COPING WITH THE

COMMON COLD

How to keep from catching cold

Evaluating cold pills

The remedies that work

Treating the flu

Do vitamins help?

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by Wendy Murphy

AND THE EDITORS OF TIME-LIFE BOOKS

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Throat sore? Head feel stuffy and dull? Nose running like a leaky faucet and you feel a chill down to your toes? No need to ask a doctor what you have, because you know only too well. You are starting another cold, maybe your second or third this year, and one of scores you have suffered and will suffer throughout your life. If you are like most people, you may wonder from time to time why, in an age of medical miracles, someone has not come up with a cure for this most persistent and most common of human afflictions. It is a sneezing, snuffling, crying shame.

Frustrated and miserable as you may feel, you can take heart in some good news about colds and other, more serious infections that resemble colds in one way or another, such as influenza *(Chapter 4)*. After centuries of folkloric humbug and decades of scientific wanderings, researchers have in recent years begun to make major discoveries about the causes of colds.

Colds, it turns out, are not a single disease that strikes over and over again but are instead perhaps as many as 200 separate, look-alike diseases, which are set in motion by any of 200 different submicroscopic agents called viruses. Cold specialists also now know a great deal about how infections are transmitted: For example, you do, indeed, "catch" a major share of the colds you suffer— with your hands. By touching droplets of virus-laden mucus— either on the body of a carrier who already has a cold, or on some surface that he has recently contaminated, perhaps with a sneeze or his hand— and then rubbing your own nose or eyes, you conveniently deliver the cold virus to the site where colds begin.

Surprisingly, colds disrupt life in tropical climates with almost the same frequency that they do in the shivery dank of temperate countries such as the United States and Great Britain; colds are rarest in those parts of the world with the lowest temperatures. So far as careful experiment can discover, there is also little direct relationship between getting wet and chilled and catching a cold. But new understanding of the body's defense mechanisms is revealing why colds, once caught, are no more than a nuisance to most people most of the time, but the first step toward serious illnesses in others.

The growing body of knowledge about viruses and their interactions with your body may eventually lead to ways of preventing and curing colds, as this knowledge already has produced treatments for influenza and many serious complications of colds. But for the moment, the central fact of ordinary colds is that no miracle cure, no antibiotic drug, no magic potion and no omniscient physician can alter the course of a cold once you have it.

Even the National Aeronautics and Space Administration has had its nose rubbed— so to speak— in this immutable fact: It can put a man into outer space, but it cannot cure the common cold. On February 27, 1969, on the eve of a flight to orbit the earth, the clockwork countdown procedure at Cape Kennedy came to an abrupt halt when all three of the Apollo 9 crew showed the classic symptoms: stuffed-up noses, sore throats and cold-related fatigue. NASA postponed the launch at an estimated cost of $500,000— the first time in 19

A cold sufferer blows a grotesque nose, already red, swollen and sore, in an early-19th Century French lithograph. Artists of the period frequently depicted the miseries of the ailment—sometimes with compassion, but often with harsh or flippant satire.

manned flights that astronaut illness, rather than bad weather or technical trouble, caused a lift-off to be delayed. The three men recovered enough to lift off on Monday, March 3 — thus confirming the adage, Treat a cold and it will end in seven days, do nothing and it will last a week. (Partly because other space crews were isolated from contamination before launch, none suffered a repetition of the expensive 1969 outbreak of the common cold.)

Apollo 9's colds may well have been the most expensive in history, but the common cold must be ranked as a costly disease in its own right. The colds contracted by Americans alone result in an estimated 300 million days of lowered efficiency, 60 million days of lost school attendance and almost 50 million days lost on the job. Add to that the money spent on cold pills, cough syrups, nose drops, visits to the doctor and mountains of tissues, and colds cost Americans about five billion dollars a year. Not surprisingly, the British and the Dutch suffer comparable losses to the affliction. Influenza, of course, can be not only costly, but deadly; in 1918 and 1919 it caused a pandemic that spread far more rapidly than the Black Death of the Middle Ages.

Making sure a cold is only a cold

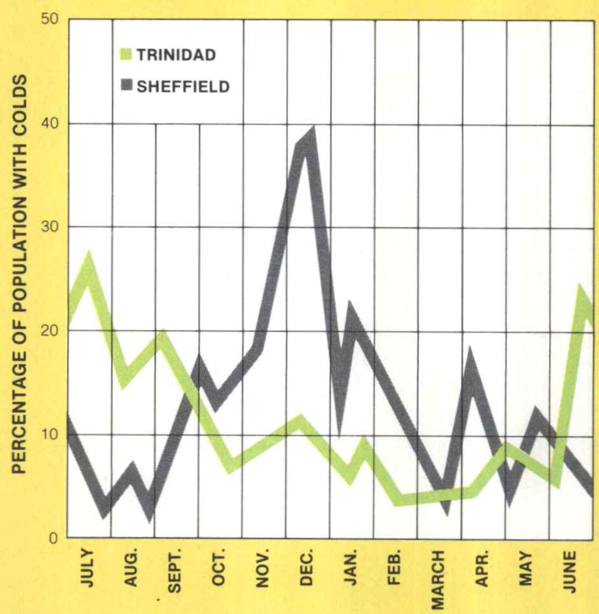
Fortunately for the world economy and the sniffling legions, most colds and influenza can be identified and treated adequately at home. The first step is to be sure that what seems to be a cold is, in fact, that transient disease and not something worse. Part of the confusion surrounding the recognition and treatment of colds stems from the multitude of words used to describe the affliction.

