



Ewww! Don't Touch That!

Article

PART 1

WASHINGTON, D.C. Does someone in your home have the sniffles? If so, watch out for doorknobs and the TV remote control. A recent study found that cold sufferers often leave their germs on common surfaces around the house. The study showed that viruses can live on these surfaces for two days—or longer.

The two-part study was designed at the University of Virginia. The study attempted to learn more about germs. It also aimed to lay the groundwork for future studies. These studies will test ways to stop germs from spreading. For this study, scientists tested various surfaces in the homes of several people. These people were suffering from colds.

In the first part of the study, scientists gathered 30 adults. These adults showed early signs of colds. Testing later discovered that 16 of the 30 had the rhinovirus. This virus is responsible for about half of all colds. The 16 people were asked to list 10 places in their homes that they had touched in the last 18 hours. Scientists then hunted for rhinovirus in those locations.

Scientists didn't have to search too carefully to find what they were looking for. Germs were everywhere. The scientists tested three salt and pepper shakers. All three tested positive for the rhinovirus. The virus was also present on 8 of 10 bathroom faucets and 3 of 4 dishwasher handles. Ten remote controls were tested. Scientists found that 6 of the 10 remote controls tested positive for the rhinovirus. This was also true for 8 of 14 refrigerator handles and 4 of 7 telephones. In addition, 6 of 18 doorknobs and 3 of 13 light switches harbored the virus.

"We found that commonly touched areas like refrigerator doors and handles [tested] positive [for cold germs] about 40 percent of the time," said Dr. Birgit Winther. Winther is an ear, nose, and throat expert. She helped with the study.

For the second part of the study, scientists attempted to determine how long the viruses remained on the various surfaces. To do this, scientists wiped various surfaces with the people's germs. They then tested to see whether rhinovirus stuck to their fingers. The 16 adults went about their day as usual. They turned on lights. They answered the telephone. More than half of the people got the virus on their fingertips. This was 48 hours after the surfaces had been wiped with the germs.

To some experts, these results were not surprising. Last year, during the cold and flu season, two doctors went germ-hunting. They examined toys in the offices of five pediatricians. Their tests uncovered traces of cold viruses. In fact, 20 percent of the toys they tested harbored germs.

These days-old viruses live on surfaces. They are proven to be transferable. Can they still make someone sick, though? Dr. Paul Auwaerter is a disease expert. According to Auwaerter, there is no proof that the traces of older viruses can make people sick. He recognizes, however, that their presence does suggest that it's a risk worthy of concern.

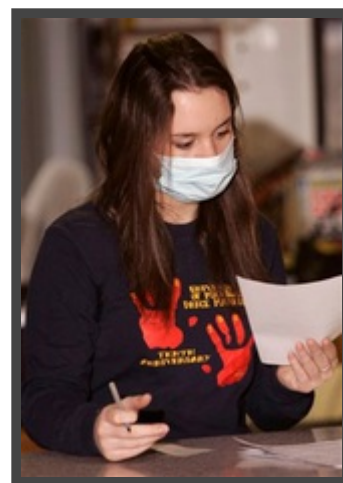


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AP Photo/Carlos Osorio

According to a recent study, face masks can help prevent colds.

Further studies need to be done. Until then, doctors say that people should try to protect themselves from germs. Some experts suggest using hand cleaning products or face masks. One study, they say, showed these measures helped to prevent colds.

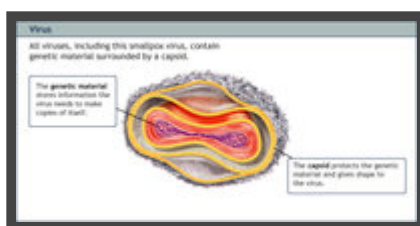
Other doctors remind that frequent hand washing will go a long way toward preventing the spread of germs in the first place.

The Associated Press contributed to this story.

PART 2

Dig Deeper

Scientists have learned much about viruses. They can see viruses with special microscopes. All viruses are made of genetic material found inside a protein coat. The coat is called a capsid. This protein coat keeps the genetic material safe. There are different kinds of protein coats. The coat of an Ebola virus is a simple tube. The smallpox virus has a protein coat with many layers. Look at the picture to learn more.



Credit: Houghton Mifflin Company

Viruses come in many shapes and sizes. But all viruses are made of a capsid and genetic material. Viruses can use living cells to copy their DNA. They can produce new viruses that way, a characteristic that makes them similar to living things. Their protein coat is also like a cell's outer membrane. But viruses do not grow. They do not respond to changes in their environment. So, they are not living organisms.

Viruses cannot reproduce by themselves. This is one of the ways they are different from living things. However, viruses can use materials in living cells to reproduce. First, viruses infect host cells. Then, they make copies. Viruses are tiny. But they can do a lot of damage to cells of other organisms.

Some viruses stay inside their host cells. Others use the host cell as a factory. They make new viruses one at a time. These viruses may not be as harmful to the infected organism. They do not kill the host cell. A host cell is not often helped by giving living space to a virus. The virus uses the cell's material, energy, and processes. Then, the virus makes many copies of itself. The new viruses burst out of the host cell, killing it.

Harmful viruses cause huge problems. Viruses that cause diseases have changed the world. Polio, smallpox, diphtheria, and AIDS are diseases caused by viruses. They changed human history. There was an influenza outbreak just after World War I. About 25 million people died.

