

get the facts



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The Flu, the Common Cold, and Complementary Health Practices

The flu (influenza) and the common cold are diseases of the respiratory tract, which includes the nose, throat, breathing passages, and lungs. The two diseases have some symptoms in common, and both are caused by viruses. However, they are different conditions, and the flu is more dangerous. Colds generally do not cause serious complications, such as pneumonia, or lead to hospitalization; the flu sometimes does.

Each year, an estimated 5 to 20 percent of Americans come down with the flu. The number of deaths from the flu and its complications varies from year to year, ranging from a low of 3,000 to a high of 49,000 deaths annually. Vaccination is the best protection against getting the flu.

The common cold is among the leading reasons for visiting a doctor and for missing school or work. More than 200 different viruses can cause colds.

To prevent or treat these illnesses, some people turn to complementary health practices. This fact sheet summarizes “what the science says” about some of these practices and suggests sources for additional information. If you are considering using a complementary health practice for the flu or a cold, this information can help you talk to your health care provider about it.

Key Points

- **Vaccination is the best protection against getting the flu.**
- **Complementary health practices for the flu.** There is no conclusive evidence that any complementary health practice is useful for the flu.
- **Complementary health practices for colds.** There is scientific evidence about several complementary health practices for colds. **Zinc** taken orally (by mouth) may reduce the length and severity of a cold. For most people, taking **vitamin C** supplements on a regular basis only slightly reduces the length

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and severity of colds and does not reduce the number of colds that they catch. Despite much research, **echinacea** has not been proven to prevent colds or relieve their symptoms. There is weak evidence that **probiotics** might help to prevent colds.

- Keep in mind that “natural” does not always mean “safe”; some complementary health products derived from natural sources may interact with medications (prescription or over-the-counter) or other natural products, some may have side effects on their own, and some may be unsafe for people with specific medical problems.
- Intranasal (taken through the nose) zinc products for colds can cause a long-lasting, possibly permanent, loss of the sense of smell.
- Tell all your health care providers about any complementary health practices you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care.

Complementary Health Practices and the Flu

About the Flu

The flu is a respiratory infection caused by a number of viruses. Symptoms come on suddenly and are worse than those of colds; they may include body or muscle aches, chills, and fever, as well as cold-like symptoms such as cough and sore throat. The flu can cause serious complications, especially in very young children, elderly people, pregnant women, and people with chronic medical problems, such as asthma, diabetes, or heart disease. Although everyday steps to prevent the spread of germs—such as frequent hand washing and avoiding contact with sick people—can help to prevent the spread of flu, annual flu vaccination is the single best method of prevention.

See the following resources for more information about the flu:

- Flu.gov, the Federal Government’s one-stop online resource on the flu
- The MedlinePlus page on the flu, from the National Library of Medicine (www.nlm.nih.gov/medlineplus/flu.html)
- *Understanding Flu*, from the National Institute of Allergy and Infectious Diseases (www.niaid.nih.gov/topics/Flu/understandingFlu/Pages/default.aspx).

Use of Complementary Health Practices for the Flu

According to the 2007 National Health Interview Survey (NHIS), which included a comprehensive survey of the use of complementary health practices by Americans, the flu was among the 15 most common reasons for using complementary health practices among children but was not among the most common reasons among adults.

Protecting Yourself and Your Family Against the Flu

Annual vaccination is the best protection against getting the flu. Starting in 2010, the Federal Government's Centers for Disease Control and Prevention has recommended annual flu vaccination for all people aged 6 months and older.

What the Science Says About Complementary Health Practices for the Flu

Although a few studies suggest a potential role for some complementary therapies, there is no strong scientific evidence that any complementary health practice is useful against the flu. Examples of complementary health practices that have been studied for the flu include:

- Chinese herbal medicines
- Dehydroepiandrosterone (DHEA)
- Echinacea
- Elderberry
- Green tea
- N-acetylcysteine (NAC)
- North American ginseng
- Oscillocoquinum
- Pomegranate extract
- Vitamin C
- Vitamin D.

Complementary Health Practices and the Common Cold

About the Common Cold

Cold symptoms usually begin 2 or 3 days after you are infected with a cold virus and last 2 to 14 days. Because you can get a cold by inhaling cold viruses or by touching your eyes or nose after you touch surfaces with cold viruses on them, washing your hands and staying away from people who have colds can help you stay healthy.

