



Understanding the mRNA COVID-19 Vaccine

Vaccines for COVID-19 are available. What do you need to know about getting a COVID-19 vaccine? What can you expect after you get it? Read on to learn more.

mRNA COVID-19 vaccine fast facts

- Two mRNA vaccine choices are available: Pfizer and Moderna.
- The vaccine is given as a shot in a muscle in your upper arm.
- The mRNA vaccine does not use live, dead, or weak COVID virus.
- The vaccine will not give you COVID-19.
- Side effects of the vaccine mean your immune system is working, not that you have the virus.
- You will need 2 doses of the vaccine, at least 3 weeks apart.
- People with a very weak immune system may not build up enough antibodies to fight COVID-19 after getting the first 2 doses of the 2-dose vaccine. This includes people who have had a solid organ transplant or who have a condition such as cancer that can cause a very weak immune system. For these people, an extra dose of the vaccine is advised. This extra dose is part of their vaccine series (primary series), not a booster. The extra shot is given at least 28 days after the second dose. Talk with your healthcare provider about your own case and risk.
- CDC recommends people ages 65 and older, people living in long-term care settings, and people ages 50 to 64 with certain health conditions get a **Pfizer booster shot** at least 6 months after the last dose of their primary series.
- Other adults older than 18 **may choose** to get a Pfizer booster shot based on risk. Talk with your provider about your risk.
- The FDA is exploring booster doses of the other types of COVID-19 vaccines, including Moderna. No final recommendation has been made.

What does the COVID-19 vaccine do?

The COVID-19 vaccine has been shown to work well to prevent symptomatic COVID-19 illness. Getting a COVID-19 vaccine can help protect you and your family from getting ill from the virus. If you get the virus after you get the vaccine, it may help your symptoms be milder. The COVID-19 vaccine may also help protect people around you from getting the infection.

COVID-19 vaccines may also lead to more widespread changes. The more people who get the COVID-19 vaccine, the less likely the virus will be able to spread in the community. This is

called "herd immunity" or "community immunity." As more people get the vaccine, local and regional policies may be able to change about what types of businesses can be open and how people can gather together.

Schools may back in session in person faster. Workplaces may reopen. Events may be allowed, travel may resume for many people, and it may be easier to see family and friends.

Should I get a COVID-19 vaccine?

The most important thing to do is talk with your healthcare provider. mRNA vaccines are approved to protect people against COVID-19, including those who are pregnant or breastfeeding. One vaccine is approved for people as young as 12. Talk with your healthcare provider about your risks and which vaccine may be best for you and your family.

People who have had COVID-19 may still benefit from the vaccine. Researchers don't yet exactly know how long natural immunity lasts after you have COVID-19. Your healthcare provider may advise you to get the vaccine if you had COVID-19 more than 90 days ago.

Tell your healthcare provider if you have ever had a severe allergic reaction to food or medicine. Talk with them about your risks if you carry an epinephrine autoinjector. This may affect your provider's advice to you about the vaccine.

How does an mRNA COVID-19 vaccine work?

The COVID-19 mRNA vaccines are different from traditional vaccines. They're not made with live, dead, or weak virus. Instead, they're made with messenger ribonucleic acid (mRNA). This is a type of molecule that gives instructions for how to make different kinds of proteins. mRNA molecules are a natural part of our cells and how our bodies work.

The mRNA in the vaccines tells your cells how to make a harmless piece of a protein called a spike protein. This protein is found on the outside of the SARS-CoV-2 virus that causes COVID-19. Your immune system sees this spike protein as a threat, and creates antibodies and other defenses against it.

This will help your body's immune system recognize and fight the real virus if it ever shows up. It's kind of like recognizing someone by the hat they wear. Your body is then prepared to spot COVID-19 and fight it off before it grows in your body's cells.

How were the COVID-19 vaccines approved for safety?

The COVID-19 mRNA vaccines have passed many tests in labs and in thousands of people, and meet strict standards from the FDA.

The vaccines were tested first in animals. They were then tested in a series of clinical trials that included thousands of people. All of the data from these tests was collected and submitted to the

FDA and other scientific groups. These committees of scientists and public health experts carefully look at the data to see if a vaccine is safe and effective. If the vaccine meets the FDA's strict standards of safety and quality, the agency tells the vaccine company they can make the vaccine for emergency use.

How is this vaccine ready so quickly?

Researchers have been working with mRNA vaccines for many years. They are made more easily and safely in a lab than a vaccine that uses a virus. Because of this, they can also be made faster.

Vaccines have typically taken longer to be approved and come to market. But over many years of creating vaccines, research groups and public health agencies have been making the vaccine process work faster. For COVID-19, a special program called Operation Warp Speed (OWS) was created to help get COVID-19 vaccines ready even more quickly.

