Common Cold: 
Facts & Fictions

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Vitamin C can prevent common cold
Linus Pauling

Ascorbic acid and the common cold

Linus Pauling, Ph.D.

For a number of years I have been interested in the possibility that the use of vitamin C might offer substantial improvement in the treatment of colds. The possibilities were first suggested to me by Dr. W. C. W. Binding of the University of California in 1932. He had observed that large doses of vitamin C prevented colds in high-altitude workers. I became interested in this possibility and have been studying it ever since.

In a recent article I published a report on the results of a large-scale study of 1000 people who were given vitamin C prophylactically. The results showed that those who received vitamin C were about 50% less likely to develop colds than those who received a placebo. These results are consistent with previous reports of the effectiveness of vitamin C in preventing colds.

The use of vitamin C in the prevention of colds is also supported by the work of Dr. E. C. W. Binding of the University of California, who showed that large doses of vitamin C given after the onset of a cold can greatly reduce the duration and severity of the illness.

In conclusion, I believe that the use of vitamin C in the prevention and treatment of colds is a promising approach. Further research is needed to determine the optimal dosage and duration of vitamin C treatment.

Linus Pauling

Reference:
Vitamin C for preventing and treating the common cold (Review)

Douglas RM, Hemila H, Chalker E, D'Souza RDD, Treacy B

Status: Commented

This record should be cited as:

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Dose: 1gm/day
Effective in:
1. Severe physical stress: Marathon runners and soldiers
2. Severe cold: Skier

Douglas RM, Hemila H, Chalker E, Treacy B. Vitamin C for preventing and treating the common cold. Cochrane Database Syst Rev.
How many oranges should one eat to get this protective effect?

60mg

30mg

Histamine is a mediator in common cold
Histamine is NOT a mediator in common cold.¹-³


• First generation antihistamines decrease rhinorrhea and sneezing

• Second generation antihistamines do not have any beneficial effect in common cold

Sutter AI, Lemiengre M, Campbell H, Mackinnon HF. Antihistamines for the common cold. Cochrane Database Syst Rev
Common cold is predisposed by exposure to cold air currents

– Poor ventilation
– People spend more time indoors: get prolonged contact with others who may be sick
– Common cold viruses survive longer

Common cold can last for months in some children

- **Adults:** 2-4 attacks per year
- **Children:** 4-8 attacks per year

*10–15% of children* have at least *12 infections* per year.

Children in **daycare centers** during the first year of life have **50%** more colds than children cared for only at home.

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Common cold does not confer life long immunity

Air borne transmission is the main mechanism of spread
Viral infection without a secondary bacterial infection can cause a purulent nasal discharge.

Bacteria is cultured in only about 50% of purulent discharge.\(^{(1)}\)

Discoloration of the nasal discharge occurs during the course of viral rhinosinusitis due to recruitment of PNL under the effect of IL-8.\(^{(2)}\)


Table 2. Factors associated with the diagnosis of chronic rhinosinusitis

<table>
<thead>
<tr>
<th>Major factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasal discharge/purulence/discolored postnasal drainage</td>
</tr>
<tr>
<td>Hypochondriasis</td>
</tr>
<tr>
<td>Purulence in nasal cavity on examination</td>
</tr>
<tr>
<td>Fever (acute rhinosinusitis only)</td>
</tr>
<tr>
<td>Minor factors</td>
</tr>
<tr>
<td>Headache</td>
</tr>
<tr>
<td>Fever (all nonacute)</td>
</tr>
<tr>
<td>Halitosis</td>
</tr>
<tr>
<td>Fatigue</td>
</tr>
<tr>
<td>Dental pain</td>
</tr>
<tr>
<td>Cough</td>
</tr>
<tr>
<td>Ear pain/pain/pressure/fullness</td>
</tr>
</tbody>
</table>

