

Elderberry Extract May Reduce Symptoms of Acute Viral Respiratory Infections

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Elderberry (*Sambucus nigra*, Adoxaceae) fruits and flowers have been traditionally used to treat common colds and the flu. Elderberry fruit extracts have been shown to have antimicrobial and antiviral properties. Some preclinical studies have shown that elderberry extracts have protective qualities against influenza viruses, specifically by inhibiting viral replication and activating the immune response. The purpose of this review was to determine whether elderberry extract improves outcomes in those with acute respiratory viral infections.

A keyword search was performed using Medline, Embase, AMED, and CINAHL for articles since inception through May 2020. Articles were included with original prospective intervention studies using adult participants with acute respiratory viral infections, written in English, and evaluated elderberry in any form, dose, or route of administration. Studies were excluded that solely involved children or participants with fungal or non-infectious respiratory disease. Forty studies were identified. Of those, 10 were duplicates. Thirty studies were screened by title and abstract; 15 were excluded. Full text screening excluded 10 additional studies for the wrong study design (n = 4), systematic review (n = 4), and duplicated already included studies (n = 2). The pooled sample size was 936 participants between the age of 18 and 70 years, with two studies including children from five and 12 years. Included studies were conducted in China (n = 1), Australia (n = 1), Israel (n = 1), Czech Republic (n = 1), and Norway (n = 1). The conditions studied included influenza, influenza-like symptoms, and common cold. Four studies used mono-herbal preparations of elderberry extract (Two studies used Sambucol[®]; Razei Bar Industries; Jerusalem, Israel; one study used BerryPharma[®]; Iprona AG; Lana, Bolzano, Italy; one study used lozenges containing 175 mg of the proprietary elderberry extract; HerbalScience Singapore Pte. Ltd.; Singapore), and one study used a poly-herbal blend of 240 mg echinacea (*Echinacea purpurea*, Asteraceae) root and 276.5 mg elderberry (Echinaforce[®] Hot Drink; A. Vogel AG; Roggwil, Switzerland). Doses included 15 mL four times per day, three capsules per day, 175 mg lozenge four times a day, or 5 mL of the poly-herbal blend five times a day for days 1-3 followed by maintenance dose of twice a day for days 4-10. Two of the five studies showed

some concern for bias according to the Cochrane Risk of Bias; the remaining three studies reported a low risk of bias. A meta-analysis was not conducted due to heterogeneity of the data.

An overall reduction of symptoms, duration of illness/rate of recovery, and the use of rescue medication were observed in the mono- and poly-herbal groups compared to the control groups. All studies reported a reduction in severity of symptoms, four studies reported fever reduction, and one study reported reductions in headache, muscle ache, nasal congestion, and mucus discharge and cough symptoms. One study reported a reduction in symptoms within 48 h in the elderberry group compared to an increase in severity of symptoms over the same time period in the control group. Three studies reported an almost 50% reduction in duration of illness in the elderberry versus control groups. Two studies reported the use of rescue medication including analgesics, nasal spray, cold tablets, and antibiotics. Results were inconsistent. No serious adverse events were reported. Adverse events included fatigue, cold-like symptoms, itchy throat, and kidney pain. Nausea and vomiting were reported in the study using the poly-herbal blend.

The authors conclude that mono-herbal preparation of elderberry, when taken at the onset of symptoms and for up to two weeks, may provide relief from symptoms of the common cold and influenza. Elderberry extract may be effective in reducing duration and severity of fever headache, nasal congestion, and nasal mucous discharge associated with acute viral respiratory infections. Additional studies are needed to further evaluate the efficacy and safety of elderberry extracts.

Harnett J, Oakes K, Caré J, et al. The effects of *Sambucus nigra* berry on acute respiratory viral infections: A rapid review of clinical studies. *Adv Integr Med*. December 2020;7(4):240-246. doi: 10.1016/j.aimed.2020.08.001.