Physicians define a cold as an acute (fast-developing) viral infection characterized by nasal congestion (stuffiness), edema (swelling) and discharge (runny nose), and by throat irritation (sore throat). Typically, the infection is localized in the upper respiratory system, the portion of the breathing apparatus that stretches from the nostrils back and down into the upper throat (pharynx) and the voice box (larynx). Except in children, a fever is rare, and the disease is self-limiting — it takes care of itself without the intervention of doctors or medications, usually, as in the case of the Apollo 9 crew, in about a week. But this definition, itself complex enough, is often further obfuscated by physicians and cold sufferers alike, who christen the disease exhibiting these symptoms with a number of names other than "cold."

Physicians diagnosing a cold that exhibits pronounced symptoms of runny nose and stuffiness will often call it acute coryza, from the Greek *koryza,* meaning "nasal mucus." If they have a flair for the romantic, they may also call it catarrh — from the Greek *katarrhein,* literally, "to flow down" — a holdover from the ancient belief that the nasal fluids produced during colds were secretions of a brain over-

Colds in every climate

Not surprisingly, in the Northern Hemisphere, colds reach their peak in winter: The black line in the graph below plots the prevalence of colds in Sheffield, England, during the 1960s. In the tropics colds occur most frequently during the rainy season. The Caribbean island of Trinidad *(green line),* for example, has no winter, and colds are at their worst there in June and July.



burdened with waste matter. Doctors will also occasionally describe an ailment by attaching a suffix — in the case of cold symptoms, "-itis," meaning inflammation — to the word for the anatomical site of the problem. Thus: rhinitis, for inflammation of the nose; pharyngitis, of the pharynx; laryngitis, of the larynx; and sinusitis, of any of the sinuses, the cavities in the bones of the skull.

Laymen use yet another set of words to describe their discomfort. A particularly confusing and popular name for a very bad cold is "flu." Flu, or influenza, is indeed a severe respiratory infection, and it has many characteristics in common with a cold. But influenza is caused by a very specific group of viruses, and its impact is usually much more severe than that of a cold. Moreover, influenza is associated with widespread epidemics. Two other misleading and imprecise popular phrases are "head cold" and "chest cold," which are supposed to distinguish a cold without a cough from a cold with a cough. A simple cold with or without a cough is essentially located in the upper respiratory tract, not in the chest; infections that involve the chest and lungs are different and more dangerous.

Just as it is not helpful to describe a bad cold as flu, neither is it wise to assume all cold symptoms are simple colds. At the least, there are imitation colds—chronic or allergic irritations of the nose and throat that persist despite the absence of infection. Many of them can be diminished or banished with medical help. More important, a great many disabling diseases start with cold symptoms. A sore throat, for example, could be a symptom of infectious mononucleosis (which can keep a patient bedridden for many weeks and leave vital organs permanently impaired) or of possibly fatal streptococcal infection.

All these ailments — whether they are secondary infections following a cold or totally unrelated diseases that only mimic a cold — are potentially far more serious than a simple cold, and they carry the risk of permanent damage to the organs involved. Many, unlike colds, can be cured or prevented with antibiotics or vaccines; in one of the frustrating paradoxes of modern medicine, the potent germ killers now available — penicillin, erythromycin and many others — can knock out infections such as strep throat and pneumonia, and polio and measles vaccines protect against those ills; but none has any effect at all on colds.

