Selected Herbs for Prevention and Treatment of Upper Respiratory Track Herbs

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**Berberine**

Berberine is a plant-alkaloid with a long history of medicinal use in Chinese and Ayurvedic medicine. Berberine has shown anti-microbial activity against bacteria, viruses, fungi, protozoans, and worms.[[1]](#footnote-1) Because of it’s broad-spectrum antibiotic activity, it is widely used for preventing many kinds of infections.[[2]](#footnote-2) There is some clinical evidence to support berberine's use in the treatment of eye infections[[3]](#footnote-3) and bacterial diarrhea. [[4]](#footnote-4),[[5]](#footnote-5)

In one recent study (Cecil *et al*., 2011), berberine and goldenseal extract both strongly inhibited influenza A growth and maturation, and in another study, inhibited influenza viral growth both *in vitro* and *in vitro* through a variety of immune mechanisms (Wu *et al*., 2011).

**Andrographis**

One of the most credible antiviral herbs based on several human clinical trials against upper respiratory tract infections, for reducing the severity of signs/symptoms, especially sore throat,[[6]](#footnote-6) as well as expectoration, nasal discharge, headache, fever, sore throat, earache, malaise/fatigue and sleep disturbance (Saxena *et* al., 2010). Also effective for relieving symptoms of pharyngotonsillitis.[[7]](#footnote-7) A meta-analysis on andrographis for treating upper respiratory tract infections stated: “Collectively, the data suggest that A. paniculata is superior to placebo in alleviating the subjective symptoms of uncomplicated upper respiratory tract infection. There is also preliminary evidence of a preventative effect. Adverse events reported following administration of A. paniculata were generally mild and infrequent”.[[8]](#footnote-8) Another meta-analysis in 2004 concluded that “Current evidence suggests that *A. paniculata* extract alone or in combination with *A. senticosus* extract may be more effective than placebo and may be an appropriate alternative treatment of uncomplicated acute upper respiratory tract infection.”[[9]](#footnote-9)

**Elderberry**

In laboratory and animal research, *S. nigra* had antiviral effects, , inhibiting replication of several strains of influenza A and B.[[10]](#footnote-10) The mechanism is believed to be rendering viruses nonfunctional by staining and coating them. According to a review, *in vitro* and animal research reported that elderberry fruit (*Sambuci*fructus) had an effect on influenza, other viral infections, and increased antibody titers.[[11]](#footnote-11) Human studies reported the efficacy of elderberry extract for slowing viral replication and earlier relief of flu-like symptoms.[[12]](#footnote-12)

A number of recent studies have emphasized the effectiveness of elderberry water-based extracts and juice *in vitro* in antioxidant assays such as free-radical scavenging activity and inhibition of β-carotene/linoleic acid co-oxidation (Duymus *et al*., 2014).

**Echinacea**

Echinacea is one of the most widely-utilized traditional herbal medicines for easing and shortening symptoms of common respiratory tract infections, and is best known for its effect on mobilizing/stimulating the immune system. Ritchie *et al*. (2011) performed an ex vivo study, showing that a stabilized juice preparation of *E. purpurea* demonstrated adapted immune-modulation, particularly on acute-phase imunomodulatory proteins such as IL1-β, IL-6, IL-12 and TNF-α.

Oral preparations have been used traditionally for the prevention and treatment of upper respiratory tract infections or the common cold. According to a review, the combination of components that may be isolated from echinacea through extraction may have antiviral, antimicrobial, and immune-modulatory activity when administered at noncytotoxic concentrations.[[13]](#footnote-13)

Numerous clinical trials have been performed on various extracts of several Echinacea species for respiratory tract infections, and these studies have had variable outcomes, with some reporting no benefits (Turner *et al*., 2005), but others reporting benefits like shortened duration and severity of symptoms (Linde *et al*., 2006). Early use of echinacea preparations at the first signs of infections, and increased doses appear to be more effective (Schoop *et al*., 2006), and safety has been supported in children (Saunders *et al*., 2007).

Echinacea preparations don’t appear to interact significantly with conventional drugs (Modarai *et al*., 2011).

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