

# Complementary, Holistic, and Integrative Medicine: The Common Cold

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## Introduction

Caused by a viral infection of the upper respiratory tract, the “common cold” has no known cure and is responsible for considerable illness, including symptoms such as runny nose, nasal congestion, and cough; visits to the doctor; absenteeism from school and work; and economic loss. (1) Therefore, alternative treatments, including the use of complementary and alternative medicine (CAM), are of substantial interest to patients seeking symptomatic relief.

This review examines popular CAM therapies used to alleviate symptoms of the common cold in children. It is limited to the following modalities: natural health products, hydrotherapy, and mind-body interventions.

## Herbals

Natural health products (which include herbals, vitamins, minerals, probiotics, homeopathic remedies, and traditional medicines) are used widely for the prevention, treatment, and relief of various conditions, as well as for the promotion of personal well-being.

## Echinacea

Commercially available echinacea (*Echinacea purpurea*) preparations vary by type (species), plant part (root, herb, or both), and method of manufacture. (2)

Linde and associates (3) reviewed 19 clinical trials examining the effectiveness of different echinacea preparations for preventing (n=3) and treating (n=16) the common cold in adults and children. Echinacea had no effect in preventing the common cold, but in 9 of 16 treatment trials, it had a significant effect compared with the control in reducing cold symptoms in adults, although evidence regarding efficacy in children was unclear. (3)

Two studies have investigated the efficacy and safety of echinacea in the prevention and treatment of colds in pediatric patients. The first was an Israeli randomized controlled trial (RCT) in which 430 children (ages 1 to 5 years) received an herbal preparation containing 50 mg/mL of echinacea, 50 mg/mL of propolis (a natural resin created by bees), and 10 mg/mL of vitamin C or placebo over a 12-week period during the winter. (4) Children in the intervention group had significant mean reductions in the number of illness episodes (55% reduction) and number of days having fever (62% reduction,  $P<0.001$ ). Nine (5.6%) children in the intervention group and seven (4.2%) in the placebo group ( $P=0.54$ ) reported two types of adverse events (AEs): gastrointestinal (GI) and palatability symptoms, both of which were mild and transient. Although the intervention appeared to have some preventive effect on the incidence of the common cold in children, it is unclear which components of the herbal preparation were responsible for the benefits observed. Furthermore, this study had a high drop-out rate, with 99 children (23%) dropping out, including 55 from the intervention group and 44 from the placebo group. The reasons for dropping out included unpleasant taste, lack of confidence in the treatment, and noncompliance. (4)

The second study, an American RCT in which 407 children (ages 2 to 11 years) received either two doses per day of echinacea in syrup or placebo for 10 days upon developing symptoms of a cold found no differences in duration ( $P=0.89$ ) or severity ( $P=0.69$ ) of

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NOTE: The agents discussed in this series are designated as dietary supplements rather than drugs. Although dietary supplements are regulated by the United States Food and Drug Administration (FDA), their manufacturers may make claims with little evidence and need not prove safety prior to marketing. The burden is on the FDA to monitor safety after the product is on the market. Readers are referred to the 1994 Dietary Supplement Health and Education Act ([www.cfsan.fda.gov/~dms/dietsupp.html](http://www.cfsan.fda.gov/~dms/dietsupp.html)).

upper respiratory tract infections (URTIs) between the two groups of children. (5) More rashes, which constituted AEs, were observed in the echinacea group compared with the placebo (7.1% versus 2.7%,  $P=0.008$ ) group. Although echinacea was not shown to be effective in treating URTI symptoms in this study, additional analysis revealed that its use was associated with a 28% decreased risk of subsequent URTI ( $P=0.01$ , 95% confidence interval [CI]=8% to 44%). Because this finding was not the primary endpoint of interest, it should be viewed with caution until additional evidence from other studies is available.

The use of echinacea generally is considered to be safe, although mild AEs, including GI upsets, increased urination, and skin rashes, have been reported. (2) Atopic individuals appear to have an increased risk of allergic and anaphylactic reactions. (6) Thus, children who have chronic immune-mediated disease and those who have allergies to the ragweed family are cautioned against taking echinacea. (7)

### *Andrographis paniculata*

*A paniculata* (king of bitters) is a popular herb often used to treat fever, sore throat, and respiratory and GI infections. Most efficacy studies have involved adults only; the two described in this article involved children.