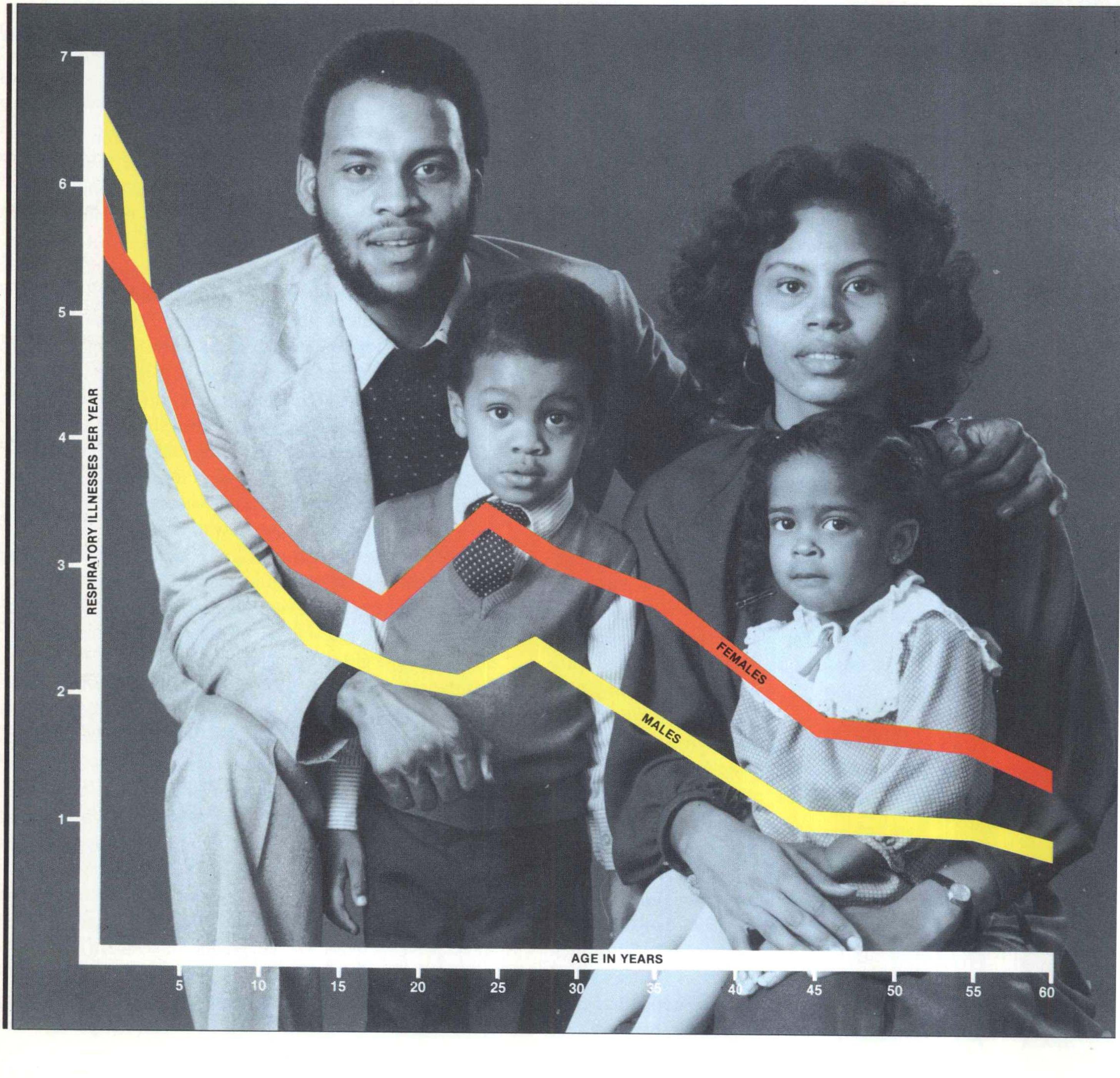
Who catches colds and when

The symptoms of a true cold are the same for everyone, young and old, male and female, in all parts of the world. But not everyone is equally likely to suffer from them. The frequency of colds, it appears, has as much to do with who you are and what you do as with the viruses that cause the disease.

Among the social, economic and psychological factors that may play a part in susceptibility to colds, age is one of the most critical. A six-year study in Tecumseh, Michigan, made by epidemiologists at the University of Michigan School of Public Health, revealed some particulars that seem to hold true for the general population. Infants are the most cold-ridden group, averaging more than six colds and similar respiratory illnesses in the first 12 months of life. Boys have more colds than girls up to the age of three, a fact consistent with the higher rate of all illnesses among male children in those years. Preschool children who have older brothers or sisters or are themselves in day care or nursery school also get colds slightly more often than those who remain at home, where their parents are their chief contact with the outside world. After the age of three, girls are more susceptible than boys; teen-age girls average three colds a year to boys' two, and the greater susceptibility of females prevails thereafter.

The general incidence of colds continues to decline into maturity, elderly people in otherwise good health having as few as one or two colds annually. One significant exception in that declining pattern is found among people in their twenties, especially women, who show a noticeable rise in cold infections for a few years. People in this age group are most likely to have young children, and it is the youngsters who inadvertently wage germ warfare upon their parents. Adults who delay having children until their thirties and forties thereupon experience the same sudden increase in cold infections as do those who become parents in their twenties.

The Tecumseh study also found that economics plays an important role. As income increases, the frequency with


RESPIRATORY ILLNESSES PER YEAR
7
6
5
4
3
2
1
AGE IN YEARS
5
10
15
20
25
30
35
40
45
50
55
60
FEMALES
MALES

Most susceptible: babies and women

As people grow older, they generally have fewer colds. The graph at left documents the drop-off in the incidence of respiratory disease over the average lifetime, as traced in a six-year study of 4,905 males and females in Tecumseh, Michigan. The researchers' figures lump together all respiratory illness, including influenza, bronchitis and pneumonia, as well as colds, but colds were by far the most frequent complaint.

The decline in the number of colds is not steady; a dramatic reduction in an individual's susceptibility to respiratory ailments occurs during the first 20 years of life. An average infant has a sniffly existence, suffering 6.1 colds and other respiratory infections before the age of one. By the late teens, a person will encounter only 2.5 such illnesses yearly; presumably, resistance has been stiffened by the colds endured at a younger age.

