

Elderberry Gummies

Berry Blast Flavor

**Doctor's
BEST**
Science-Based Nutrition™



INGREDIENTS

Elderberry with Vitamin C & Zinc Gummies are made of three natural ingredients: Vitamin C, Elderberry, and zinc. These three components have clinically shown to help support your immune system.* Vitamin C is an essential dietary component for our body. It acts as a potent antioxidant and helps the immune system work properly.¹ Elderberry plants is a well-known herb traditionally used by Native Americans for various ailments and for infections and coughs. Research has demonstrated elderberry to have immune-modulating activities with beneficial effects on immune function and health.^{2,3} Zinc is an essential mineral found in our cells throughout the body. It is also naturally present in some foods and available as a dietary supplement. Research has found zinc to be essential in numerous aspects of cellular metabolism and critical in the proper function of our immune system.⁴ Zinc is also found in many natural cold remedies. **Elderberry with Vitamin C & Zinc Gummy** has been especially formulated to provide potent antioxidant protection to the body, help enhance immune system, and maintain healthy immune function.*

BENEFITS

- Provide potent antioxidant protection*
- Helps enhance immune system*
- Helps Support a healthy immune function*
- Contributes to reducing oxidative stress*

Importance of Vitamin C in providing potent antioxidant protection and supporting immune system*

Vitamin C (also known as ascorbic acid) is not produced endogenously in humans and is therefore an essential nutrient component. It can be consumed through dietary sources like fresh fruits and vegetables, especially citrus fruits, or through dietary supplements. The Food and Nutrition Board has provided intake recommendations for vitamin C such as the recommended dietary allowance (RDAs: Average daily level of intake sufficient to meet the nutrient requirements of nearly all healthy individuals). For vitamin C, levels are based on its known physiological and antioxidant functions in white blood cells and are much higher than the amount required for protection from deficiency (RDAs for adults are 75 mg for women and 90 mg for men).⁵

Vitamin C is a potent water-soluble antioxidant that contributes to immune defense by supporting various cellular functions of the complex immune system.¹ It gives the immune system a boost through its increase in T-lymphocyte activity, phagocyte function, leukocyte mobility, and possible antibody production. Its effects on the immune system may also be potentially explained through protection against oxidative stress generated during infections.^{6,7}

A meta-analysis of nine randomized controlled trials examined the effect of extra dose of vitamin C (based on a daily supplementation) on shortening the common cold. Results found that administration of extra therapeutic doses of vitamin C, at the onset of cold and despite routine supplementation of vitamin C, was helpful in reducing the duration of the common cold, shortening the time of confinement indoors, and relieving the symptoms associated with it, including chest pain, fever, and chills. The authors of the meta-analysis concluded extra doses of vitamin C could benefit individuals who get the common cold despite taking daily vitamin C supplements.*⁸

A randomized, double-blind, eight-week trial examined the effect of vitamin C on physical activity and respiratory tract infections during the peak of the cold season. Healthy non-smoking young adult men received either 1000 mg of vitamin C daily or placebo. In the final two weeks of the trial, the physical activity score rose modestly for the vitamin C group compared to the placebo group. The number of participants reporting cold episodes was 7 in the vitamin C group and 11 in the placebo group. Cold duration was reduced 59% in the vitamin C group compare to the placebo groups. Based on these results, the authors concluded vitamin C supplementation can have health advantages by reducing cold incidence in a population with adequate-to-low vitamin C status.*⁹

Supplement Facts

Serving Size 2 Gummies
Servings Per Container 30

	Amount Per Serving	% Daily Value
Calories	15	
Total Carbohydrate	4 g	1%**
Total Sugars	3 g	†
Includes 3 g Added Sugars		6%**
Vitamin C (as ascorbic acid)	90 mg	100%
Zinc (from zinc citrate)	7.5 mg	70%
Sodium	20 mg	1%
Black Elderberry (<i>Sambucus nigra</i> L.)(fruit)	100 mg	†

**Percent Daily Values are based on a 2,000 calorie diet.
†Daily Value not established.

Other Ingredients: Organic tapioca syrup, raw cane sugar, water, pectin, sodium citrate, natural flavors, citric acid, coconut oil, carnauba wax.

