

The Common Cold

Toolbox Talk

Sneezing, scratchy throat, runny nose - everyone knows the first signs of a cold, probably the most common illness known. Although the common cold is usually mild, with symptoms lasting one to two weeks, it is a leading cause of doctor visits and job absenteeism.



The Problem

Throughout a year, individuals in the United States suffer 1 billion colds, according to some estimates.

Colds are most prevalent among children, and seem to be related to youngsters' relative lack of resistance to infection and to contact with other children in daycare centers and schools.

On average, children have about six to ten colds a year. In families with children in school, the number of colds per child can be as high as 12 a year. Adults average about two to three colds a year, although the range varies widely. Women, especially those aged 20 to 30 years, have more colds than men, possibly because of their closer contact with children. On average, individuals older than 60 have less than one cold a year.

The economic impact of the common cold is enormous. The National Center for Health Statistics (NCHS) estimates that in 1996, 62 million cases of the common cold in the United States required medical attention or resulted in restricted activity, caused 45 million days of restricted activity, and 22 million days lost from school.

The Causes

The Viruses. More than 200 different viruses are known to cause the symptoms of the common cold. Rhinoviruses (from the Greek rhin, meaning "nose") cause an estimated 30 to 35 percent of all adult colds,

and are most active in early fall, spring, and summer. The causes of 30 to 50 percent of adult colds, presumed to be viral, remain unidentified.

Does cold weather cause a cold? Although many people are convinced that a cold results from exposure to cold weather, or from getting chilled or overheated, the National Institute of Allergy and Infectious Disease (NIAID) have found that these conditions have little or no effect on the development or severity of a cold. Nor is susceptibility apparently related to factors such as exercise, diet, or enlarged tonsils or adenoids. On the other hand, research suggests that psychological stress, allergic disorders affecting the nasal passages or pharynx (throat), and menstrual cycles may have an impact on a person's susceptibility to colds.

The Cold Season

In the United States, most colds occur during the fall and winter. Beginning in late August or early September, the incidence of colds increases slowly for a few weeks and remains high until March or April, when it declines. The seasonal variation may relate to the opening of schools and to cold weather, which prompt people to spend more time indoors and increase the chances that viruses will spread from person to person.

Seasonal changes in relative humidity also may affect the prevalence of colds. The most common cold-causing viruses survive better when humidity is low—the colder months of the year. Cold weather may also make the nasal passages' lining drier and more vulnerable to viral infection.

Cold Symptoms

Symptoms of the common cold usually begin two to three days after infection and often include nasal discharge, obstruction of nasal breathing, swelling of the sinus membranes, sneezing, sore throat, cough, and headache. Cold symptoms can last from two to fourteen days, but two-thirds of people recover in a week. If symptoms occur often or last much longer than two weeks, they may be the result of an allergy rather than a cold.

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Colds can occasionally lead to secondary bacterial infections of the middle ear or sinuses, requiring treatment with antibiotics. High fever, significantly swollen glands, severe facial pain in the sinuses, and a cough that produces mucus, may indicate a complication or more serious illness requiring a doctor's attention.

How Cold Viruses Cause Disease

Viruses cause infection by overcoming the body's complex defense system. The body's first line of defense is mucus, produced by the membranes in the nose and throat. Mucus traps the material we inhale: pollen, dust, bacteria, and viruses. When a virus penetrates the mucus and enters a cell, it commandeers the protein-making machinery to manufacture new viruses, which, in turn, attack surrounding cells.

How Colds are Spread

Depending on the virus type, any or all of the following routes of transmission may be common:

- Touching infectious respiratory secretions on skin and on environmental surfaces and then touching the eyes or nose.
- Inhaling relatively large particles of respiratory secretions transported briefly in the air.
- Inhaling droplet nuclei: smaller infectious particles suspended in the air for long periods of time.

Individuals are more likely to transmit rhinoviruses in the second to fourth day of infection, when the amount of virus in nasal secretions is highest. Researchers have also shown that using aspirin to treat colds increases the amount of virus shed in nasal secretions, possibly making the cold sufferer more of a hazard to others.

Prevention



Hand washing is the simplest and most effective way to keep from getting rhinovirus colds. Not touching the nose or eyes is another. Individuals with colds

should always sneeze or cough into a facial tissue, and promptly throw it away. If possible, one should avoid close, prolonged exposure to persons who have colds. Because rhinoviruses can survive up to three hours outside the nasal passages on inanimate objects and skin, cleaning environmental surfaces with a virus-killing disinfectant might help prevent spread of infection.

Treatment

Only symptomatic treatment is available for uncomplicated cases of the common cold: bed rest, plenty of fluids, gargling with warm salt water, petroleum jelly for a raw nose, and aspirin or acetaminophen to relieve headache or fever.

Nonprescription cold remedies, including decongestants and cough suppressants, may relieve some cold symptoms but will not prevent, cure, or even shorten the duration of illness. Moreover, most have some side effects, such as drowsiness, dizziness, insomnia, or upset stomach, and should be taken with care.

Nonprescription antihistamines may have some effect in relieving inflammatory responses such as runny nose and watery eyes that are commonly associated with colds.

Antibiotics do not kill viruses. These prescription drugs should be used only for rare bacterial complications, such as sinusitis or ear infections, that can develop as secondary infections. The use of antibiotics "just in case" will not prevent secondary bacterial infections.

The Outlook

Thanks to basic research, scientists know more about the rhinovirus than almost any other virus, and have powerful new tools for developing antiviral drugs. Although the common cold may never be uncommon, further investigations offer the hope of reducing the huge burden of this universal problem.