From young adulthood on, the decline in the number of annual colds continues more slowly. Respiratory ailments make a brief comeback among people in their twenties. During those child-rearing years, a couple's children are likely to pass some of their numerous colds on to the parents.

Gender makes a surprising difference. Mothers usually have closer contact with their children than fathers do, and this fact may help explain why women in their twenties and thirties experience so many more respiratory diseases than men of the same age. But elderly women and young girls are also stricken more often than males of the same ages; the only exception to this rule is boys aged three or younger. The male-female discrepancy is one of the mysteries of the common cold that continue to puzzle medical researchers.

which colds are reported within a family decreases. Families with the lowest incomes suffer about a third more colds than families at the other end of the scale. Lower income generally forces people to live in more cramped quarters than those typically occupied by wealthier people, and crowding greatly increases the opportunities for cold viruses to travel from person to person. Low income may also adversely influence diet. The degree to which poor nutrition affects susceptibility to colds is not yet clearly established, but an inadequate diet is suspected of lowering resistance generally.

There is one strange exception to the relationship between income and colds. The group that said it suffered the greatest number of respiratory illnesses is made up of families with low incomes but high levels of education. Researchers associate this surprising twist with an observation they have made over the years: Minor illnesses are largely what people make of them, and the recognition of a cold — particularly a mild one — is often a matter of self-awareness. Well-educated people are more likely to take note of and to complain about a cold than are the less educated, who tend to accept aches and pains as normal and inevitable. In fact, both low-income groups very probably have similar rates of infections.

Life style may be another critical factor in cold susceptibility. Extensive though still controversial research has suggested that people who experience great stress in their work and personal lives — who live each day on borrowed energy — can set off a chain of physiological events that inhibit the body's natural defenses against disease.

The influence of stress may account for the fact that among the subjects of the Tecumseh study, Monday, famous for being the bluest day of the week, is also the day on which most people come down with a cold. It would be easy to assume that a reluctance to go back to the job or school after the weekend is the agent of susceptibility here, but researchers believe there is another reason at work. The weekend provides a two-day incubation period during which infections contracted during the previous week can blossom into the debilitating symptoms of a cold. Thus the cold that appears full-blown on Sunday or Monday was probably contracted Thursday or Friday, when the accumulated stresses of a week's work had reduced the body's resistance to infection.

Stress may also incline some people to drink or smoke excessively, or to take sleeping pills and other drugs. Any of these can slow down, even paralyze, defensive reflexes that normally protect the upper respiratory tract. For the same reason, chemical pollutants in the air also may make people more susceptible to upper respiratory infections. In some instances, pollutants may inhibit the body's defense mechanisms or irritate the nasal membranes that ordinarily protect against infection. In other cases, pollutants can initiate an allergic reaction, causing symptoms that mimic those of a cold but are not caused by a cold virus.

The role played by air quality in cold infections is relatively simple compared with broader effects of the environment. Researchers have tried all sorts of diabolical schemes for testing the widely held belief that certain climates and weather conditions make people more likely to catch cold—and as far as they have been able to discover, there is no direct relationship. In one study undertaken at the Common Cold Unit, a British center that began studying the disease in 1946, volunteers were divided into three groups. One group was inoculated with an infectious solution of cold viruses and then required to stand around in a cold room in dripping-wet bathing suits for a half hour. A second group was not administered the virus solution but did get the same miserable treatment with cold rooms and soggy suits. The last group was inoculated like the first but otherwise left alone. Group 2—chilled but not inoculated—developed no colds within the usual incubation period. The inoculated groups—chilled and unchilled alike—did succumb and at about the same rate.

Similar results were obtained by American cold researchers Drs. H. F. Dowling and George Gee Jackson among groups of shivering Chicagoans in 1957, with one interesting exception: Women in the middle third of their menstrual cycle were found to be dramatically more susceptible to colds following chilling. About 77 per cent of them developed colds when inoculated with cold viruses and exposed to chilling conditions as compared with only 29 per cent of the other women. Dowling and Jackson believed this to show that hormonal changes in the susceptible group had produced significant—though as yet unidentifiable—changes in the mucous membranes of the nose.

Perhaps even more difficult to sort out is the so-called winter factor in susceptibility to colds. Colds and cold weather are widely believed to be related; presumably that ancient notion is the basis for calling such diseases colds in the first place. But low temperatures are now known to play a relatively minor role; what matters is the season.

One study found that the annual rate of cold and other respiratory infections for students in the semitropical Philippines was more than twice as high as that for students in Wisconsin, where winters are long and bitter: 49 per 1,000 compared with 24 per 1,000. But the study also found that in both places the peak of infections occurred during the cooler part of the year—the rainy season in the Philippines, fall and winter in Wisconsin.

The mysterious winter factor thus seems to be at work, but there is no unshakable theory yet as to precisely how it works. Many researchers ascribe the connection to a change in behavior patterns. In both temperate and tropical climates, the season of inclement weather coincides with the return to school and an increase in the hours spent indoors—where crowded quarters and poor air circulation would make it easier to pass on infection.

