

Natural therapies for viruses

Moderate evidence for colds or the flu (not COVID-19!):

- **Vitamin C** can reduce the duration of cold symptoms *if you've started taking it regularly before falling sick*. This seems especially true for athletes and older people.^{[47][48][49][50]} There is a [clinical trial](#) of IV vitamin C for severe COVID-19-induced pneumonia underway, and we will report on it when it is published. However, it should be noted that a single study is very preliminary evidence, so *even if* it finds some benefit, more studies will be required for confirmation before the treatment can be recommended.
- **Vitamin D** can help prevent upper respiratory infections.^{[51][52][53][54]} People's spending a lot of time indoors in the winter is tied to seasonal flu through higher viral transmission in closed areas and a lack of sun (in addition to allowing your skin to synthesize vitamin D, solar UV rays can inactivate viruses).^{[55][56]} But the impact of supplemental vitamin D on the novel coronavirus is unknown. Do not take high amounts just because you've heard that "vitamin D is good for the immune system"!
- **Zinc oral lozenges** may reduce symptom severity for the common cold by inhibiting viral replication at the back of your throat.^{[57][58][59]} Swallowed tablets aren't effective, and nasal spray may cause permanent adverse effects.^[60] Zinc acetate lozenges may be a bit more effective than zinc gluconate lozenges, although perhaps not significantly so.^{[59][61]} Note that the doses that showed efficacy (75–95 mg of zinc per day) are [too high](#) to be safe in the long run. Don't take them for more than a couple of weeks.

Weak or preliminary evidence, typically for colds and rarely for the flu:

- **Quercetin** is a plant flavonol from the flavonoid group of polyphenols. **Mechanistic** studies (not actual trials in humans!) have suggested that it may inhibit infection with various strains of influenza.^{[62][63]} Preprint (not peer-reviewed) **mechanistic** evidence suggests some potential for the novel coronavirus,^[64] but keep in mind that many compounds that are found to be safe or effective in animal and *in vitro* studies fail when rigorously tested in humans.^{[65][66]}
- **Garlic** has many more antibacterial studies than antiviral studies.^{[67][68]} Limited evidence exists for the prevention (but not the treatment) of the common cold.^[69]
- **Echinacea** has some evidence for the prevention^{[70][71]} and maybe the treatment^[70] of the common cold, although the benefit shown is very small.
- **Elderberry** has some evidence for the treatment of influenza^[72] and the common cold,^{[72][73]} but very few studies exist thus far.
- **Pelargonium sidoides** also has few studies, and only on cold treatment, not on prevention.^{[76][77]}
- **Probiotics** aren't one monolithic thing. Certain specific strains may help with cold prevention, although evidence is mixed. Efficacy may vary greatly from individual to individual due to everyone having a different gut microbiome.^{[78][79][80][81]}
- **N-Acetylcysteine** (NAC) has limited evidence for reducing flu episodes,^[82] and a combination of L-cystine and [L-theanine](#) has limited evidence for reducing episodes

of the common cold.^[83] Note that NAC has evidence for tumor initiation in animals when used regularly at high doses.^{[84][85][86]}

Nutrition and lifestyle interventions

A poor diet is tied to an increase in general infection risk, and lack of sleep is possibly an even greater factor. Yet when it comes to infection prevention and treatment, way more trials look at supplements than at dietary and lifestyle strategies. Don't be fooled! There's greater financial incentive to run supplement trials, and they are much cheaper, shorter, and easier to conduct than diet trials.

Moderate evidence for immune function in general:

- **Sleep.** If you don't sleep enough, your immune system is impaired,^[87] making you more likely to catch the flu and the common cold.^[88] **Sleep quality** is also important.
- **Less ultraprocessed food.** High amounts of processed carbohydrates and refined fats can interfere with proper immune function.^[89] Even short-term hyperglycemia can impair your response to infection.^[90]

Very, very weak or preliminary evidence for colds or the flu (not COVID-19!):

- **Gargling.** A randomized trial reported that gargling with water could help ward off upper respiratory tract infections.^[91] Another reported that saline nasal irrigation and gargling could reduce the symptoms of upper respiratory tract infection.^[92]
- **Honey.** *In vitro* evidence suggests anti-influenza properties,^[93] but there have been no human trials. Relatively stronger evidence indicates that honey may help with coughs, though.^{[94][92][95]}

