Centers for Disease Control and Prevention

Basics of COVID-19

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CDC is reviewing this page to align with updated guidance.

About COVID-19

COVID-19 (coronavirus disease 2019) is a disease caused by a virus named SARS-CoV-2 and was discovered in December 2019 in Wuhan, China. It is very contagious and has quickly spread around the world.

COVID-19 most often causes respiratory symptoms that can feel much like a cold, a flu, or pneumonia. COVID-19 may attack more than your lungs and respiratory system. Other parts of your body may also be affected by the disease.

- Most people with COVID-19 have mild symptoms, but some people become severely ill.
- Some people including those with minor or no symptoms may suffer from post-COVID conditions — or "long COVID".
- Older adults and people who have certain underlying medical conditions are at increased risk of severe illness from COVID-19.
- Hundreds of thousands of people have died from COVID-19 in the United States.
- Vaccines against COVID-19 are safe and effective. Vaccines teach our immune system to fight the virus that causes COVID-19.

About SARS-CoV-2, the virus that causes COVID-19

COVID-19 is caused by a virus called SARS-CoV-2. It is part of the coronavirus family, which include common viruses that cause a variety of diseases from head or chest colds to more severe (but more rare) diseases like severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).

Like many other respiratory viruses, coronaviruses spread quickly through droplets that you project out of your mouth or nose when you breathe, cough, sneeze, or speak.

The word corona means crown and refers to the appearance that coronaviruses get from the spike proteins sticking out of them. These spike proteins are important to the biology of this virus. The spike protein is the part of the virus that attaches to a human cell to infect it, allowing it to replicate inside of the cell and spread to other cells. Some antibodies can protect you from SARS-CoV-2 by targeting these spike proteins. Because of the importance of this specific part of the virus, scientists who sequence the virus for research constantly monitor mutations causing changes to the spike protein through a process called genomic surveillance.

As genetic changes to the virus happen over time, the SARS-CoV-2 virus begins to form genetic lineages. Just as a family has a family tree, the SARS-CoV-2 virus can be similarly mapped out. Sometimes branches of that tree have different attributes that change how fast the virus spreads, or the severity of illness it causes, or the effectiveness of treatments against it. Scientists call the viruses with these changes "variants". They are still SARS-CoV-2, but may act differently.

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