Other research shows that within the colder months in places like North America, there are three peak periods of cold infection—coinciding roughly with the arrival of seasonal changes in fall, midwinter and spring. Some scientists think these turns in the weather may create just enough physiological stress to upset the body's ability to keep cold viruses in check. Others blame psychological stresses, noting that one of the three peaks in cold infections in Western Europe and the United States occurs at the Christmas-New Year's holiday season, a time that is supposed to be pleasant but actually is one of intense emotional stress.

That the winter factor has little to do with external air temperature is indicated by the experience of people who live in areas of extreme cold. One of the most infection-free places on the globe is the South Pole, where temperatures fall

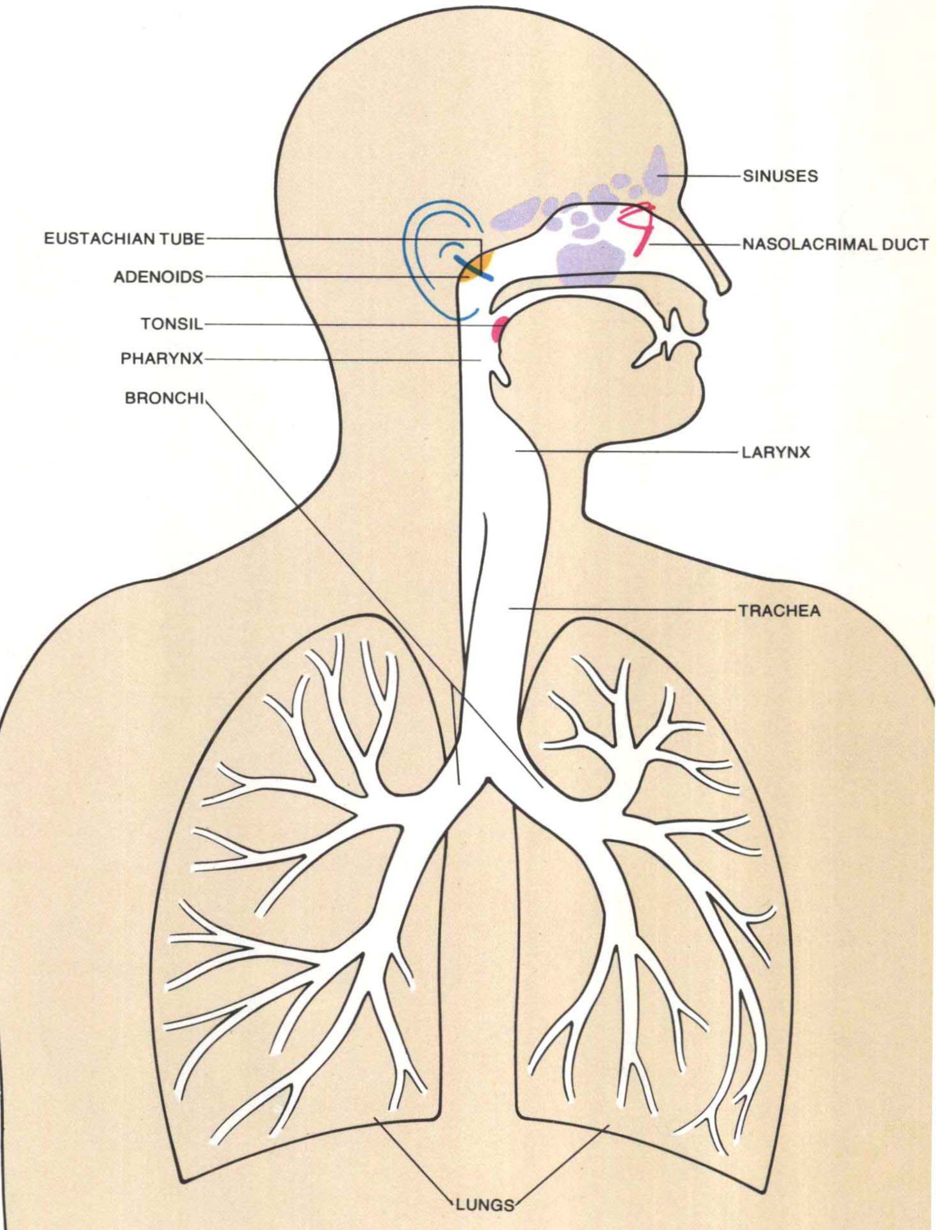
A rapid-transit route for the breath of life

The cold-prone human respiratory tract, simplified in drawings at right and on the following pages, is about 16 inches long in the average adult, made up of bones, muscles and cartilage and packed with glands, tubes, folds and flaps. Yet inhaled air takes less than two thirds of a second to travel the entire route.