See the following resources for more information on colds:

- The MedlinePlus page on colds (www.nlm.nih.gov/medlineplus/commoncold.html)
- *Understanding the Common Cold*, from the National Institute of Allergy and Infectious Diseases (www.niaid.nih.gov/topics/commonCold/Pages/default.aspx).

Use of Complementary Health Practices for Colds

According to the 2007 NHIS, colds were the eighth most common reason for using complementary health practices among adults and the third most common among children.

What the Science Says About Complementary Health Practices for Colds

- **Zinc** has been used for colds in oral forms (such as lozenges, tablets, or syrup) and intranasal forms (such as swabs or gels). **Oral zinc** may help to treat colds, but it can cause side effects and interact with medicines. **Intranasal zinc** has been linked to a severe side effect and should not be used.
 - A 2011 systematic review of 15 clinical trials of oral zinc, involving more than 1,300 people, concluded that zinc helps to reduce the length and severity of the common cold in healthy people when taken within 24 hours after symptoms start. The review also concluded that zinc, taken at low doses for at least 5 months, reduced the number of colds in children. The review did not make a general recommendation for using zinc because different studies used different amounts and forms of zinc. The dose, formulation, and length of use that would be most helpful for colds while producing the fewest side effects have not yet been established.
 - Oral zinc can cause nausea and other gastrointestinal symptoms. Long-term use of zinc, especially in high doses, can cause copper deficiency and may increase the risk of urinary tract problems, reduce immune function, and cause other side effects. Zinc may interact with drugs, including antibiotics and penicillamine (a drug used to treat rheumatoid arthritis).
 - The intranasal use of zinc can cause anosmia (loss of the sense of smell), which may be long-lasting or permanent. In 2009, the U.S. Food and Drug Administration warned consumers to stop using several intranasal zinc products marketed as cold remedies because they had been linked to cases of anosmia.
- For most people, **vitamin C** does not prevent colds and only slightly reduces their length and severity. Vitamin C is generally considered safe except when taken in high doses.
 - A 2010 systematic review of results from 29 clinical trials involving more than 11,000 people found that taking vitamin C regularly (at least 0.2 grams per day) did not reduce the likelihood of getting a cold but was associated with modest reductions in the length and severity of cold symptoms. However, in five trials in people who were exposed to extreme physical stress (marathon runners, skiers, and soldiers training in subarctic conditions), taking vitamin C cut the number of colds in half. In studies in which people took vitamin C only when they had a cold, the vitamin did not consistently decrease the length or severity of their colds.
 - Vitamin C is generally considered safe; however, high doses can cause digestive disturbances such as diarrhea, nausea, and abdominal cramps.

About Scientific Evidence on Complementary Health Practices

Scientific evidence on complementary health practices includes results from laboratory research (e.g., animal studies) as well as clinical trials (studies in people). It provides information on whether a practice is helpful and safe. Scientific journals publish study results, as well as review articles that evaluate the evidence as it accumulates; fact sheets from the National Center for Complementary and Alternative Medicine (NCCAM)—like this one—base information about research findings primarily on the most rigorous review articles, known as systematic reviews and meta-analyses.

- **Echinacea** has not been proven to help prevent or treat colds. It usually does not cause side effects, but allergic reactions and rashes have been reported.
 - Echinacea products vary widely, containing different echinacea species, plant parts, and preparations. The many clinical trials of echinacea for colds have also varied widely, in terms of products studied, research methods, and study results.
 - Overall, the scientific evidence on echinacea for colds is inconclusive. There is limited evidence that some echinacea preparations might reduce the length or severity of colds in adults, but other preparations did not seem to be helpful. Four NCCAM-funded clinical trials indicated that echinacea did not reduce the length or severity of cold symptoms. In addition, echinacea has not been shown to reduce the number of colds that adults catch. The effects of echinacea in children are uncertain; only a small amount of research has been done in children, and the results of that research are inconsistent.
 - Few side effects have been reported in clinical trials of echinacea; however, some people may have allergic reactions. In one large clinical trial in children, those who took echinacea had an increased risk of developing rashes.