A 10-day Russian RCT compared the efficacy of standard treatment (involving warm drinks, throat gargle, and chamomile tea) supplemented with *A paniculata* tablets, standard treatment supplemented with drops containing *E purpurea* (*L.*) extract, and standard treatment alone in alleviating common cold symptoms in 133 children (ages 4 to 11 years). (8) By day 3, URTI symptoms improved in all groups, although children who received *A paniculata* had fewer URTI symptoms, decreased use of standard treatment, and accelerated recovery compared with children who received the drops. Because *A paniculata* was not administered alone but with different standard treatments, it is unclear whether this herb alone was responsible for the reported benefits.

The second RCT of 107 Chilean students (mean age=18.4 years) given 200 mg of *Andrographis* or placebo daily for 3 months found that students who took *Andrographis* had a 70% reduction in the number of URTIs compared with the placebo group, which had a 38% reduction. (9)

*Andrographis* generally is regarded as safe. No AEs were reported in the two pediatric trials described. However, *Andrographis* has been reported in adult studies to cause AEs such as GI distress, emesis, and hives. (10)

### Elderberry

Due to its antiviral and potential immunostimulatory properties, elderberry (*Sambucus nigra L.*) has been used to treat influenza. (11) Positive findings were observed in an RCT of 40 patients (ages 5 to 50 years) whose duration of influenza symptoms was less than 24 hours. (12) Children received 2 Tbsp and adults received 4 Tbsp of either elderberry extract or placebo daily for 3 days. Symptoms (cough, nasal discharge, fever, and myalgia) improved significantly within 2 days in 93.3% of patients who took elderberry, and the same degree of improvement was achieved by 91.7% of patients receiving placebo at 6 days ( $P<0.001$ ). No AEs were observed. AEs that have been associated with elderberry include nausea, vomiting, weakness, dizziness, numbness, and stupor. (13) More research is needed to confirm the effectiveness of elderberry and its safety in children.

### Chinese Herbal Medicine (CHM)

The effectiveness of CHM for the treatment of URTIs in adults was the subject of a review that investigated herbal medicines in the form of herbal tea, patent medicine, and parental herbal preparations and included 26 studies in Chinese and one in English. (14) Fifteen studies concluded that CHM was better than conventional pharmaceuticals or placebo in treating URTIs, but the poor quality (in terms of study design and data analysis) of most of the studies ( $n=25$ ) prevents conclusions about efficacy or safety.

In a more recent systematic review, 6 of 14 trials concluded that CHM was more effective than the control in enhancing recovery from a common cold. (15) However, biases caused by inadequacies in the trial designs and methodologies necessitate that better-quality studies be conducted before conclusive recommendations are made.

### Vitamins and Minerals

#### Vitamin C

Although highly studied, the role of vitamin C (ascorbic acid) in treating URTIs remains controversial. A systematic review of 30 clinical trials in which at least 200 mg/day of vitamin C was administered for the prevention (studies included adult populations only) and treatment (studies included adults and children) of the common cold found that vitamin C supplementation was not helpful in preventing common colds. (16) However, taking vitamin C before the onset of cold symptoms reduced the duration of cold symptoms by 8% (95% CI=3% to 13%) in adults and 13.5% (95% CI=5% to 21%) in children.

Because it is shown to reduce the duration of cold symptoms when taken before the onset of a common cold, vitamin C may be a useful remedy for children who are at high risk of colds, such as those who attend child care centers during winter periods. Although generally safe, vitamin C in high doses (3 to 6 g daily) may cause upset stomach and diarrhea.

## Zinc

A deficiency of zinc is suspected to affect susceptibility to colds. (17)

A Turkish RCT of 200 healthy children who took 15 mg of zinc sulfate syrup once daily for 7 months or placebo found the zinc group to have a significantly lower mean number of colds (1.2 versus 1.7 colds/child;  $P=0.003$ ), a shorter mean duration of cold symptoms ( $P<0.0001$ ), and fewer cold-related school absences (0.9 days/child versus 1.3 days;  $P=0.04$ ) than the placebo group. (18) AEs, which included bad taste, headache, vomiting, nausea, mouth irritation, and dry mouth, were mild, and their frequency was similar in both groups (placebo=33; intervention=35).

