

Immuno-Zn Lozenge

Slow dissolving zinc plus elderberry lozenge for immune support*



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Immuno-Zn Lozenge is a combination of zinc and elderberry delivered in an easy-to-dissolve lozenge with a delicious mixed berry flavor to support overall immune health, especially during cold and flu season.* Each sugar-free lozenge provides 25 mg zinc (as zinc gluconate combined with zinc citrate) and 100 mg elderberry fruit (*Sambucus nigra*). The lozenge delivery system is ideal for enhanced absorption and allows the active ingredients to stay in the mucosal areas of the upper gastrointestinal tract to support upper respiratory tract health, sore throats and symptoms associated with the common cold and flu.*

Adequate zinc levels are essential for healthy functioning of every cell in the body. The beneficial effects of zinc are extensive because this mineral is the body's most abundant intracellular trace element, and at least 200 zinc-dependent enzymes have been identified.¹ Zinc is essential for growth and physical development and for the metabolism of proteins, fats and carbohydrates. Most aspects of reproduction in both males and females require zinc. This mineral is also vitally important to the immune system. Practically every enzyme reaction in the brain involves zinc and so does the development and function of the central nervous system. The highest concentrations of zinc are in the brain, ears and eyes. Some individuals are poor absorbers of this mineral, but most cases of zinc deficiency are due to poor diet, chronic stress, vegetarianism or excessive alcohol intake. Some deficiencies result from exposure to toxic metals, such as cadmium from cigarettes or excess copper from copper-lined tap water pipes. Severe deficiency is associated with skin changes, diarrhea, hair loss, mental disturbances and recurrent infections as a result of impaired immune function.^{1,2}

Antiviral Properties of Zinc

Zinc is involved in virtually every aspect of the immune response.² Zinc status and homeostasis are critical factors in both innate and humoral antiviral immunity, including activity against several viruses that cause the common cold, influenza and coronaviruses.^{3,4} A clinical study found that using zinc lozenges reduced cold symptoms from an average of 7 days to 4 days.⁵ Similarly, a recent meta-analysis of placebo-controlled zinc lozenge trials showed that >75 mg/day dose of zinc gluconate, delivered as a lozenge, decreased the duration of the common cold by 33%.⁶

Zinc targets the NF- κ B transcription factor, thus modulating proinflammatory responses. Zinc also plays a critical role in regulating oxidative stress and inflammatory cytokines.⁷ Supplementing with zinc has been shown to stimulate the synthesis of white blood cells and support the activity of other immune system components, such as neutrophils, T-lymphocytes and tumor-fighting natural killer cells.¹ Zinc helps to increase the number of T cells, especially in the elderly, as this population is often deficient in this mineral.¹ Zinc is also required for producing thymulin, the major thymus hormone. A reduction of thymulin may lead to impaired immune function.⁸

Zinc is a vital part of viral enzymes, proteases and RNA polymerases.³ Inadequate zinc levels weaken the host's defense, as it disrupts lymphocyte formation and maturation, and intracellular cytokine communication.⁹ Zinc-deficient populations are most at risk of acquiring viral infections; deficiencies were shown to increase respiratory and diarrheal morbidity, especially in children, as zinc greatly influences immune health.^{3,9} Both human and animal *in vivo* studies have shown zinc administration to play a critical role in reducing disease burden and inhibiting viral infections, such as coronaviruses, influenza, the common cold and rhinoviruses.^{3,4}

Highlights:

- Sugar-free; no impact on blood glucose levels
- Clean, low allergen ingredients
- Easy-to-dissolve
- Quick absorption
- Enhanced bioavailability

Elderberry's Role in Immune Health

Elderberry, commonly referred to as European elder, is grown in most parts of Europe, North Africa, West Asia and now the U.S., and nearly every part of the plant is utilized medicinally, as dietary supplements or for culinary purposes.¹⁰ The flowers and berries of *Sambucus nigra* are most often used medicinally and contain a variety of flavonoids that have been found to possess a variety of biochemical actions, including antioxidant, anti-inflammatory, antiviral, anticarcinogenic and immunologic properties.¹⁰⁻¹² Research demonstrates that among all fresh fruits or berries, elderberry is measured to be one of the highest in antioxidant capacity and is one of the most commonly used botanicals for medicinal purposes in the world.¹¹ An *in vitro* study examining extracts from American-cultivated elderberries on microglial cells showed remarkable antioxidant properties by suppressing interferon gamma-induced reactive oxygen species and phospho-Erk1/2 expression.¹²

In a meta-analysis, *Sambucus nigra* supplementation was shown to significantly attenuate upper respiratory symptoms and may be a potential alternative to other treatments for influenza, the common cold and viral infections of the upper respiratory tract.¹³ Standardized elderberry extract demonstrated antimicrobial and antiviral properties *in vitro* against gram-positive and gram-negative bacteria and by inhibiting the proliferation of human influenza virus.¹⁴ In addition to its medicinal properties, it has a pleasant taste, rendering it very useful in creating liquid herbal extracts and lozenges, such as the Designs for Health® Immunoberry™ Liquid and Immuno-Zn Lozenge, which are suitable for all ages during acute infection.*

Supplement Facts

Serving Size 1 lozenge

Amount Per Serving		% Daily Value
Zinc (as Zinc Gluconate and Zinc Citrate)	25 mg	227%
Elderberry Extract (<i>Sambucus nigra</i>)(fruit)	100 mg	*

*Daily Value not established.

Other Ingredients: Xylitol, mannitol, vegetable stearate, natural berry flavor, malic acid, and luo han guo extract (fruit).

Recommended Use:

- Take 1 lozenge per day, let dissolve slowly in mouth, or as directed by your health-care practitioner.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/techsheet-references/immuno-zn-lozenge-references.pdf>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities. Individual monitoring, including liver function tests, may be appropriate.

*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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