Suggested Adult Use: Chew two (2) gummies daily or as recommended by a nutritionally-informed physician. Chew thoroughly before swallowing.

WARNING: Consult your physician before using elderberry if you have autoimmune diseases.

KEEP OUT OF REACH OF CHILDREN

Store in a cool dry place.

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Research has shown vitamin C and the mineral zinc to be essential micronutrients required to support a normal immune function. Through their complementary and synergistic effects, they support components of the complex immune system which remains the first line of defense for our body against all external pathogens and other toxic elements. Furthermore, vitamin C and zinc are actively used by cells of the immune system engaged in fighting infections like upper respiratory tract infections and a state of micronutrient deficiency can arise during severe infections. Based on many works, there is a good scientific rationale for combining vitamin C and zinc to support and modulate immune functions to better protect our body against the common cold and other infectious pathogens.*¹⁰⁻¹²

Two independent double-blind, randomized, parallel-group, placebo-controlled clinical studies were conducted to evaluate the effect of vitamin C plus zinc (tablets containing 1000 mg of vitamin C and 10 mg of zinc) in participants with common cold. Study 1 was conducted with 30 participants and for only 5 day-treatment while study 2 had 64 participants and treatment was for 10 days. Common-cold symptoms were evaluated (rhinorrhea, cough, laryngeal irritation, myalgia, headache, rectal temperature). Both studies had the same results: participants who received vitamin C + Zinc showed a reduction in duration of rhinorrhea and a relief of discomfort due to nasal obstruction compared to participants who received placebo. Based on these findings, it was concluded that supplementation with vitamin C plus zinc could represent an efficacious measure to help improving quality of life by improving the symptoms of the common cold.*¹³

Importance of Zinc in supporting and enhancing immune system*

Zinc is an essential trace element that functions in the body as a co-factor for several enzymes or as a structural element for a variety of proteins. It is well-known that zinc deficiency can result in growth retardation, delayed wound healing, and high incidence of infection; the latter points are due to its importance for the immune system. Moreover, zinc is crucial for the functioning of virtually all immune cells. For example, zinc is an essential component of thymulin, a thymic hormone involved in maturation and differentiation of T-cells. Zinc supplementation has been shown to promote regulatory T-cell development therefore having a positive effect on immune system.¹⁴ The fundamental elements of zinc for the immune system has been known since the 1960s and the corresponding mechanistic knowledge has been expanding ever since. Many studies have shown the importance of zinc in supporting and enhancing immune system.¹⁵ They have also demonstrated the importance of maintaining an adequate zinc status in elderly population. As we age, our immune system is more susceptible to weakening, which can lead to serious health problems. In order to limit this decline, it is essential to maintain healthy immunity through a diet rich in phytochemicals and essential nutrients. Consequently, maintaining an adequate zinc level in the body can limit the decline in immune function and reduce the risk of getting ill as we age.*¹⁶

A randomized double-blind, placebo-controlled trial of zinc supplementation was conducted in elderly individuals aged 55–87 years. The zinc supplemented group received zinc gluconate (45 mg elemental zinc daily) for 12 months. The incidence of infections and ex-vivo generation of plasma oxidative stress markers were significantly lower in the zinc supplemented group than in the placebo group. Plasma zinc and PHA induced IL-2 mRNA in isolated mononuclear cells (MNC) were significantly higher in the zinc supplemented group than in the placebo group. Thus, this study demonstrated the beneficial effect of zinc supplementation on cell-mediated immunity and oxidative stress markers in the elderly population.¹⁷

A placebo-controlled clinical trial was conducted to evaluate the impact of zinc lozenges on the common cold. Compared with the placebo group, the zinc group had a shorter mean overall duration of cold and shorter duration of cough and nasal discharge. It was also noted that the severity scores were decreased significantly in the zinc group. Plasma sIL-1ra and ICAM-1 levels decreased significantly in the zinc group. The authors concluded the administration of zinc lozenges was associated with reduced duration and

severity of cold symptoms and related the improvement in cold symptoms to the antioxidant and anti-inflammatory properties of zinc.¹⁸