40. [^ Harkey MR, et al. Variability in commercial ginseng products: an analysis of 25 preparations. *Am J Clin Nutr.* \(2001\)](#)
41. [^ Funk RS, et al. Variability in Potency Among Commercial Preparations of Berberine. *J Diet Suppl.* \(2018\)](#)
42. [^ Attipoe S, et al. Variability of Stimulant Levels in Nine Sports Supplements Over a 9-Month Period. *Int J Sport Nutr Exerc Metab.* \(2016\)](#)
43. [^ LeBlanc ES, et al. Over-the-counter and compounded vitamin D: is potency what we expect?. *JAMA Intern Med.* \(2013\)](#)
44. [^ Cohen PA, et al. Caffeine content of dietary supplements consumed on military bases. *JAMA Intern Med.* \(2013\)](#)
45. [^ Avula B, et al. Identification and quantification of vinpocetine and picamilon in dietary supplements sold in the United States. *Drug Test Anal.* \(2016\)](#)
46. [^ Erland LA, Saxena PK. Melatonin Natural Health Products and Supplements: Presence of Serotonin and Significant Variability of Melatonin Content. *J Clin Sleep Med.* \(2017\)](#)
47. [^ Ran L, et al. Extra Dose of Vitamin C Based on a Daily Supplementation Shortens the Common Cold: A Meta-Analysis of 9 Randomized Controlled Trials. *Biomed Res Int.* \(2018\)](#)

48. [^ Hemilä H, Chalker E. Vitamin C for preventing and treating the common cold. *Cochrane Database Syst Rev.* \(2013\)](#)
49. [^ Hemilä H. Vitamin C and Infections. *Nutrients.* \(2017\)](#)
50. [^ Carr AC, Maggini S. Vitamin C and Immune Function. *Nutrients.* \(2017\)](#)
51. [^ Martineau AR, et al. Vitamin D supplementation to prevent acute respiratory infections: individual participant data meta-analysis. *Health Technol Assess.* \(2019\)](#)
52. [^ Aglipay M, et al. Effect of High-Dose vs Standard-Dose Wintertime Vitamin D Supplementation on Viral Upper Respiratory Tract Infections in Young Healthy Children. *JAMA.* \(2017\)](#)
53. [^ Rafiq R, et al. Associations of Serum 25\(OH\)D Concentrations with Lung Function, Airway Inflammation and Common Cold in the General Population. *Nutrients.* \(2018\)](#)
54. [^ Telcian AG, et al. Vitamin D increases the antiviral activity of bronchial epithelial cells in vitro. *Antiviral Res.* \(2017\)](#)
55. [^ Acharya B, Thapa K. Indoor Staying During Winter Season Makes People More Susceptible to Flu. *J Nepal Health Res Counc.* \(2016\)](#)
56. [^ Sagripanti JL, Lytle CD. Inactivation of influenza virus by solar radiation. *Photochem Photobiol.* \(2007\)](#)
57. [^ Hemilä H, et al. Zinc acetate lozenges for treating the common cold: an individual patient data meta-analysis. *Br J Clin Pharmacol.* \(2016\)](#)
58. [^ Hemilä H, Chalker E. The effectiveness of high dose zinc acetate lozenges on various common cold symptoms: a meta-analysis. *BMC Fam Pract.* \(2015\)](#)
59. [^ a b Hemilä H. Zinc lozenges and the common cold: a meta-analysis comparing zinc acetate and zinc gluconate, and the role of zinc dosage. *JRSM Open.* \(2017\)](#)
60. [^ Alexander TH, Davidson TM. Intranasal zinc and anosmia: the zinc-induced anosmia syndrome. *Laryngoscope.* \(2006\)](#)
61. [^ Hemilä H, et al. Zinc Acetate Lozenges May Improve the Recovery Rate of Common Cold Patients: An Individual Patient Data Meta-Analysis. *Open Forum Infect Dis.* \(2017\)](#)
62. [^ Wu W, et al. Quercetin as an Antiviral Agent Inhibits Influenza A Virus \(IAV\) Entry. *Viruses.* \(2015\)](#)
63. [^ Vaidya B, et al. Effectiveness of Periodic Treatment of Quercetin against Influenza A Virus H1N1 through Modulation of Protein Expression. *J Agric Food Chem.* \(2016\)](#)
64. [^ Khaerunnisa S, et al. Potential inhibitor of COVID-19 main protease \(Mpro\) from several medicinal plant compounds by molecular docking study. *Preprints.* \(2020-03-13\)](#)
65. [^ Akhtar A. The flaws and human harms of animal experimentation. *Camb Q Healthc Ethics.* \(2015\)](#)
66. [^ Van Norman GA. Limitations of Animal Studies for Predicting Toxicity in Clinical Trials: Is it Time to Rethink Our Current Approach?. *JACC Basic Transl Sci.* \(2019\)](#)
67. [^ Bayan L, Koulivand PH, Gorji A. Garlic: a review of potential therapeutic effects. *Avicenna J Phytomed.* \(2014\)](#)
68. [^ Percival SS. Aged Garlic Extract Modifies Human Immunity. *J Nutr.* \(2016\)](#)
69. [^ Lissiman E, Bhasale AL, Cohen M. Garlic for the common cold. *Cochrane Database Syst Rev.* \(2014\)](#)
70. [^ a b Shah SA, et al. Evaluation of echinacea for the prevention and treatment of the common cold: a meta-analysis. *Lancet Infect Dis.* \(2007\)](#)
71. [^ Karsch-Völk M, et al. Echinacea for preventing and treating the common cold. *Cochrane Database Syst Rev.* \(2014\)](#)