- The evidence that **probiotics** may help to prevent colds is weak, and little is known about their long-term safety.
 - Although a 2011 systematic review of 10 clinical trials involving more than 3,000 people indicated that probiotics might help to prevent upper respiratory tract infections, such as the common cold, the evidence is weak and the results have limitations.
 - As pointed out in a 2011 Agency for Healthcare Research and Quality assessment of the safety of probiotics, little is known about the effects of taking probiotics for long periods of time. It appears that most people can use probiotics without experiencing any side effects—or with only mild gastrointestinal side effects such as gas—but there have been some case reports of serious adverse effects, and the risk of serious side effects may be greater in people with underlying health conditions. Probiotics should not be used by people with serious underlying health problems except with close monitoring by a health care provider. Research on the safety of probiotics is ongoing.

Current evidence does not support recommending certain complementary health practices that have been investigated for colds, such as:

- Andrographis (*Andrographis paniculata*)
- Astragalus (*Astragalus membranaceus*)
- Chinese herbal medicines
- Elderberry (*Sambucus nigra*)
- Garlic (*Allium sativum*)
- Green tea
- Guided imagery
- Honey
- Hydrotherapy
- Nasal irrigation
- North American ginseng (*Panax quinquefolius*)
- Stress management
- Vitamin E.

NCCAM-Funded Research

NCCAM-supported researchers are conducting a variety of studies relevant to the flu and colds. Topics of recent research include:

- The safety and effectiveness of probiotics and synbiotics (a combination of probiotics and prebiotics) as possible complementary treatments for added immune protection of flu vaccine
- Meditation and exercise for preventing acute respiratory infection
- How psychosocial factors, such as the quantity and quality of social relationships, influence the likelihood of catching colds
- The effects of echinacea on the immune system.

If You Are Considering a Complementary Health Practice for the Flu or Colds

- Do not use any complementary health practice as a substitute for vaccination against the flu.
- Do not use unproven therapies as a replacement for conventional medical care or as a reason to postpone seeing a health care provider about any medical problem.
- If you take medications, have serious underlying health problems, or are pregnant or nursing a child, or if you are considering giving a child a dietary supplement or other complementary health product, it is especially important to consult your (or your child's) health care provider. To learn more, see the NCCAM fact sheet *Using Dietary Supplements Wisely* at nccam.nih.gov/health/supplements/wiseuse.htm.
- Tell all your health care providers about any complementary health practices you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care. For tips about talking with your health care providers about complementary and alternative medicine, see NCCAM's Time to Talk campaign at nccam.nih.gov/timetotalk/.

Selected References

- Barrett B, Brown R, Rakel D, et al. Echinacea for treating the common cold: a randomized trial. *Annals of Internal Medicine*. 2010;153(12):769-777.
- Bukutu C, Le C, Vohra S. Complementary, holistic, and integrative medicine: the common cold. *Pediatrics in Review*. 2008;29(12):e66-e71.
- Chen XY, Wu T, Liu GJ, et al. Chinese medicinal herbs for influenza. *Cochrane Database of Systematic Reviews*. 2007;(4):CD004559 [edited 2010]. Accessed at <http://www.thecochranelibrary.com> on December 12, 2011.
- Davidson TM, Smith WM. The Bradford Hill criteria and zinc-induced anosmia: a causality analysis. *Archives of Otolaryngology—Head & Neck Surgery*. 2010;136(7):673-676.
- Eccles R, Weber O, eds. *Common Cold*. Basel, Switzerland: Birkhäuser; 2009.
- Guo R, Pittler MH, Ernst E. Complementary medicine for treating or preventing influenza or influenza-like illness. *American Journal of Medicine*. 2007;120(11):923-929.