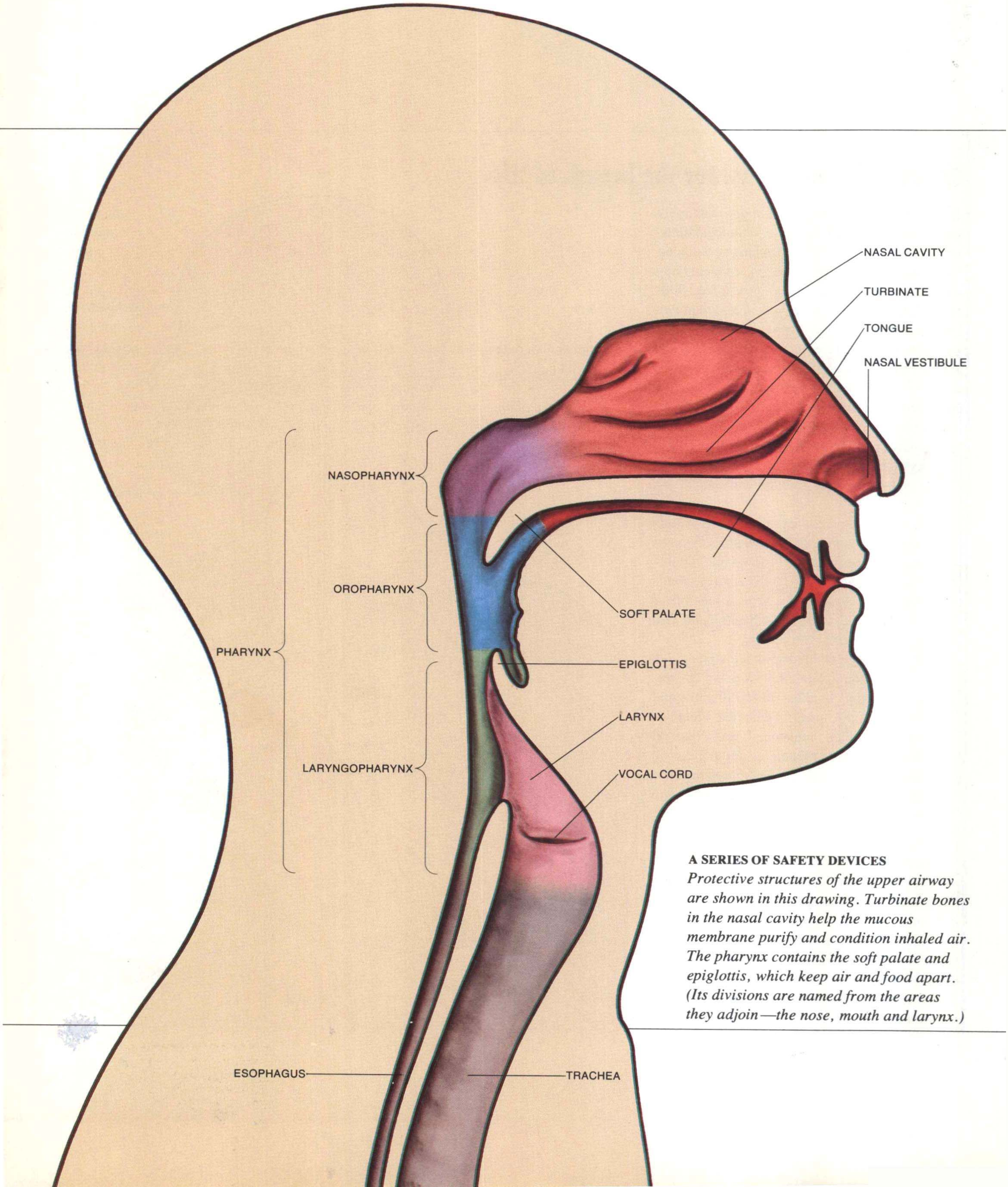
The journey starts in an antechamber, the nose, where the air swirls for a quarter second or so. Special cells in the nasal cavity provide the sense of smell; tiny openings link the cavity to air-filled spaces in the skull called sinuses *(page 18)*. Other openings link the nose to the eyes through the nasolacrimal ducts *(page 41)*, and to the ears through the Eustachian tubes *(page 83)*.

From the nose, in a leg of its trip that lasts less than 1/10 second, air flows swiftly through the pharynx, or throat, and down into the larynx, or voice box. In the larynx a set of vibrating flaps, the vocal cords, turns a rush of air into sound, and a valve prevents food and liquid from entering the airway.

The last stage of the trip is the slowest—a third of a second. The air goes down the trachea (windpipe) to tubes called bronchi and fans out into the lungs. There the breath—warmed or cooled, moistened, and cleansed of particles carrying bacteria and viruses—fulfills the purpose of the entire system: The air gives up oxygen to feed the body, and takes on carbon dioxide for the return trip.



A MAP OF THE AIRWAYS
The linked airways of the respiratory tract begin at the nose and mouth. Beyond lies the pharynx, studded with clumps of protective tissue called tonsils and adenoids (page 19). At the larynx food is diverted to the stomach and air is directed through the trachea to the bronchi, which branch off into the lungs.



A SERIES OF SAFETY DEVICES
Protective structures of the upper airway are shown in this drawing. Turbinate bones in the nasal cavity help the mucous membrane purify and condition inhaled air. The pharynx contains the soft palate and epiglottis, which keep air and food apart. (Its divisions are named from the areas they adjoin—the nose, mouth and larynx.)