A 6-month RCT, in which 609 children (ages 6 to 35 months) from a low-socioeconomic background in India were given zinc gluconate (10 mg) or placebo daily, found a reduced incidence of common cold in the zinc group compared with the placebo group ( $P=0.02$ ). (19) The cold duration also was reduced in the zinc group, but this finding was not statistically significant ( $P=0.054$ ).

A review comparing the frequency and duration of colds in children living at a mental illness/behavioral facility before (control) and after zinc lozenges were being used found a reduced mean duration of cold symptoms from 9 days before treatment was instituted to 7.5 days after use of zinc ( $P<0.001$ ). (1) A “burning tongue” sensation that resolved without sequelae after the use of benzocaine solution was the only reported AE. In a prospective study of 178 children from the same study population, the mean cold duration for those using zinc lozenges was significantly shorter compared with controls ( $6.9\pm 3.1$  days versus  $9.0\pm 3.5$  days,  $P<0.001$ ), and the average number of colds was reduced significantly ( $1.28\pm 1.03$  days versus  $1.7\pm 1.91$  days,  $P<0.05$ ). (20) No AEs were observed.

Other studies have not found zinc supplementation to be beneficial. A recent RCT showed that 30 mg of zinc sulfate syrup taken daily (versus placebo) had no effect on the duration of cold symptoms. (21) AEs, including bad taste, mouth irritation, mouth dryness, nausea, vomiting, diarrhea, abdominal pain, constipation, and drowsiness, were reported by 25% of children in the zinc group and

27% of children in the placebo group, with no significant differences between the two groups.

No beneficial effects were observed in an RCT of 249 children (ages 6 to 16 years) who received 10-mg zinc lozenges or placebo lozenges five times daily (grades 1 to 6) or six times daily (grades 7 to 12) for 21 days. (22) No difference in cold duration was observed between children receiving zinc or placebo. Mild AEs were common in both the zinc and placebo groups and included bad taste (60% and 38%, respectively,  $P=0.001$ ); mouth, tongue, or throat discomfort (37% versus 24%,  $P=0.03$ ); and diarrhea (11% versus 4%,  $P=0.05$ ).

The evidence in support of zinc’s effectiveness in preventing and reducing the duration of common cold symptoms in children is inconclusive. Several mild AEs, including nausea, bad taste, GI disturbance, sore throat, mouth irritation, and diarrhea, have been associated with zinc ingestion. Moreover, the cumulative long-term effects of taking zinc are not known. Potential concerns exist, including the creation of copper deficiency. More research is required before definitive conclusions on efficacy and safety can be made.

## Probiotics

Probiotics are dietary supplements containing potentially beneficial bacteria or yeast. Lactic acid bacteria are the most common microbes used.

A 7-month Finnish RCT of 571 children in child care (ages 1 to 6 years) randomized to receive either probiotic milk ( $5$  to  $10\times 10^5$  colony-forming units/mL *Lactobacillus rhamnosus* GG) or a placebo found no between-group difference in symptoms of respiratory infections. (23) However, children in the probiotic group had fewer days of absence from child care (relative reduction of 15%) due to illness, fewer doctor-diagnosed respiratory infections (relative reduction of 17%), and less antibiotic use (relative reduction of 19%). In Finland, *Lactobacillus* GG milk is used widely by the general population and was given to 15% of the children in the control group. This usage may have affected the study by making actual differences observed between the probiotic and the control group harder to detect.

In an Israeli RCT, healthy nonbreastfeeding infants (ages 4 to 10 months) were fed either formula supplemented with *Bifidobacterium lactis* (BB-12), with *Lactobacillus reuteri*, or with no probiotics for 12 weeks. The consumption of *B lactis* and *L reuteri* had no effect on the frequency or duration of respiratory illness. (24)

Probiotic use by healthy individuals is generally safe, although use by immunocompromised and severely ill children has been associated with pneumonia,

bacteremia/septicemia, and meningitis. (25) Probiotic use should be discussed with a child's physician.