- Hao Q, Lu Z, Dong BR, et al. Probiotics for preventing acute upper respiratory tract infections. *Cochrane Database of Systematic Reviews*. 2011;(9):CD006895. Accessed at <http://www.thecochranelibrary.com> on January 3, 2012.
- Hemilä H, Chalker E, Douglas B. Vitamin C for preventing and treating the common cold. *Cochrane Database of Systematic Reviews*. 2007;(3):CD000980 [edited 2010]. Accessed at <http://www.thecochranelibrary.com> on December 12, 2011.
- Hempel S, Newberry S, Ruelaz A, et al. *Safety of Probiotics to Reduce Risk and Prevent or Treat Disease*. Evidence Report/Technology Assessment no. 200. Agency for Healthcare Research and Quality Web site. Accessed at <http://www.ahrq.gov/clinic/tp/probiotictp.htm> on January 27, 2012.
- Kassel JC, King D, Spurling GKP. Saline nasal irrigation for acute upper respiratory tract infections. *Cochrane Database of Systematic Reviews*. 2010;(3):CD006821. Accessed at <http://www.thecochranelibrary.com> on December 11, 2011.
- Linde K, Barrett B, Bauer R, et al. Echinacea for preventing and treating the common cold. *Cochrane Database of Systematic Reviews*. 2006;(1):CD000530 [edited 2009]. Accessed at <http://www.thecochranelibrary.com> on December 12, 2011.
- Lissiman E, Bhasale AL, Cohen M. Garlic for the common cold. *Cochrane Database of Systematic Reviews*. 2009;(3):CD006206. Accessed at <http://www.thecochranelibrary.com> on December 12, 2011.
- Office of Dietary Supplements. *Dietary Supplement Fact Sheet: Zinc*. Office of Dietary Supplements Web site. Accessed at <http://ods.od.nih.gov/factsheets/Zinc-HealthProfessional> on December 1, 2011.
- Public health advisory: loss of sense of smell with intranasal cold remedies containing zinc. June 16, 2009. U.S. Food and Drug Administration Web site. Accessed at www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/PublicHealthAdvisories/ucm166059.htm on January 7, 2012.
- Roxas M, Jurenka J. Colds and influenza: a review of diagnosis and conventional, botanical, and nutritional considerations. *Alternative Medicine Review*. 2007;12(1):25-48.
- Schoop R, Klein P, Suter A, et al. Echinacea in the prevention of induced rhinovirus colds: a meta-analysis. *Clinical Therapeutics*. 2006;28(2):174-183.
- Shah SA, Sander S, White CM, et al. Evaluation of echinacea for the prevention and treatment of the common cold: a meta-analysis. *Lancet Infectious Diseases*. 2007;7(7):473-480.
- Singh M, Das RR. Zinc for the common cold. *Cochrane Database of Systematic Reviews*. 2011;(2):CD001364. Accessed at <http://www.thecochranelibrary.com> on December 12, 2011.
- Woelkart K, Linde K, Bauer R. Echinacea for preventing and treating the common cold. *Planta Medica*. 2008;74(6):633-637.
- Yamshchikov AV, Desai NS, Blumberg HM, et al. Vitamin D for treatment and prevention of infectious diseases: a systematic review of randomized controlled trials. *Endocrine Practice*. 2009;15(5):438-449.
- Zhang X, Wu T, Zhang J, et al. Chinese medicinal herbs for the common cold. *Cochrane Database of Systematic Reviews*. 2007;(1):CD004782 [edited 2010]. Accessed at <http://www.thecochranelibrary.com> on December 12, 2011.

For More Information

NCCAM Clearinghouse

The NCCAM Clearinghouse provides information on NCCAM and complementary health practices, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

Toll-free in the U.S.: 1-888-644-6226

TTY (for deaf and hard-of-hearing callers): 1-866-464-3615

Web site: nccam.nih.gov

E-mail: info@nccam.nih.gov

National Institute of Allergy and Infectious Diseases (NIAID)

NIAID conducts and supports research to study the causes of allergic, immunologic, and infectious diseases, and to develop better means of preventing, diagnosing, and treating these illnesses.

Web site: www.niaid.nih.gov/

Toll-free in the U.S.: 1-866-284-4107

Flu.gov

Managed by the U.S. Department of Health and Human Services, Flu.gov provides comprehensive Government-wide information on seasonal, H1N1 (swine), H5N1 (bird), and pandemic influenza for the general public, health professionals, and others.

Web site: www.flu.gov

PubMed®

A service of the National Library of Medicine, PubMed contains publication information and (in most cases) brief summaries of articles from scientific and medical journals.

Web site: www.ncbi.nlm.nih.gov/sites/entrez

MedlinePlus

To provide resources that help answer health questions, MedlinePlus (a service of the National Library of Medicine) brings together authoritative information from the National Institutes of Health as well as other Government agencies and health-related organizations.

Web site: www.medlineplus.gov

Information on the common cold: www.nlm.nih.gov/medlineplus/commoncold.html

Information on flu: www.nlm.nih.gov/medlineplus/flu.html

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