OWS is a partnership of the U.S. Department of Health and Human Services, the U.S. Department of Defense, and many medical research and manufacturing groups. These organizations agreed to work together as closely as possible to communicate and move through a robust process to develop safe COVID-19 vaccines more quickly. .

How much does the vaccine cost?

The U.S. government is providing the vaccine **free** to U.S. residents. But the site where you get your vaccine may bill your health insurer for giving you the vaccine. Talk with your health insurer, local pharmacy, employer, or healthcare provider to find out more about a possible fee. You can't be denied a vaccine if you don't have health insurance or can't pay the fee yourself.

Getting the mRNA COVID-19 vaccine

The vaccine is given as a shot in a muscle in your upper arm. You will need to have 2 doses, spaced 21 days or more apart. You'll need both of these doses to get the best COVID-19 protection from the vaccine.

People with a moderately or severely weak immune system may not build up enough antibodies to fight COVID-19 after getting the first 2 doses of the vaccine. They may need an extra dose.. This includes people who have had a solid organ transplant or who have a condition that causes a very weak immune system. The extra dose is given at least 28 days after the second dose. Talk with your healthcare provider about your situation and risk.

Follow instructions from the healthcare staff. Tell the staff if you have ever had a severe allergic reaction to food or medicine, or carry an epinephrine autoinjector. Tell them if you feel any reaction after you have the shot. You may be asked to stay for some time after getting the vaccine so you can be monitored.

Side effects: What to expect

The vaccine will have side effects for some people. A vaccine activates a person's immune system. It causes the immune system to create antibodies to fight off a specific virus or bacteria. When your immune system goes into action, you may feel your immune system kick into gear as though it's fighting an illness. This does not mean you are infected with an illness. It means that your immune system is working.

People in the COVID-19 vaccine trials commonly had soreness where the shot was given, tiredness, headaches, muscle and joint aches, chills, and fever for a day or two. Fewer people had redness and swelling at the injection site. These are all signs that your immune system is working on its defense. You can get these kinds of effects after many kinds of vaccines. But these symptoms should last a short time. In comparison, COVID-19 symptoms can be severe and last much longer, and cause complications, long-term illness, and death. The FDA approval process makes sure that the discomfort and risks of a vaccine outweigh the risks and complications of the illness it helps prevent.

Allergic reactions

In general, the COVID-19 vaccines are very safe. They have been tested on thousands of people. **Non-severe allergic reactions** have happened in a few people up to 4 hours after getting the vaccine. The vaccine clinic may ask you to stay on-site for a period of time after you get the vaccine. This is to make sure you don't have an immediate reaction.

Talk with your healthcare provider before you get a COVID-19 vaccine. Tell them if you have ever had an immediate reaction to any vaccine, even if the reaction was not severe. Your provider will help you weigh the risks and benefits of the COVID-19 vaccine for you.

If you have an allergy to any ingredient in the mRNA COVID-19 vaccine, the CDC advises that you not get the vaccine. If you have had 1 dose of COVID-19 vaccine and you have an immediate allergic reaction, the CDC advises that you not get the second dose.

The CDC has a smartphone app called V-Safe to help you report side effects. The app will also send you reminders if you need a second vaccine dose. To access this app, see "To learn more" below.

Severe symptoms

If you get a COVID-19 vaccine and think you may be having a severe allergic reaction after leaving the vaccine clinic, call 911. Severe symptoms include:

- Trouble breathing
- Wheezing
- Trouble swallowing or feeling like your throat is closing
- Cool, moist, pale, or blue-tinted skin
- Hoarse voice or trouble speaking

- Chest pain
- Fainting
- Swelling in the eyes, mouth, face, or tongue
- Seizure
- Feeling very drowsy or having trouble awakening
- Fast heart rate
- Nausea, vomiting, diarrhea, stomach cramps, or abdominal pain

After you get the COVID-19 vaccine

When you get both doses of the vaccine:

- **It's still possible to get COVID-19.** Like most vaccines, the COVID-19 vaccines are not 100% effective at preventing the disease. You should still take care to prevent contact with sick people and follow local advice about staying safe.
- Follow your local, state, and national instructions about wearing a mask and social distancing. Check the most current [CDC guidelines](#) .

Talking with your healthcare provider

You may have a lot of questions about the vaccine for yourself. Should you get it? If so, when? What are the risks and benefits to you? The best way to answer these questions is to talk with your healthcare provider. They can let you know when and what kind of vaccine is available, and what you should consider.

To learn more

- [CDC: COVID-19 Vaccines](#)
- [FDA: COVID-19 Vaccines](#)
- [V-Safe After Vaccination Health Checker](#)

Date last modified: 9/24/2021