

5 Questions (and Answers) About mRNA COVID-19 Vaccines



Which vaccines use mRNA?

Messenger ribonucleic acid (mRNA) vaccines are the first COVID-19 vaccines authorized for use in the United States by the U.S. Food and Drug Administration (FDA). Read their study descriptions:

- A Study to Evaluate Efficacy, Safety, and Immunogenicity of mRNA-1273 Vaccine in Adults Aged 18 Years and Older to Prevent COVID-19 ([led by Moderna](#))
- Study to Describe the Safety, Tolerability, Immunogenicity, and Efficacy of RNA Vaccine Candidates Against COVID-19 in Healthy Individuals ([led by Pfizer and BioNTech](#))

Will an mRNA vaccine give me COVID-19?

No. The vaccines being used to prevent COVID-19 in the United States can't make someone sick with the disease. None of the vaccines contain whole or live SARS-CoV-2, the virus that causes COVID-19. Getting vaccinated helps protect you by creating an antibody (immune system) response without getting you sick.

People who join ongoing vaccine trials may be exposed to SARS-CoV-2 in their everyday lives, but not as a part of vaccine research.

How do these vaccines work?

Every type of mRNA carries information to cells about how to make a substance called a protein. **The mRNA in the vaccine carries instructions that teach our cells how to make a protein found on the surface of SARS-CoV-2.** When the white blood cells of our immune system see the viral protein made by our own cells, they make antibodies to the real SARS-CoV-2. Those

antibodies are then standing by to act like tiny missiles that seek and destroy the virus if it shows up in the body.

What are the side effects of these vaccines?

Side effects from vaccines are usually mild and don't last long. Common side effects are discomfort where the injection is given, tiredness, headaches, chills, mild fever, nausea, and muscle or joint aches that may last for a few days.

The United States requires that side effects be tracked, monitored, and reported to ensure continued safety throughout the testing of vaccine. The FDA will authorize or approve a new vaccine only if it is effective and does not cause serious side effects. The FDA will continue

Facts About COVID-19 mRNA Vaccines

They cannot give someone COVID-19.

- mRNA vaccines do not use the live virus that causes COVID-19.

They do not affect or interact with our DNA in any way.

- mRNA never enters the nucleus of the cell, which is where our DNA (genetic material) is kept.
- The cell breaks down the mRNA soon after it is finished using the mRNA's instructions to make the viral protein that will trigger the body to make antibodies against the virus.

[Learn more about mRNA vaccines from CDC.](#)

to monitor for potential side effects long after authorization and approval to make sure the vaccines continue to be safe and effective for everyone using them. If it becomes clear through continued monitoring that a vaccine causes serious side effects for some people—such as older people or those with underlying health conditions—federal health officials can issue new guidance limiting the use of the vaccine to other groups. If it is determined that potential risks from a vaccine outweigh its benefits, it will be taken off the market. **Safety is the top priority in the development of vaccines, from beginning to end.**

Why should I get a vaccine for COVID-19?

1. **COVID-19 vaccination will help keep you from getting COVID-19.** Based on what we know about the approved vaccines' data from clinical trials, experts believe that receiving a COVID-19 vaccine may also help keep you from getting seriously ill even if you do get COVID-19. Your

vaccination also protects others around you, [particularly people at increased risk for severe illness from COVID-19.](#)

2. **COVID-19 vaccination is a safer way to help build protection.** COVID-19 can cause [serious, life-threatening health problems.](#) There is no way to know how COVID-19 will affect you. And if you get sick, you could spread the disease to friends, family, and others around you. While getting COVID-19 may offer some natural protection or immunity, the risk of severe illness and death from COVID-19 is far greater than any benefits of natural immunity.

3. **COVID-19 vaccination will be an important tool to help stop the pandemic.** Getting vaccinated and continuing to follow the Centers for Disease Control and Prevention (CDC) [recommendations for mask-wearing, hand-washing, and physical distancing](#) offers the best protection from COVID-19 for yourself and others.

Learn more about vaccines at <https://covid19community.nih.gov/resources/learning-about-vaccines>.