A double-blind, placebo-controlled study was conducted to evaluate the therapeutic effect of zinc on the incidence of infections, oxidative stress and biomarkers in patients with sickle cell anemia (SCA). Based on the results, this study showed that zinc as a therapeutic agent may be very useful in reducing infections. The zinc group received 25 mg elemental zinc (as acetate) three times a day for 3 months. The other group received placebo. The zinc-supplemented group had decreased incidences of infection in comparison to the placebo group. After zinc supplementation, plasma zinc and antioxidant power increased; plasma nitrite and nitrate (NOx), lipid peroxidation products, DNA oxidation products, and soluble vascular cell adhesion molecule-1 (VCAM-1) decreased compared to the placebo group. Zinc-supplemented individuals exhibited significant decreases in LPS induced TNF- α and IL-1 β mRNAs, and TNF- α induced NF- κ B DNA binding in MNC compared with the placebo group. This study showed the beneficial effect of zinc supplementation on helping with infections in individuals with SCA.¹⁹

A randomized, double-blind, placebo-controlled trial evaluated the effect of zinc (Zn) supplementation on serum zinc concentration and T-cell proliferation among elderly participants in nursing home. Thirty-one individuals (≥ 65 years old) were randomly assigned to zinc (30 mg zinc daily) or placebo (5 mg zinc daily) groups. The primary outcome measure was change in serum zinc concentrations between baseline and the third month, but the study also explored the effects of zinc supplementation on immune response. Based on the results, zinc supplementation at 30 mg/day for 3 months is effective in increasing serum zinc concentrations; however, not all zinc-deficient elderly reached adequate concentrations. The increase in serum zinc concentration was associated with the enhancement of T-cell function mainly because of an increase in the number of T-cells. This study confirms the feasibility of identifying and supplementing zinc-deficient elderly with a low-cost intervention of 30 mg zinc daily in nursing homes, and that this dose of zinc is safe.*²⁰

A meta-analysis of seven randomised trials (that used a zinc dose greater than 75 mg daily) was conducted to determine the efficacy of zinc acetate lozenges versus zinc gluconate lozenges in 575 participants with naturally acquired common colds and to examine the dose-dependency of the effect. Based on the compiled data, the mean common cold duration was 33% shorter for the zinc groups of the seven included trials. The difference between the two salts was not significant. Five trials used zinc doses of 80–92 mg/day, common cold duration was reduced by 33%, and two trials used zinc doses of 192–207 mg/day and found an effect of 35%. The difference between the high dose and low-dose zinc trials was not significant. The authors concluded that properly composed zinc gluconate lozenges may be as effective as zinc acetate lozenges and using zinc doses over 100 mg daily might not lead to greater efficacy in the treatment of the common cold.*²¹

Importance of Elderberry in supporting immune system*

Sambucus nigra, or European elder, is a tall tree-like shrub, native to Europe, Asia, and North Africa, and naturalized in the United States. Various parts of the elder have long been used in traditional health remedies. The berries were used traditionally as a food to make elderberry wine and pies, and as a flavoring or as a dye. Research has demonstrated *Sambucus nigra* has immune-modulating, antioxidant, and insulin-stimulating properties.²

A randomized, double-blind placebo-controlled clinical trial of 312 economy class passengers travelling from Australia to an overseas

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destination aimed to investigate if a standardized membrane filtered elderberry (*Sambucus nigra L.*) extract has beneficial effects on physical, especially respiratory, and mental health. Cold episodes, cold duration and symptoms were noted in a daily diary and assessed using the Jackson score. Participants also completed three surveys containing questions regarding upper respiratory symptoms and quality of life at baseline, just before travel and at 4-days after travel. Most cold episodes occurred in the placebo group. Placebo group participants had a significantly longer duration of cold episode days and the average symptom score over these days was also significantly higher (583 vs. 247, $p = 0.05$). It was noted that elderberry was generally well tolerated. Based on the results, elderberry supplementation decreased the symptom load and shortened the cold duration by approximately two days. The authors concluded, although the occurrence of the common cold for this trial in travelers was low overall, a significant effect of elderberry on cold duration and cold associated symptoms was detected.²²

SCIENTIFIC REFERENCES



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