72. [^] [a b](#) Ulbricht C, et al. [An evidence-based systematic review of elderberry and elderflower \(Sambucus nigra\) by the Natural Standard Research Collaboration](#). *J Diet Suppl.* (2014)
73. [^] Tiralongo E, Wee SS, Lea RA. [Elderberry Supplementation Reduces Cold Duration and Symptoms in Air-Travellers: A Randomized, Double-Blind Placebo-Controlled Clinical Trial](#). *Nutrients.* (2016)
74. [^] Barak V, Halperin T, Kalickman I. [The effect of Sambucol, a black elderberry-based, natural product, on the production of human cytokines: I. Inflammatory cytokines](#). *Eur Cytokine Netw.* (2001)
75. [^] Liu Q, Zhou YH, Yang ZQ. [The cytokine storm of severe influenza and development of immunomodulatory therapy](#). *Cell Mol Immunol.* (2016)
76. [^] Lizogub VG, Riley DS, Heger M. [Efficacy of a pelargonium sidoides preparation in patients with the common cold: a randomized, double blind, placebo-controlled clinical trial](#). *Explore (NY).* (2007)
77. [^] Fashner J, Ericson K, Werner S. [Treatment of the common cold in children and adults](#). *Am Fam Physician.* (2012)
78. [^] Wang Y, et al. [Probiotics for prevention and treatment of respiratory tract infections in children: A systematic review and meta-analysis of randomized controlled trials](#). *Medicine (Baltimore).* (2016)
79. [^] Braga VL, et al. [What do Cochrane systematic reviews say about probiotics as preventive interventions?](#). *Sao Paulo Med J.* (2017)
80. [^] Pu F, et al. [Yogurt supplemented with probiotics can protect the healthy elderly from respiratory infections: A randomized controlled open-label trial](#). *Clin Interv Aging.* (2017)
81. [^] Strasser B, et al. [Probiotic Supplements Beneficially Affect Tryptophan-Kynurenine Metabolism and Reduce the Incidence of Upper Respiratory Tract Infections in Trained Athletes: A Randomized, Double-Blinded, Placebo-Controlled Trial](#). *Nutrients.* (2016)
82. [^] De Flora S, Grassi C, Carati L. [Attenuation of influenza-like symptomatology and improvement of cell-mediated immunity with long-term N-acetylcysteine treatment](#). *Eur Respir J.* (1997)
83. [^] Kurihara S, et al. [Effects of \(L\)-cystine and \(L\)-theanine supplementation on the common cold: a randomized, double-blind, and placebo-controlled trial](#). *J Amino Acids.* (2010)
84. [^] Sayin VI, et al. [Antioxidants accelerate lung cancer progression in mice](#). *Sci Transl Med.* (2014)
85. [^] Breau M, et al. [The antioxidant N-acetylcysteine protects from lung emphysema but induces lung adenocarcinoma in mice](#). *JCI Insight.* (2019)
86. [^] Šalamon Š, et al. [Medical and Dietary Uses of N-Acetylcysteine](#). *Antioxidants (Basel).* (2019)
87. [^] Besedovsky L, Lange T, Haack M. [The Sleep-Immune Crosstalk in Health and Disease](#). *Physiol Rev.* (2019)
88. [^] Prather AA, et al. [Behaviorally Assessed Sleep and Susceptibility to the Common Cold](#). *Sleep.* (2015)
89. [^] Myles IA. [Fast food fever: reviewing the impacts of the Western diet on immunity](#). *Nutr J.* (2014)
90. [^] Jafar N, Edriss H, Nugent K. [The Effect of Short-Term Hyperglycemia on the Innate Immune System](#). *Am J Med Sci.* (2016)

91. [^ Satomura K, et al. Prevention of upper respiratory tract infections by gargling: a randomized trial. *Am J Prev Med.* \(2005\)](#)
92. [^ a b Ramalingam S, et al. A pilot, open labelled, randomised controlled trial of hypertonic saline nasal irrigation and gargling for the common cold. *Sci Rep.* \(2019\)](#)
93. [^ Watanabe K, et al. Anti-influenza viral effects of honey in vitro: potent high activity of manuka honey. *Arch Med Res.* \(2014\)](#)
94. [^ Goldman RD. Honey for treatment of cough in children. *Can Fam Physician.* \(2014\)](#)
95. [^ Waris A, et al. RANDOMISED DOUBLE BLIND STUDY TO COMPARE EFFECTIVENESS OF HONEY, SALBUTAMOL AND PLACEBO IN TREATMENT OF COUGH IN CHILDREN WITH COMMON COLD. *East Afr Med J.* \(2014\)](#)