Plant viruses can keep plants from growing or even kill them. Sometimes crop plants get viruses. When that happens, less food is grown. A lot of people lose money. Viruses can infect plants, animals, bacteria, and all other living things.

Today, scientists are discovering ways to use viruses in a good way. Scientists use viruses to put certain pieces of genetic material into living cells. For example, some genetic materials allow marine organisms to make a chemical that glows. The genetic material can be put into tissue samples. This makes it easier for scientists to study the samples.

Dictionary

frequent (*adjective*) happening often or regularly

host cell (*noun*) a cell that a virus infects; the virus uses the cell to make copies of itself

pediatrician (*noun*) a doctor who cares for babies and children

positive (*adjective*) showing something (such as a disease) to be present

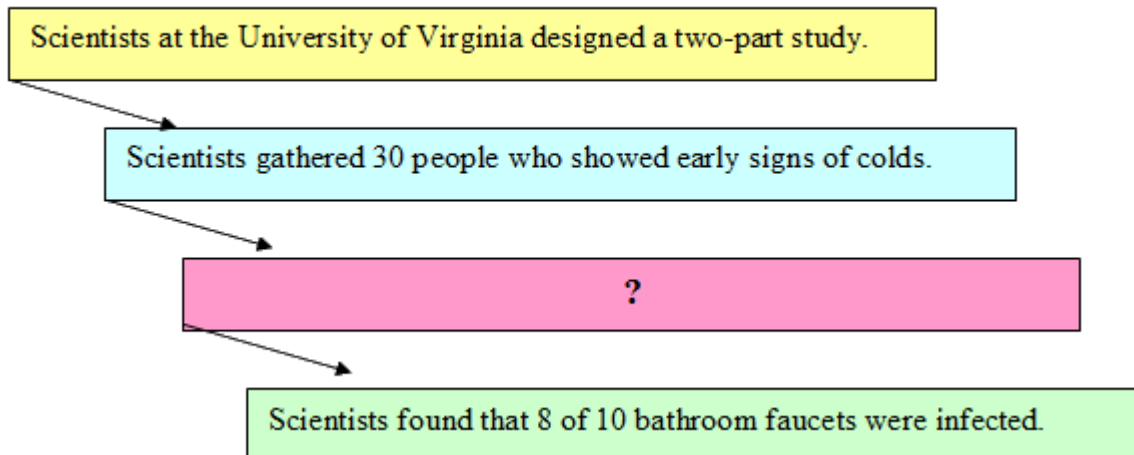
virus (*noun*) a nonliving particle that causes disease; it uses the materials inside cells to make copies of itself

Activity

PART 1

Question 1

What Happened Next?



Which best replaces the question mark in the box above?

This question asks about when events happened. It does not ask where in the article the events appear. Look back at the article for clues, such as dates.

- Ⓐ People were found to have the rhinovirus on their fingertips.
- Ⓑ Scientists wiped various surfaces in people's homes with germs.
- Ⓒ Scientists discovered 16 people who tested positive for the rhinovirus.
- Ⓓ People went about their day as usual, including answering phones.

Question 2

According to the article, why did scientists in the study wipe various household surfaces with people's germs?

- Ⓐ To determine how long the viruses remained on the various surfaces
- Ⓑ To determine if frequent hand washing can prevent the spread of germs
- Ⓒ To determine which types of germs are transferable on kitchen surfaces
- Ⓓ To determine which hand cleaning products prevent the spread of germs

Question 3

Which is the closest **synonym** for the word *frequent*?

- (A) Regular
- (B) Recent
- (C) Ridiculous
- (D) Rugged

Question 4

The article talks mainly about _____.

- (A) Ways that people can protect themselves from the spread of rhinovirus germs
- (B) Common household surfaces that are most likely to harbor rhinovirus germs
- (C) A recent study that proved how hand cleaning products halt the spread of germs
- (D) A recent study that attempted to help scientists learn more about the spread of germs

Question 5

The article states:

The 16 adults went about their day as usual. They turned on lights. They answered the telephone.

Which would be the closest **synonym** for the word *usual*?

- (A) Physical
- (B) Social
- (C) Civil
- (D) Normal

Question 6

Which of these is a statement of opinion?

- (A) The rhinovirus is the virus responsible for about half of all colds.
- (B) Everyone should wash their hands often to prevent the spread of germs.
- (C) All of the salt shakers scientists tested were harboring the rhinovirus.
- (D) Scientists found that cold sufferers often leave their germs on common surfaces around the house.

Question 7

The news article says all of the following **except** _____.

- (A) Cold sufferers often leave their germs on common surfaces around the house.
- (B) Children are more likely to come in contact with rhinovirus germs than adults are.
- (C) Some experts suggest using face masks as protection against the spread of germs.
- (D) Scientists at the University of Virginia ran a two-part study of rhinovirus germs.

Question 8

The author most likely wrote this article in order to _____.

- Ⓐ Convince readers that hand washing is the best way to stop the spread of germs
- Ⓑ Urge cold sufferers to wear face masks in order to prevent the spread of germs
- Ⓒ Explain why many household surfaces are likely to harbor transferable germs
- Ⓓ Inform readers of the findings from a recent study of the spread of household germs