A Short information about coronavirus

What to know about coronaviruses?

- Definition
- Symptoms
- Types
- Transmission
- COVID-19
- SARS
- MERS

Coronaviruses are types of viruses that typically affect the respiratory tracts of birds and mammals, including humans. Doctors associate them with the common cold, bronchitis, pneumonia, and severe acute respiratory syndrome (SARS), and they can also affect the gut.

These viruses are typically responsible for common colds more than serious diseases. However, coronaviruses are also behind some more severe outbreaks.

Over the last 70 years, scientists have found that coronaviruses can infect mice, rats, dogs, cats, turkeys, horses, pigs, and cattle. Sometimes, these animals can transmit coronaviruses to humans.

Most recently, authorities identified a new coronavirus outbreak in China that has now reached other countries. It has the name coronavirus disease 2019, or COVID-19.

In this article, we explain the different types of human coronaviruses, their symptoms, and how people transmit them. We also focus on three particularly dangerous diseases that have spread due to coronaviruses: COVID-19, SARS, and MERS.

What is a coronavirus?

Covering the mouth when sneezing may help stop the spread of coronaviruses.

Researchers first isolated a coronavirus in 1937. They found a coronavirus responsible for an infectious bronchitis virus in birds that had the ability to devastate poultry stocks.

Scientists first found evidence of human coronaviruses (HCoV) in the 1960s in the noses of people with the common cold. Two human coronaviruses are responsible for a large proportion of common colds: OC43 and 229E.

The name “coronavirus” comes from the crown-like projections on their surfaces. “Corona” in Latin means “halo” or “crown.”

Among humans, coronavirus infections most often occur during the winter months and early spring. People regularly become ill with a cold due to a coronavirus and may catch the same one about 4 months later.

This is because coronavirus antibodies do not last for a long time. Also, the antibodies for one strain of coronavirus may be ineffective against another one.

Symptoms

Cold- or flu-like symptoms usually set in from 2–4 days after a coronavirus infection and are typically mild. However, symptoms vary from person-to-person, and some forms of the virus can be fatal.

Symptoms include:

- sneezing
- runny nose
- fatigue
- cough
- fever in rare cases
- sore throat
- exacerbated asthma

Scientists cannot easily cultivate human coronaviruses in the laboratory unlike the rhinovirus, which is another cause of the common cold. This makes it difficult to gauge the impact of the coronavirus on national economies and public health.

There is no cure, so treatments include self-care and over-the-counter (OTC) medication. People can take several steps, including:

- resting and avoiding overexertion
- drinking enough water
- avoiding smoking and smoky areas
- taking acetaminophen, ibuprofen, or naproxen for pain and fever
- using a clean humidifier or cool mist vaporizer

A doctor can diagnose the virus responsible by taking a sample of respiratory fluids, such as mucus from the nose, or blood.

Types

Coronaviruses belong to the subfamily *Coronavirinae* in the family *Coronaviridae*.

Different types of human coronaviruses vary in how severe the resulting disease becomes, and how far they can spread.

Doctors currently recognize seven types of coronavirus that can infect humans.

Common types include:

- 229E (alpha coronavirus)
- NL63 (alpha coronavirus)
- OC43 (beta coronavirus)
- HKU1 (beta coronavirus)

Rarer strains that cause more severe complications include MERS-CoV, which causes Middle East respiratory syndrome (MERS), and SARS-CoV, the virus responsible for severe acute respiratory syndrome (SARS).

In 2019, a dangerous new strain called SARS-CoV-2 started circulating, causing the disease COVID-19.

Transmission

Limited research is available on how HCoV spreads from one person to the next.

However, researchers believe that the viruses transmit via fluids in the respiratory system, such as mucus.

Coronaviruses can spread in the following ways:

- Coughing and sneezing without covering the mouth can disperse droplets into the air.
- Touching or shaking hands with a person who has the virus can pass the virus between individuals.
- Making contact with a surface or object that has the virus and then touching the nose, eyes, or mouth.

- Some animal coronaviruses, such as feline coronavirus (FCoV), may spread through contact with feces. However, it is unclear whether this also applies to human coronaviruses.