## Honey

Honey, purported to promote healing, reduce inflammation, stimulate tissue generation, and have antimicrobial effects, has been used in the treatment of respiratory, GI, and skin conditions. (26)

An RCT of 105 children (ages 2 to 18 years) compared the efficacy of a single dose of buckwheat honey taken 30 minutes before bedtime or honey-flavored dextromethorphan with no treatment on cold symptoms (nocturnal cough and sleep difficulty associated with URIs). (26) According to parental ratings, buckwheat honey was significantly better than no treatment for cough frequency, while dextromethorphan was not better than no treatment. Mild AEs included hyperactivity, nervousness, and insomnia and were significantly more common in children who took honey.

Although honey generally is considered to be safe, unpasteurized honey is known to contain botulinum spores that can develop into botulinum toxin and cause infantile botulism. Children younger than 1 year of age are particularly at risk. Grayanotoxin-mediated syndrome, characterized by salivation, hypotension, emesis, and bradycardia, is a rare AE associated with honey consumption. (26)

## Homeopathy

Homeopathy is based on the concept that "like cures like," which means that small, highly diluted quantities of medicinal substances are given to cure symptoms, when the same substances given at higher or more concentrated doses actually would cause those symptoms. (27)

Two RCTs investigated the effectiveness of homeopathic remedies in preventing URIs in children younger than 10 years of age. In the first study, children were randomized to receive over a 12-week period either one of three homeopathic remedies chosen by their parents (*Calcarea carb*, *Pulsatilla*, or *Sulfur*) or placebo pills. (28) No significant differences in cold symptoms were reported in parent-completed daily diaries. In the second study, children received individualized homeopathic care from one of five homeopaths (n=68) or had an appointment with a homeopath at the end of the 12-week trial (n=74) (control group). (29) A significant difference ( $P=0.026$ ) between the median total symptom scores of the two groups was recorded (intervention group, 24.0 [95% CI=11.4 to 35.6] and control group, 44.0 [95% CI=32.1 to 60.8]). Consequently, individu-

alized homeopathy was concluded to be effective in treating URI. Although a positive effect was observed, it is not clear if it was due to the homeopathic remedy itself or to the homeopathic consultation and prescription or if these factors may have interacted to influence the outcome.

Although homeopathic remedies are dilute, homeopathic practitioners recognize a phenomenon known as "aggravation," which occurs in 10% to 20% of patients and involves a worsening of symptoms for several hours after taking homeopathic medicine. (30) Additional research is needed to determine if homeopathy is beneficial and safe for children.

## Hydrotherapy

Hydrotherapy is defined as systematic stimulation of the body surface with warm and cold water. (31) A German RCT investigated the effectiveness of 1 year of hydrotherapy on common colds in children (ages 3 to 7 years) who had experienced six or more common cold episodes in the preceding 12 months. (31) Children in the treatment group (n=65) received a daily inhalation of saline (2 mL) and an individualized hydrotherapy program designed by a hydrotherapist; the control group (n=81) received daily inhalation of saline (2 mL) only. Hydrotherapy had no beneficial effect on common colds in children, either in reducing incidence or duration. Three AEs, involving children feeling cold for prolonged periods after hydrotherapy, were described.

## Heated Humidified Air

Inhaling water vapor generated by heated humidifiers has been used with the belief that it may aid the drainage of congested mucus and destroy the cold virus. (32) A review of six trials assessing the efficacy of inhaling heated water vapor to treat the common cold found insufficient evidence to determine effectiveness based on comparing three outcomes: cold symptoms, viral shedding, and nasal resistance. (32) Minor AEs, including discomfort or irritation of the nose and lightheadedness, were reported in some studies. More studies to evaluate the efficacy of this therapy are required.

