

The common cold.

Everyone has had the common cold. What are the symptoms?

- runny nose/cough/sneezing/sore throat/congestion
- others, though fever is fairly rare (except in children)

Caused by:

apprx. 50 % rhinoviruses

rest a combination of:

coronaviruses

parainfluenza, respiratory syncytial viruses, & others

(occasionally the flu may manifest itself as a common cold, often if it's the second infection with the same flu virus).

there are so many different viruses that cause the common cold it's virtually impossible to get immunity.

So, what is the typical course of a cold?

1) Infection/transmission:

People get infected with the virus either through:

airborne viruses (sneezing, coughing, etc.)

OR

contact with a cold virus:

from the saliva or mucus of an infected person

surfaces that are infected (someone touches a doorknob, etc., etc.)

- if person then rubs nose or eyes, virus is introduced

(there's a duct between the eyes and the throat)

Virus enters nasopharynx region (back of the throat), and enters some of the cells lining this area.

2) Incubation:

At this point virus does what most viruses do - enters cells in back of throat and starts to multiply.

Shortly many cells in this area are infected.

Symptoms usually start 24 - 72 hours after infection with the virus

- although there are some different figures here, the minimum seems to be about 10 hours, and the maximum about 5 days. Part of the problem is that there are so many different viruses, and each one can behave a little differently.

People are most infectious during the early part (first 2 - 3 days) of having cold symptoms - before the immune system starts to eliminate the virus

3) Progression of the cold:

A part of the immune system we didn't discuss - natural killer cells - start to eliminate infected cells.

- think of them as “generalized” cytotoxic T cells (they destroy any cells in the body that look abnormal.

However, it's the immune response that causes most of the symptoms of the cold:

- the virus causes very little damage to the throat.

- instead, a massive immune response that includes histamine, kinins, and interleukins are responsible.

- these cause inflammation of the blood vessels in the area of infection:

- also increase mucus production, activate cough reflexes, and even stimulate pain nerve fibers.

- what is annoying is that this response from the immune system is NOT necessary to get over the cold:

- about 25% of infected people never develop the symptoms, but recover at about the same rate as anyone else!

As virus (and infected cells) are eliminated, the symptoms of the cold gradually disappear.

- usually 1 week, sometimes as much as 10 days before symptoms clear up completely.

4) Treatments/cure

Except for that brief comment on interferon, there seems to be no “cure” for the common cold, and certainly no practical cure.

The best treatments include:

- antihistamine to counter the histamine released by the immune system.
 - unfortunately, only the older antihistamines seem to do much. The newer “non-drowsiness” forms haven't been shown to be that effective.
 - older research that showed that antihistamines were not effective lacked sufficient “precision” in their studies. These days antihistamines are considered effective for the cold.
- NSAIDS (non-steroidal anti-inflammatory drugs)
 - reduce fever, aches, pains, & general malaise caused by these symptoms.
 - recent research is looking into their effectiveness in treating coughs associated with the cold.
 - can often cause gut problems
- decongestants
 - pseudophedrine hydrochloride reduces the swelling of the nasal passages.
 - can increase heart rate/pressure, etc.
 - illicit drug related problems.
 - nasal decongestants are probably better since they don't have systemic effects, but they can cause real dependency issues.
 - if used for more than 3 - 5 days, may cause people to become dependent on these since their nasal passages refuse to stay open any other way anymore.
- anticholinergics
 - reduce mucus gland secretions (runny nose).
 - downside: can interfere with glaucoma or the prostate
- cough suppressants

- often work by turning off the cough reflex in the brain. Some may include narcotics in their formulations.

5) Pseudo-treatments

There are probably few diseases that have so many pseudotreatments, and fallacies associated with them.

- Vitamin C - doesn't do anything. One study noticed a slightly reduced duration, but this was so slight as to be almost meaningless, and only if someone was taking high doses of Vitamin C before onset.

- Zinc - about half the studies done show some minor reduction in severity with zinc; the other half show nothing.

- numerous different formulations make results difficult to compare.

- Zinc has bad side effects on the gut.

- approximately 25 million people (in U.S.???) have a genetic problem that can cause copper depletion if zinc is taken for more than two weeks - this causes anemia.

- The FDA hasn't weighed in on this whole issue.

- Echinacea - some studies indicate a reduction in the duration, but this hasn't been substantiated by anyone. Some large follow up studies show nothing, and most consider any effect unproven.

- Other herbs - at best can soothe some of the symptoms, but no real benefit shown.

- Steam inhalation, chicken soup, etc.

- not effective, though may feel good for a bit.

- (but, a study cited by the Mayo clinic indicates that chicken soup can act as an anti-inflammatory by slowing the movement of some white blood cells!!)

6) Myths and other stuff associated with the common cold:

- you can't get a cold from cold weather

- yes, they're more common during the cold months, but no real good reason has been advanced.

- recently, there is some evidence that irritation of the nasal passages due to cold weather may make the nasal passages more susceptible to the cold.

- but the jury is out.

- colds are caused by a virus

- Antibiotics do not work

- true. Common overprescription of antibiotics for the common cold has led to much antibiotic resistance. The cold is caused by a virus, not a bacteria.

- Antivirals?

- a few companies are working on antivirals for the common cold. some are close to being available.

- it'll be interesting to see how effective they are

- (remember most of the symptoms are coming from your own immune system, not the virus).

7) Economic cost?

- over 10 billion dollars a year are spent on the common cold.

- 7.7 billion in visits to the doctor

- 2.9 billion in OTC medication

- 0.4 billion in prescription medication

- but, people miss an estimated 150 million work days annually, adding another 20 billion dollars to the price of the common cold.

8) Preventions?

- not much that can be done, however:

- avoid people with the cold.

- wash hands (removes virus - don't bother with antibacterial soap).

- CDC recommends alcohol based gels for medical workers.

- don't touch face, etc.

- immunization against a single cold strain would probably work, but it's

impracticable. There are an estimated 200+ viruses that can cause the common cold.

9) Finally, the scary stuff:

Recently the CDC has noticed a new type of adenovirus (yet another virus that cause the cold.

Fortunately it is fairly rare, but:

- this mutated virus has caused dozens of illnesses and 10 deaths.

- one of those was a 19 year old trainee at Lackland airforce base (i.e. someone in pretty good shape). Several others from the base wound up in the ICU.

The actual virus (unmutated) has been seen before in Europe among military recruits in 1969.

Fortunately, not much has been in the news since November, and the outbreaks have been fairly isolated (& rare!).