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Supplements for Colds and Flu in Adults

Avoiding colds and flu in the first place is much better than the best cold and flu treatments available. Effective prevention methods include annual flu vaccination, avoiding people who are sick, washing hands frequently, and avoiding touching the eyes and nose. Nasal irrigation with saline may help reduce symptoms of colds. There are many supplements promoted for the prevention and treatment of colds and flu. The majority of these products lack good evidence for efficacy; however, many are safe for most patients if they'd like to try them. This chart outlines several of the more common supplements, with information on their efficacy and safety. For detailed information on these and other supplements, visit our *Natural Medicines* website and see our CE, *Natural Medicines for Colds and Flu*. For pediatric information, see our *Natural Medicines* article, *What Supplements Can Kids Take for Cough & Cold?*

Supplement	Efficacy	Safety
Echinacea	• Data are conflicting for echinacea in the prevention and treatment of colds.¹ • Individual trials don't show an association of echinacea for cold prevention. An exploratory meta-analysis of a variety of echinacea products suggests an association with reduced cold incidence [Evidence level B-2].² • May modestly reduce cold symptom severity and duration by a few days [Evidence level B-1].³ • There is a wide variety of echinacea products available. Most trials use the above-ground parts of the <i>Echinacea purpurea</i> species.¹	• Allergic reactions to echinacea are infrequent but can be severe.⁴ • Reactions may be more common and more severe in patients with a history of atopy or eczema.⁴ • Patients who are allergic to plants of the Asteraceae family (e.g., ragweed, mums, marigolds, etc) might have cross-allergenicity with echinacea.^{1,5} • Echinacea may stimulate the immune system. • There is a theoretical risk for exacerbation of autoimmune disorders such as multiple sclerosis, rheumatoid arthritis, etc. Advise caution or avoidance of echinacea in these patients.^{1,5} • There is a theoretical interaction with immunosuppressants. Use caution with this combination.^{1,5}
Vitamin C	• Vitamin C, in doses up to 3 g/day, doesn't seem to prevent colds [Evidence level B-2].⁶ • Randomized controlled trials do not show a consistent effect of vitamin C on the duration or severity of cold symptoms [Evidence level B-2].⁶ • Doses between 1 g to 3 g/day of vitamin C are the more common doses used in studies to treat colds.¹	• Adverse effects are dose-related and can include nausea, vomiting, heartburn, abdominal cramps, fatigue, insomnia, diarrhea, etc.¹ • Daily doses over 2 g increase the risk of significant diarrhea and GI upset.¹ • Renal stones can occur with large doses of vitamin C.⁴

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Supplement	Efficacy	Safety
Elderberry lozenges, extract syrup (<i>Sambucol</i> , etc)	- Elderberry might help to reduce symptoms of the flu.¹ - A study (n = 60) of elderberry fruit extract syrup (dose of 22 g/day) reported a reduction in flu symptom duration by about half and reduced symptom severity when started within 48 hours of symptoms, compared to placebo [Evidence level B-1].⁷ - Most commercial products don't contain the amount of elderberry used in studies (i.e., about 22 g per day).	- Elderberry fruit extract appears to be safe for short-term use.¹ - Elderberry leaves, stems, and unripe or uncooked fruit contains a chemical that produces cyanide and can cause nausea, vomiting, and diarrhea.¹ Ingestion of large quantities may be toxic.¹ - Elderberry may stimulate the immune system. - There is a theoretical risk for exacerbation of autoimmune disorders such as multiple sclerosis, rheumatoid arthritis, etc. Advise caution or avoidance of echinacea in these patients.¹ - There is a theoretical interaction with immunosuppressants. Use caution with this combination.¹
Honey	Honey may be effective to relieve cough due to colds.¹ There is some evidence that 2.5 mL to 10 mL (1/2 to two teaspoonful) of honey may reduce cough in kids and may improve sleep [Evidence level B-2].⁸	- Avoid honey in infants less than one year old due to the risk of botulism. - Avoid Rhododendron honey products. These can contain grayanotoxin and can lead to cardiovascular adverse effects (e.g., hypotension, arrhythmias, chest pain).¹
Zinc acetate or gluconate lozenges (<i>Cold-Eeze</i> , etc) Note: <i>Cold-Eeze</i> is labeled as homeopathic; however, it contains 13.3 mg zinc/lozenge.	- There is no reliable evidence that zinc prevents colds [Evidence level B-2].⁹ - There is conflicting evidence on the efficacy of zinc for the treatment of colds.¹ A meta-analysis concluded zinc (given within 24 hours of cold symptom onset) may reduce the duration of symptoms by about a day; however, studies included were very heterogeneous [Evidence level B-2].⁹ - The most commonly studied formulation is zinc lozenges given every two hours started within 24 to 48 hours of symptom onset.^{1,9}	- Adverse effects can include bad taste, dry mouth, and nausea.⁹ - Avoid zinc nasal products due to potential for permanent loss of smell.^{1,10} - Excessive zinc intake can lead to copper deficiency which can cause sideroblastic anemia (with anemia, leukopenia, and neutropenia).^{1,4} - Products vary in their zinc content. Check labeling for dose recommendations and maximums. For example, the recommended max dose of 13.3 mg zinc lozenges is six lozenges per day.⁴ - Check for drug interactions with zinc. Zinc is a polyvalent cation.⁴ For example: - Quinolone and tetracycline antibiotics should be taken two hours before or six hours after zinc, due to the potential for decreased absorption of the antibiotic.^{4,10} - Zinc can chelate with baloxavir marboxil (<i>Xofluza</i>) which reduces its absorption.⁴ - Zinc and iron compete for absorption. Separate doses by two hours.⁴