## Mind Body Therapies: Stress Management, Guided Imagery

An Australian study investigated the effectiveness of mind-body therapies in combating symptoms of colds and flu by randomizing 45 children (ages 8 to 12 years) into three groups: a stress management group, a guided imagery group, and a waitlist (or control group) that received treatment at the end of the 13-week study. (33)



Children in the stress management group received therapy aimed at dealing with general sources of life problems to reduce anxiety and promote positive self-feelings. Children in the guided imagery group received relaxation therapy, imagining being in control and on an enjoyable journey and picturing a happy place. They also imagined their bodies and immune systems clearing away germs and listened to a relaxation tape. There were no differences in the frequency of URTI episodes among the three groups, but the duration of URTIs was shorter in the two intervention groups compared with the control group ( $P < 0.001$ ), and episodes were shorter in the stress management group than in the guided imagery group ( $P < 0.05$ ). These findings suggest that mind-body therapies may have some role in reducing the duration of URTI symptoms in children.

## Conclusion

The identification of safe, effective, and affordable treatments to relieve common cold symptoms could reduce illness, economic loss, and unnecessary use of medications such as antibiotics and their associated AEs. The efficacy of honey, elderberry, and psychological interventions is promising. The results from studies involving echinacea, *Andrographis*, probiotics, vitamin C, zinc, individualized homeopathic remedies, and heated humidified air are inconclusive, and RCT evaluation of hydrotherapy showed no effect. Trials involving CHM need to be better designed before additional effectiveness can be evaluated. Additional research into commonly used pediatric CAM therapies to alleviate symptoms of the common cold is needed before definitive recommendations are made.

## References

- McElroy BH, Miller SP. Effectiveness of zinc gluconate glycine lozenges (Cold-Eeze) against the common cold in school-aged subjects: a retrospective chart review. *Am J Ther*. 2002;9:472–475
- Charrois TL, Hrudey J, Vohra S. *Echinacea*. *Pediatr Rev*. 2006;27:385–387
- Linde K, Barrett B, Wolkart K, Bauer R, Melchart D. *Echinacea* for preventing and treating the common cold. *Cochrane Database Syst Rev*. 2007;3:CD000530
- Cohen HA, Varsano I, Kahan E, Sarrell EM, Uziel Y. Effectiveness of an herbal preparation containing echinacea, propolis, and vitamin C in preventing respiratory tract infections in children: a randomized, double-blind, placebo-controlled, multicenter study. *Arch Pediatr Adolesc Med*. 2004;158:217–221
- Weber W, Taylor JA, Vander Stoep A, Weiss NS, Standish LJ, Calabrese C. *Echinacea purpurea* for prevention of upper respiratory tract infections in children. *J Alt Complement Med*. 2005;11:1021–1026
- Mullins RJ, Heddle R. Adverse reactions associated with echinacea: the Australian experience. *Ann Allergy Asthma Immunol*. 2002;88:42–51
- Huntley AL, Thompson Coon J, Ernst E. The safety of herbal medicinal products derived from *Echinacea* species: a systematic review. *Drug Saf*. 2005;28:387–400
- Spasov AA, Ostrovskij OV, Chernikov MV, Wikman G. Comparative controlled study of *Andrographis paniculata* fixed combination, Kan Jang and an echinacea preparation as adjuvant, in the treatment of uncomplicated respiratory disease in children. *Phytother Res*. 2004;18:47–53
- Caceres DD, Hancke JL, Burgos R, et al. Prevention of common colds with *Andrographis paniculata* dried extract: a pilot double blind trial. *Phytomed*. 1997;4:101–104
- Coon JT, Ernst E. *Andrographis paniculata* in the treatment of upper respiratory tract infections: a systematic review of safety and efficacy. *Planta Med*. 2004;70:293–298
- Barak V, Birkenfeld S, Halperin T, Kalickman I. The effect of herbal remedies on the production of human inflammatory and anti-inflammatory cytokines. *Isr Med Assoc J*. 2002;4:919–922
- Zakay-Rones Z, Thom E, Wollan T, Wadstein J. Randomized study of the efficacy and safety of oral elderberry extract in the treatment of influenza A and B virus infections. *J Int Med Res*. 2004;32:132–140
- Drugs Information Online. *Natural Products: Elderberry*. Available at: <http://www.drugs.com/npc/elderberry.html>. Accessed July, 2008
- Liu C, Douglas RM. Chinese herbal medicines in the treatment of acute respiratory infections: a review of randomised and controlled clinical trials. *Med J Aust*. 1998;169:579–582
- Wu T, Zhang J, Qiu Y, Xie L, Liu GJ. Chinese medicinal herbs for the common cold. *Cochrane Database Syst Rev*. 2007;2:CD004782
- Douglas RM, Hemila H, Chalker E, Treacy B. Vitamin C for preventing and treating the common cold. *Cochrane Database Syst Rev*. 2007;2:CD000980
- van Wouwe JP, van Gelderen HH, Bos JH. Subacute zinc deficiency in children with recurrent upper respiratory tract infection. *Eur J Pediatr*. 1987;146:293–295
- Kurugol Z, Akilli M, Bayram N, Koturoglu G. The prophylactic and therapeutic effectiveness of zinc sulphate on common cold in children. *Acta Paediatr*. 2006;95:1175–1181
- Sazawal S, Black RE, Jalla S, Mazumdar S, Sinha A, Bhan MK. Zinc supplementation reduces the incidence of acute lower respiratory infections in infants and preschool children: a double-blind, controlled trial. *Pediatrics*. 1998;102:1–5
- McElroy BH, Miller SP. An open-label, single-center, phase IV clinical study of the effectiveness of zinc gluconate glycine lozenges (Cold-Eeze) in reducing the duration and symptoms of the common cold in school-aged subjects. *Am J Ther*. 2003;10:324–329
- Kurugol Z, Bayram N, Atik T. Effect of zinc sulfate on common cold in children: randomized, double blind study. *Pediatr Int*. 2007;49:842–847
- Macknin ML, Piedmonte M, Calendine C, Janosky J, Wald E. Zinc gluconate lozenges for treating the common cold in children: a randomized controlled trial. *JAMA*. 1998;279:1962–1967
- Hatakka K, Savilahti E, Ponka A, et al. Effect of long term consumption of probiotic milk on infections in children attending day care centres: double blind, randomised trial. *BMJ*. 2001;322:1327
- Weizman Z, Asli G, Alsheikh A. Effect of a probiotic infant