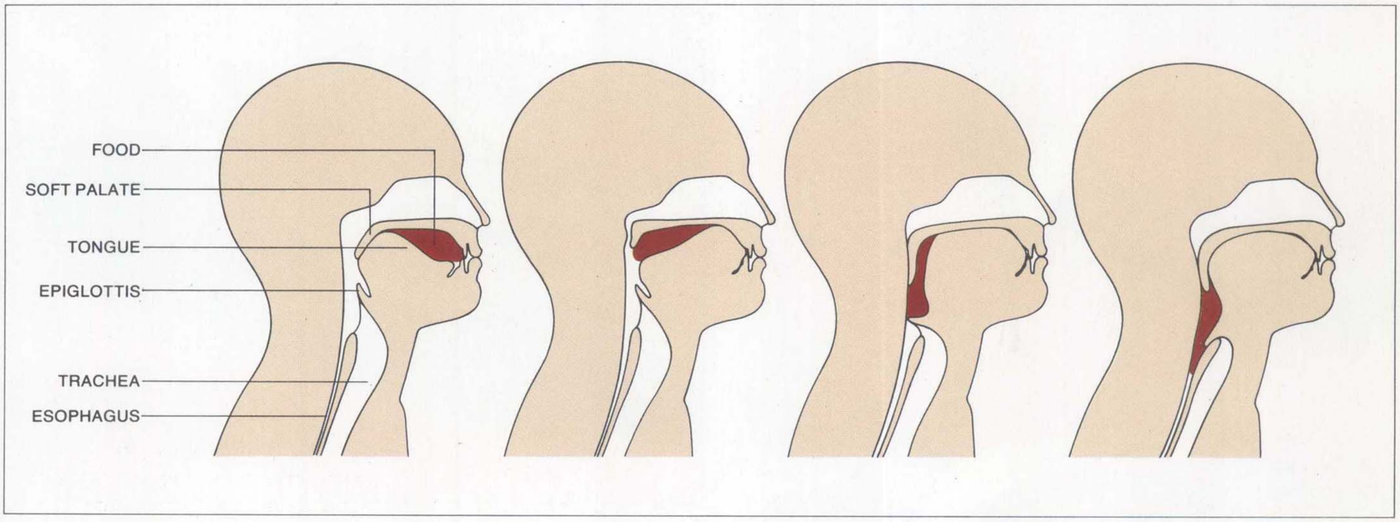
Safeguards of the upper airway

Every day an average adult breathes in and out about 22,000 times, inhaling and exhaling some 500 cubic feet of air. Along with essential oxygen come dirt, pollen and disease germs—and, over part of the breathing route, food. The upper airway *(opposite),* which conducts this enormous volume of air from the nose to the windpipe, is designed to remove, divert or neutralize these contaminants and simultaneously adjust air temperature and humidity to internal requirements.

The nose provides the first line of defense against airborne threats. Short, thick hairs just inside the nostrils filter out the larger particles. Most of the smaller particles are trapped—stuck like flies on flypaper—by the mucous membrane, which lines the nasal cavity and most of the airway down into the lungs. This protective lining, the part of the system most affected by a cold, is covered with invisibly small hairs, or cilia—as many as 250 to one membrane cell. They are continuously blanketed by mucus, the viscous secretion of the glands within the membrane.

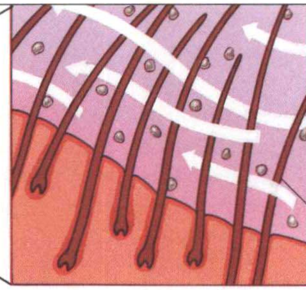
Inside the nose, the area that incoming air must pass over is increased by projections called turbinates, scroll-like bones sticking into the passageway from the side. They not only present more mucus for more effective trapping of dirt but also increase the contact between the air and the membrane's network of blood vessels, which warm or cool the air.

Incoming air reaching the pharynx must be separated from food, which also moves through this part of the passageway. This tricky operation often goes awry, producing fits of coughing when food goes down the wrong way. Protecting the airway from food is the job of the epiglottis, a one-way valve that moves during a swallow to close off the larynx and shunt food into the esophagus, on its way to the stomach below.