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Supplement	Efficacy	Safety
Ginseng (American ginseng [e.g., <i>Cold FX</i> , etc], Panax ginseng, etc)	• Different types of ginseng (e.g., American, Panax/Asian, etc) are available in various formulations. • Some small studies offer “promising” data for Panax ginseng for the prevention of colds and flu.¹ • Limited evidence with CVT-E002 (<i>Cold FX</i>), an American ginseng extract, shows trends for the prevention and reduction in the severity and duration of cold symptoms [Evidence level B-1].¹¹	• Ginseng is generally considered safe; however, many products have been found to have contaminants or other ingredients which may cause adverse effects.⁴ • American ginseng can decrease the effectiveness of warfarin. Avoid this combination.¹ • Ginseng might increase the blood glucose lowering effects of diabetes medications. Use caution with this combination.¹
Garlic	• There is insufficient evidence for the use of garlic for the prevention or treatment of colds [Evidence level B-2].¹²	• Allicin, a constituent of garlic found in some garlic supplements, is a CYP3A4 inducer and should be avoided in patients taking warfarin, losartan, and other CYP3A4 substrates.¹ • Garlic can cause bad breath and body odor.¹
Combination products (<i>Airborne</i> , <i>Emergen-C</i> , etc)	• Many products combine different supplements (e.g., echinacea, vitamins, zinc, etc). • These combination products have very little evidence for efficacy.	• Check ingredients and their doses for their individual adverse effects and warnings.

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

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Levels of Evidence

In accordance with our goal of providing Evidence-Based information, we are citing the **LEVEL OF EVIDENCE** for the clinical recommendations we publish.

Level	Definition	Study Quality
A	Good-quality patient-oriented evidence.*	1. High-quality RCT 2. SR/Meta-analysis of RCTs with consistent findings 3. All-or-none study
B	Inconsistent or limited-quality patient-oriented evidence.*	1. Lower-quality RCT 2. SR/Meta-analysis with low-quality clinical trials or of studies with inconsistent findings 3. Cohort study 4. Case control study
C	Consensus; usual practice; expert opinion; disease-oriented evidence (e.g., physiologic or surrogate endpoints); case series for studies of diagnosis, treatment, prevention, or screening.	

***Outcomes that matter to patients** (e.g., morbidity, mortality, symptom improvement, quality of life).

RCT = randomized controlled trial; **SR** = systematic review

[Adapted from Ebell MH, Siwek J, Weiss BD, et al. Strength of Recommendation Taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. *Am Fam Physician* 2004;69:548-56. <http://www.aafp.org/afp/2004/0201/p548.pdf>.]

Project Leader in preparation of this clinical resource (360102): Annette Murray, BScPharm

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3120 West March Lane, Stockton, CA 95219 ~ TEL (209) 472-2240 ~ FAX (209) 472-2249

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