formula on infections in child care centers: comparison of two probiotic agents. *Pediatrics*. 2005;115:5–9

25. Rosen LD, Bukutu C, Le C, Shamseer L, Vohra S. Complementary, holistic, and integrative medicine: colic. *Pediatr Rev*. 2007;28:381–385

26. Paul IM, Beiler J, McMonagle A, Shaffer ML, Duda L, Berlin CM. Effect of honey, dextromethorphan, and no treatment on nocturnal cough and sleep quality for coughing children and their parents. *Arch Pediatr Adolesc Med*. 2007;161:1140–1146

27. Bukutu C, Deol J, Vohra S. Complementary, holistic, and integrative medicine: therapies for acute otitis media. *Pediatr Rev*. 2008;29:193–199

28. Steinsbekk A, Bentzen N, Fonnebo V, Lewith G. Self treatment with one of three self selected, ultramolecular homeopathic medicines for the prevention of upper respiratory tract infections in children. A double-blind randomized placebo controlled trial. *Br J Clin Pharmacol*. 2005;59:447–455

29. Steinsbekk A, Fonnebo V, Lewith G, Bentzen N. Homeopathic care for the prevention of upper respiratory tract infections in children: a pragmatic, randomised, controlled trial comparing individualised homeopathic care and waiting-list controls. *Complement Ther Med*. 2005;13:231–238

30. Dantes F, Rampes H. Do homeopathic medicines provoke adverse effects? A systematic review. *Br Homeopath J*. 2000;898: S35–S38

31. Gruber C, Riesberg A, Mansmann U, Knipschild P, Wahn U, Buhring M. The effect of hydrotherapy on the incidence of common cold episodes in children: a randomised clinical trial. *Eur J Pediatr*. 2003;162:168–176

32. Singh M. Heated, humidified air for the common cold. *Cochrane Database Syst Rev*. 2006;2: CD001728

33. Hewson-Bower B, Drummond PD. Psychological treatment for recurrent symptoms of colds and flu in children. *J Psychosom Res*. 2001;51:369–377

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