains:

Zinc (from zinc citrate).....10 mg

Other ingredients: Sorbitol, citric acid, natural orange flavor, and vegetable stearate.

### SUGGESTED USE

One lozenge every two hours while awake or as directed by a healthcare professional. Allow to dissolve completely in the mouth. Do not exceed ten lozenges per day. Prolonged use of more than seven days in a row is not recommended. Consult your physician if you wish to extend use or increase frequency. When used on a regular basis, one or two lozenges per day may be taken for extended periods.

### SIDE EFFECTS

No adverse side effects have been reported.

### STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

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### REFERENCES

- Abdallah SM, Samman S. The effect of increasing dietary zinc on the activity of superoxide dismutase and zinc concentration in erythrocytes of healthy female subjects. *Eur J Clin Nutr* 1993;47:327-332.
- Brignola C, Belloli C, De Simone G, et al. Zinc supplementation restores plasma concentrations of zinc and thymulin in patients with Crohn's disease. *Aliment Pharmacol Ther* 1993;7:275-280.
- Food and Nutrition Board, National Research Council. Recommended Dietary Allowances. 10th ed. Washington, D.C. National Academy Press, 1989.
- Donovan UM, Gibson RS. Iron and zinc status of young women aged 14 to 19 years consuming vegetarian and omnivorous diets. *J Am Coll Nutr* 1995;14:463-472.
- Goyer RA. Nutrition and metal toxicity. *Am J Clin Nutr* 1995;61 Suppl.646S-650S.
- Gupta RK, Bhattacharya SK, Sundar S, Kumar K, Kachhawaha JS, Sen PC. A correlative study of serum zinc and in vivo cell mediated immune status in rheumatic heart disease. *Acta Cardiol* 1996;47:297-304.
- Hong Bin Q, Garfinkel D. The cadmium toxicity hypothesis of aging: A possible explanation for the zinc deficiency hypothesis of aging. *Med Hypotheses* 1994;42:380-384.
- Keen CL, Gershwin ME. Zinc deficiency and immune function. *Annu Rev Nutr* 1990;10:415-431.
- King JC, Keen CL. Zinc. In: Shils ME, Olson JA, Shike M, eds. *Modern Nutrition in Health and Disease*. 8th ed. Philadelphia: Lea & Febiger, 1994:214-230.
- Maes M, D'Haese PC, Scharpé S, D'Hondt P, Cosyns P, De Broe ME. Hypozincemia in depression. *J Affect Disord* 1994;31:135-140.
- Mares-Perlman JA, Subar AF, Block G, Greger JL, Luby MH. Zinc intake and sources in the US adult population: 1976- 1980. *J Am Coll Nutr* 1995;14:349-357.
- Mei W, Dong ZM, Liao BL, Xu HB. Study of immune function of cancer patients influenced by supplemental zinc or selenium-zinc combination. *Biol Trace Elem Res* 1991;28:11-19.
- Mossad, SB, et. al. Zinc Gluconate Lozenges for Treatment of the Common Cold: A Randomized, Double-Blind, Placebo-Controlled Study. *Annals of Internal Medicine* July 15, 1996;125(2):81-88.
- Olin KL, Golub MS, Gershwin ME, Hendrickx AG, Lonnerdal B, Keen CL. Extracellular superoxide dismutase activity is affected by dietary zinc intake in nonhuman primate and rodent models. *Am J Clin Nutr* 1995;61:1263-1267.
- Oteiza PI, Olin KL, Fraga CG, Keen CL. Zinc deficiency causes oxidative damage to proteins, lipids and DNA in rat testes. *J Nutr* 1995;125:823-829.
- Prasad AS. Zinc: an overview. *Nutrition* 1995;11:93-99.
- Prasad AS, Fitzgerald JT, Hess JW, Kaplan J, Pelen F, Dardenne M. Zinc deficiency in elderly patients. *Nutrition* 1993;9:218-224.
- Roebothan BV, Chandra RK. Nutrient consumption and body size in a group of institutionalized elderly. *Nutr Res* 1994;14:35-39.
- Sherman AR. Zinc, copper, and iron nutriture and immunity. *J Nutr* 1992;122:604-609.
- Singh A, Failla ML, Deuster PA. Exercise-induced changes in immune function: Effects of zinc supplementation. *J Appl Physiol* 1994;76:2298-2303.
- Small SP, Best DG, Hustins KA. Energy and nutrient intakes of independently-living, elderly women. *Can J Nurs Res* 1994;26:71-81.

**For more information on Zinc Lozenges visit [douglaslabs.com](http://douglaslabs.com)**

† These statements have not been evaluated by the Food and Drug Administration.  
This product is not intended to diagnose, treat, cure, or prevent any disease.

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Your patients trust you.**