GUIDELINES

Clinical practice guideline: Adult sinusitis

Richard M. Rosenfeld, MD, MPH, David Andes, MD, Neil Bhattacharyya, MD, Dickson Cheung, MD, MBA, MPH-C, Steven Eisenberg, MD, Theodore G. Ganiats, MD, Andrea Getzer, MD, MS, Daniel Hamilos, MD, Richard C. Haydon III, MD, Patricia A. Hudgins, MD, Stacie Jones, MPH, Helene J. Krouse, PhD, Lawrence H. Lee, MD, Martin C. Mahoney, MD, PhD, Bradley F. Marple, MD, Col. John P. Mitchell, MC, MD, Robert Nathan, MD, Richard N. Shiffman, MD, MCIS, Timothy L. Smith, MD, MPH, and David L. Witsell, MD, MHS, Brooklyn, NY; Madison, WI; Boston, MA; Baltimore, MD; Edina, MN; San Diego, CA; Hartford, CT; Lexington, KY; Atlanta, GA; Alexandria, VA; Detroit, MI; Buffalo, NY; Dallas, TX; Wright-Patterson AFB, OH; Denver, CO; New Haven, CT; Portland, OR; and Durham, NC

When this symptom complex is present, the clinician should distinguish between viral rhinosinusitis (VRS) and presumed ABRS. This distinction is based on illness pattern and duration (Table 5), because purulent nasal drainage as a sole criterion cannot distinguish between viral and bacterial infection.
Antibiotics for the common cold and acute purulent rhinitis

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Editorial group: Cochrane Acute Respiratory Infections Group.

Publication status and date: Edited (no change to conclusions), published in Issue 2, 2010.

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Systematic review of the treatment of upper respiratory tract infection

Tom Feely, Nigel Stocks, Toby Thomas

Abstract

Objective: To assess the risks and benefits of antibiotic treatment in children with symptoms of upper respiratory tract infection (URT).

Design: Quantitative systematic review of randomised trials that compare antibiotic treatment with placebo.

Data sources: Twelve trials retrieved from a systematic search (electronic databases, contact with authors, contact with drug manufacturers, reference lists); no restriction on language.

Main outcomes measured: The proportion of children in whom the clinical outcome was worse or unchanged; the proportion of children who suffered complications or progression of illness; the proportion of children who had side effects.

Results: 1,099 children were randomised in six trials that contributed to the meta-analysis. Six trials were not used in the meta-analysis because of different outcomes or incomplete data. Clinical outcome was not improved by antibiotic treatment (relative risk 1.01, 95% confidence interval 0.89 to 1.13); neither was the proportion of children suffering from complications or progression of illness (relative risk 0.71, 95% CI 0.41 to 1.22). Complications from URT in the five trials that reported this outcome were more often associated with bacterial infection. Haemophilus influenzae and Streptococcus pneumoniae are cultured in approximately 20% of children with lower respiratory tract infection in the community.

Despite the predominantly viral cause, antibiotics are frequently prescribed to children with symptoms of URT. On average, 60% of children with URT are prescribed an antibiotic, but this varies substantially between doctors, with some general practitioners prescribing it to as many as 60% of children who present with URT. Such prescribing is initiated by general practitioners in the belief that antibiotics may either ameliorate symptoms, shorten the illness, or prevent further complications, such as pneumonia or acute otitis media. This belief is not based on any firm evidence from clinical trials. In fact, previous narrative reviews have suggested that for most children URT is a self-limiting condition that requires symptomatic treatment alone, and that antibiotic treatment is more likely to cause harms than benefits.

In view of the persistence of antibiotic prescribing for this condition and the uncertainty concerning the risks and benefits from treatment, we performed a quantitative systematic review of randomised controlled trials (RCTs) that compared antibiotic treatment with placebo in children with URT managed in community settings.
Take home messages

- Vitamin C can not prevent common cold
- Histamine is NOT a mediator in common cold
- Common cold is NOT predisposed by exposure to cold currents
- Common cold resolve after 7-14 days without treatment
- Some common cold viruses confer life long immunity
- Indirect contact is the main mechanism of spread
- Viral infection can cause a purulent nasal discharge