

## Supplement Sampler Elderberry (*Sambucus nigra*, *Sambucus canadensis*)

Elderberry can be classified into two main sub-groups: American elder (*Sambucus canadensis*), native to eastern and central North America, and European or black elder (*Sambucus nigra*), found predominantly in Europe, northern Africa, and central and western Asia.<sup>1</sup> Folklore medicinal properties include laxative, diuretic, and diaphoretic as well as treatment for sinus congestion, common cold, stomach ache, constipation, and rheumatism.<sup>1</sup>

### **Best Indications**

- Viral illnesses, most predominantly influenza and upper respiratory infection (URI)
- Sinus congestion

### **Mechanism of Action**

Elderberry's main therapeutic property appears to lie in neutralization of free radicals found in high antioxidant content of the plant, specifically phenols, anthocyanins and flavonols.<sup>1</sup> Specific anthocyanins in elderberry include cyanidin-3-sambubioside and cyanidin-3-glucoside, known as having high antioxidant content, which may prove benefit in use for viral infections.<sup>2</sup> One study has suggested immune modulation via elderberry extract increasing production of TNF alpha interleukin-8, and interleukin-13.<sup>3</sup>

### **Best Study**

- In a randomized, double blind, placebo-controlled trial, 60 patients (18-54 yrs.), with influenza symptoms within the last 48 hours were randomized to receive 15 mL four times daily for 5 days of either standardized treatment syrup containing elderberry extract or placebo syrup without elderberry extract. Patients reported improvement of symptoms using a standardized visual analogue scale. Results showed improvement (p-value <0.001) in the duration of symptoms for treatment group, at 3-4 days vs. 7-8 days for the placebo group.<sup>4</sup>

### **Dose and Formulations**

- Suggested use is within first 48 hours of having symptoms
- Fluid extract (Sambucol, Nature's Way): 15 mL (1 Tbsp.) QID for 3-5 days.<sup>5</sup>
- Capsule form (Sinupret): 2 tablets TID
- Lozenges (ViraBLOC, HerbalScience): 175 mg QID for 3 days.<sup>5</sup>
- Also comes in a variety of commercialized forms including wine, syrup, and dried leaves for tea.

### **Side Effects**

Severe caution is advised if using unprocessed, raw forms of elderberry due to toxin similar to cyanide found in uncooked berry. Cautionary use suggested with simultaneous use of diuretics, laxatives, and theophylline.<sup>6</sup> Mild adverse effects of gastrointestinal upset and vomiting have been reported in consumption of unripened elderberry fruit.<sup>6</sup>



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### **Cost**

Elderberry costs range from \$6-\$10 for 4 oz. to \$13-\$20 for 8 oz. of Sambuca liquid extract. Lozenges range from \$6 for 20 to \$9 for a 30 pack. Elderberry can be found in a variety of formulations at most health food stores and local pharmacies.

### **Clinical Bottom Line**

The use of elderberry in treatment of the common cold, viral upper respiratory infections, and influenza is likely safe. However, more extensive research is needed to prove its potential for medicinal use, as clinical studies are limited.

### **References**

1. Charlebois D. Elderberry as a Medicinal Plant. In Janick J, Whipkey A eds. *Issues in New Crops and New Uses*. Alexandria, VA: ASHS Press; 2007;284-292.
2. Rice-evans CA, Miller NJ, Bolwell PG, Bramley PM, Pridham JB. The relative antioxidant activities of plant-derived polyphenolic flavonoids. *Free Radical Research Group*. 1995;22(4):375-383.
3. Barak V, Halperin T, and Kalickman I. The effect of sambucol, a black elderberry-based natural product on production of human cytokines. *European Cytokine Network*. 2001;12(2):290-296.
4. Zakay-Rones Z, Thoma E, Wollan T, Wadstein J. Randomized study of the efficacy and safety of oral elderberry extract in the treatment of influenza A and B viral infections. *Journal of International Medical Research*. 2004;32:132-140.
5. Barrett B. Viral upper respiratory infection. In Rake D, ed. *Integrative Medicine*. 3<sup>rd</sup> ed. Philadelphia, PA: Saunders, an imprint of Elsevier; 2012:149-157.
6. Ehrlich SD. Elderberry. *University of Maryland Medical Center- Complementary and Alternative Medicine Guide*. <http://umm.edu/health/medical/altmed/herb/elderberry> . Last revised Feb. 2016. Accessed December 11, 2016.

*Brought to you by Alice Shallcross MS-4 and your colleagues in the Integrative Health Program, University of Wisconsin-Madison Department of Family Medicine and Community Health.*

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