The National Institutes of Health (NIH) suggest that several groups of people have the highest risk of developing complications due to COVID-19. These groups include:

- young children
- people aged 65 years or older
- women who are pregnant

Coronaviruses will infect most people at some time during their lifetime.

Coronaviruses can mutate effectively, which makes them so contagious.

To prevent transmission, people should stay at home and rest while symptoms are active. They should also avoid close contact with other people.

Covering the mouth and nose with a tissue or handkerchief while coughing or sneezing can also help prevent transmission. It is important to dispose of any tissues after use and maintain hygiene around the home.

COVID-19

In 2019, the Centers for Disease Control and Prevention (CDC) started monitoring the outbreak of a new coronavirus, SARS-CoV-2, which causes the respiratory illness now known as COVID-19. Authorities first identified the virus in Wuhan, China.

More than 74,000 people have contracted the virus in China. Health authorities have identified many other people with COVID-19 around the world, including many in the United States. On January 31, 2020, the virus passed from one person to another in the U.S.

The World Health Organization (WHO) have declared a public health emergency relating to COVID-19.

Since then, this strain has been diagnosed in several U.S. residents. The CDC have advised that it is likely to spread to more people. COVID-19 has started causing disruption in at least 25 other countries.

The first people with COVID-19 had links to an animal and seafood market. This fact suggested that animals initially transmitted the virus to humans. However, people with a more recent diagnosis had no connections with or exposure to the market, confirming that humans can pass the virus to each other.

Information on the virus is scarce at present. In the past, respiratory conditions that develop from coronaviruses, such as SARS and MERS, have spread through close contacts.

On February 17, 2020, the Director-General of the WHO presented at a media briefing the following updates on how often the symptoms of COVID-19 are severe or fatal, using data from 44,000 people with a confirmed diagnosis:

Stage of severity	**Rough percentage of people with COVID-19**
Mild disease from which a person can recover	More than 80%
Severe disease, causing breathlessness and pneumonia	Around 14%
Critical disease, including septic shock, respiratory failure, and the failure of more than one organ	About 5%
Fatal disease	2%

The Director-General also noted that the risk of serious complications increases with age. According to the WHO, few children get COVID-19, although they are still investigating the reasons for this.

However, while some viruses are highly contagious, it is less clear how rapidly coronaviruses will spread.

Symptoms vary from person-to-person with COVID-19. It may produce few or no symptoms. However, it can also lead to severe illness and may be fatal. Common symptoms include:

- fever
- breathlessness
- cough

It may take 2–14 days for a person to notice symptoms after infection.

No vaccine is currently available for COVID-19. However, scientists have now replicated the virus. This could allow for early detection and treatment in people who have the virus but are not yet showing symptoms.

SARS

SARS was a contagious disease that developed after infection by the SARS-CoV coronavirus. Typically, it led to a life threatening form of pneumonia.

During November 2002, the virus started in the Guangdong Province in southern China, eventually reaching Hong Kong. From there, it rapidly spread around the world, causing infections in more than 24 countries.

SARS-CoV can infect both the upper and lower respiratory tracts.

The symptoms of SARS develop over the course of a week and start with a fever. Early on in the condition, people develop flu-like symptoms, such as:

- dry coughing
- chills
- diarrhea

- breathlessness
- aches

Pneumonia, a severe lung infection, usually develops. At its most advanced stage, SARS causes failure of the lungs, heart, or liver.

According to the CDC, authorities marked 8,098 people as having contracted SARS. Of these, 774 infections were fatal. This equates to a mortality rate of 9.6%.

Complications were more likely in older adults, and half of all people over 65 years of age who became ill did not survive. Authorities eventually controlled SARS in July 2003.

MERS

MERS spread due to the coronavirus known as MERS-CoV. Scientists first recognized this severe respiratory illness in 2012 after it surfaced in Saudi Arabia. Since then, it has spread to other countries.

The virus has reached the U.S., while the largest outbreak outside the Arabian Peninsula occurred in South Korea in 2015.

Symptoms of MERS include fever, breathlessness, and coughing. The illness spreads through close contact with people who already have an infection. However, all cases of MERS have links to individuals recently returning from travel to the Arabian Peninsula.

A 2019 study on MERS found that the disease is fatal in 35.2% of people who contract it.