

## MEDICINE

# Susceptibility to Colds

Study of how colds spread naturally shows that whether or not you catch cold depends on how susceptible you are at the time of exposure.

► **WHETHER OR** not you catch cold depends more on how susceptible you are at the time the cold virus hits you than on the degree to which you are exposed to colds.

That this is "probably true" is the conclusion of the latest study reported by the Common Cold Research Unit at Harvard Hospital, Salisbury, England.

The unit, headed by Dr. C. H. Andrewes, has already shown that if the common cold virus is washed out of a cold victim's nose and dropped into another person's nose, that person may get a cold. Their latest study was undertaken to find how colds spread naturally.

Children were used as donors of colds in some of the experiments because there is some evidence that they spread colds more readily than grown-ups do. All the donors, whether child or adult, were selected because they had "wild" colds or natural colds of recent onset.

To see whether and how such colds would spread, the scientists used human volunteers in good general health who come to the hospital for these experiments. The volunteers are put in isolation for the first three days, to make sure they are not coming down with a cold before the experiment starts.

In one experiment a 2,000-cubic-foot room was divided in two by a blanket hanging within one foot of side walls, floor and ceiling. Five or six volunteers without colds sat in one side of the room reading or sewing. On the other side of the blanket the children with colds played games, talking, shouting or singing, but not moving around much. A fan kept the air moving throughout the room, and sneezing-powder was sprayed into it about half way through the two-hour experiment.

In this experiment, repeated with four groups of cold donors and four groups of cold-free volunteers, only two colds developed altogether in 25 volunteers. Broken down into groups, a group of six escaped colds from five adults, a group of five escaped colds from four children, one out of eight got a cold from a group of four children, and one out of six got a cold from four children.

In another trial, children and grown-ups with colds mixed freely with healthy volunteers, eating lunch together and later playing cards and other games. This time, three out of 32 volunteers developed colds.

Colds, the scientists conclude, can spread by normal social contact and through the air in infected droplets, but the rate of infection through these routes is low.

Indirect contact, such as hands, handkerchiefs and other objects, is not of major importance in spreading colds, other experiments showed.

The cold virus may be sensitive to drying, so that it will not infect if it is dry, still other experiments suggested.

Reporting these studies with Dr. Andrewes in *Lancet* (Oct. 4) are Drs. J. E. Lovelock, A. T. Roden, J. S. Porterfield and T. Sommerville.

Science News Letter, December 13, 1952

## PHYSIOLOGY

## Actual Sex Reversal Impossible for Humans

► **FOR HUMANS**, there is no such thing as actual sex reversal. Sex of experimental animals has been changed from male to female and vice versa, but this work has been done on embryos, and very young embryos at that.

Cases of sex "reversal," such as those re-

cently reported from England and Denmark, are really cases of mistaken identity. An individual's sex is determined by inherited sex chromosomes. The sex chromosomes carry the decision as to whether testes or ovaries will develop from the gonad, the sex gland.

By injecting male hormones in the embryos of experimental animals that from their sex inheritance should have been females, scientists have been able to change the females to males; and, by giving female hormones to genetically determined male embryos, the animals have developed as females. No doctor, of course, has been able to carry out such experiments on human fetuses, which is the only time when actual sex reversal could take place.

Later operations and treatment with hormones to change the sex of a person can change external sex characteristics. These include the voice, beard or lack of it, amount and distribution of hair, development of the breasts, etc. A male who has been changed to a female could probably marry, but would probably be incapable of child-bearing.

Sex repairs can be made to correct abnormal development, and in this way the individual is transformed from male to female, but one of the great difficulties is that an individual's psychology cannot be repaired. Such a need might not be recognized until the hormone injection and surgery treatments were completed.

Science News Letter, December 13, 1952



**ALL-WEATHER BOMBER MAINTENANCE**—New standardized, all-weather maintenance hangars for B-36's, designed by Luria Engineering Company, incorporate special features to enable U. S. Air Force personnel to perform around-the-clock repairs. The bomber's tail protrudes through a rubberized-tube door opening, which, when inflated, provides weather-tight protection around the fuselage.