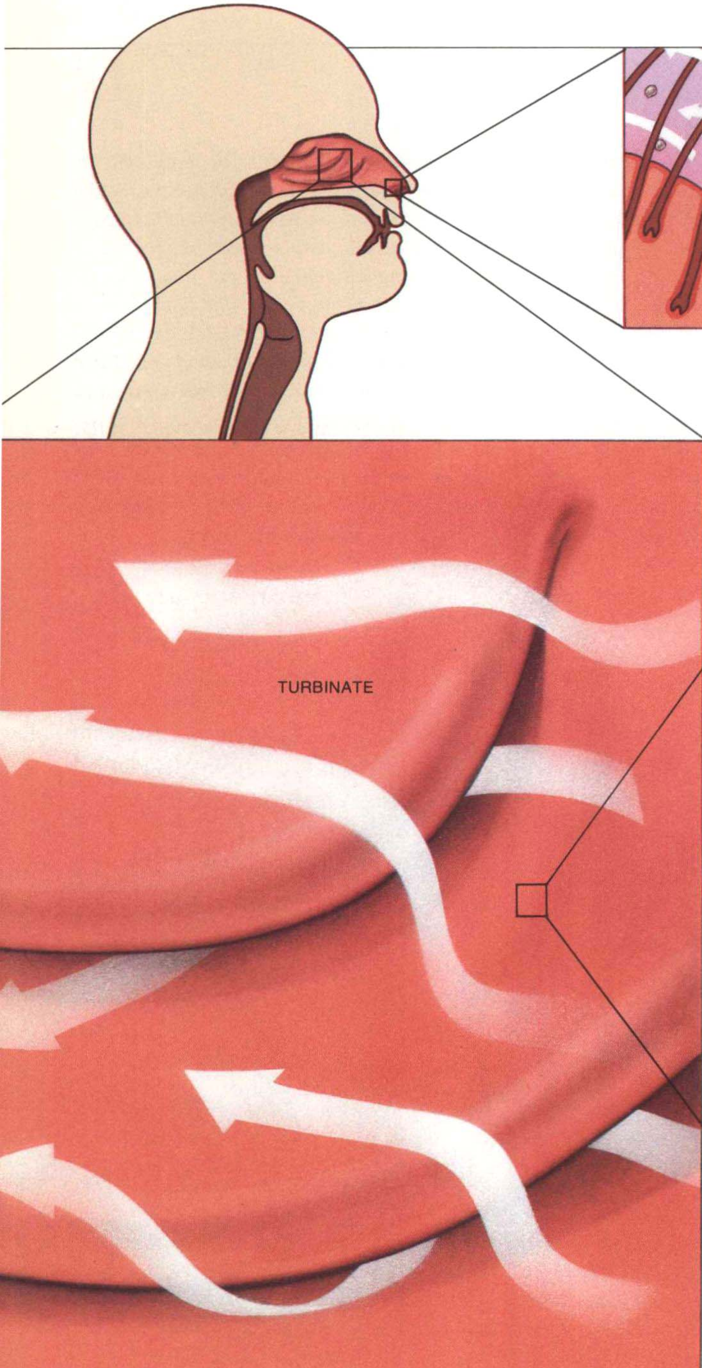


THE MECHANISM OF A SWALLOW

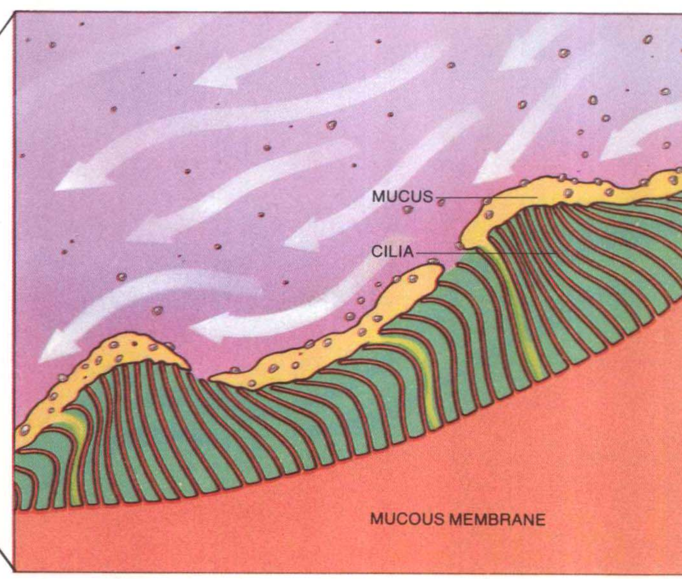
These four drawings, depicting the stages of a single swallow from beginning to end, indicate how food is kept out of the airway of the respiratory tract. In the first drawing, food is taken into the mouth; in the second, the tongue pushes the food back toward the throat, and a reflex action tilts the soft palate to seal off the opening between the mouth and the nose. Then the leaf-shaped epiglottis valve folds down over the entrance to the larynx, blocking the passage to the lungs (third drawing). Breathing ceases for a moment and, as shown in the fourth drawing, the food is moved down into the esophagus.



HAIR FOR COARSE CLEANING
As air is inhaled (arrows), stiff hairs called vibrissae, growing from the nasal lining at the entrance to the nose, trap the larger particles carried in the airstream. These nasal hairs filter out most of the dust, dirt and grit that enter the nose.



TURBINATES FOR CONDITIONING
Inhaled air (arrows) passes between the bony structures called turbinates, which project from the side walls of the nose. In a split second, blood vessels in the mucous membrane covering the turbinates warm the air almost to body temperature, and mucus moistens it to 75 to 80 per cent relative humidity.



MUCUS FOR FINE CLEANING AND PURIFYING
Patches of sticky mucus entrap particles too small to be caught by the nasal hairs. At the same time, cilia—tiny lashing filaments growing from the mucous membrane—propel the mucus to the throat at about a quarter inch a minute. The mucus is swallowed, and its contents are destroyed in the stomach.