COVID-19
Vaccine Guidebook

Get the facts. Get the vaccine. **Get back to business.**

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Introduction

Millions of people have safely received a COVID-19 vaccine, but that doesn't mean you don't have questions about the different kinds of vaccines, effectiveness, and side effects. There's a wealth of information out there, and a lot of misinformation, too. We understand it can be hard to sort through it all. That's why we've created this guide — to help walk you through solid, factual information about the COVID-19 vaccine.

While our information is current, updates are occurring frequently. In addition to this guide, visiting **cdc.gov** will provide the most up-to-date information.

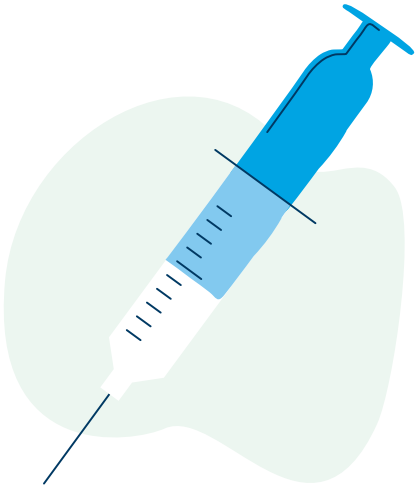
Why get vaccinated?

It protects you. The biggest reason to get vaccinated is to protect you and those you care about from serious illness or death. **Each of the different vaccines are nearly 100% effective at preventing hospitalization and death from COVID-19.**

It's safe. COVID-19 vaccines were evaluated in tens of thousands of participants in clinical trials. The vaccines met the FDA's rigorous scientific standards for safety, effectiveness, and manufacturing quality needed to support emergency use authorization (EUA). To date, one vaccine has received full FDA approval with others pending FDA review.

It's been inclusively tested. More than 100,000 people from diverse backgrounds and ethnicities participated in the vaccine trials.*

Pfizer and Moderna worked hard to increase the participation of populations at highest risk for COVID-19. The COVID-19 vaccine trials were more diverse than many clinical trials in the past.

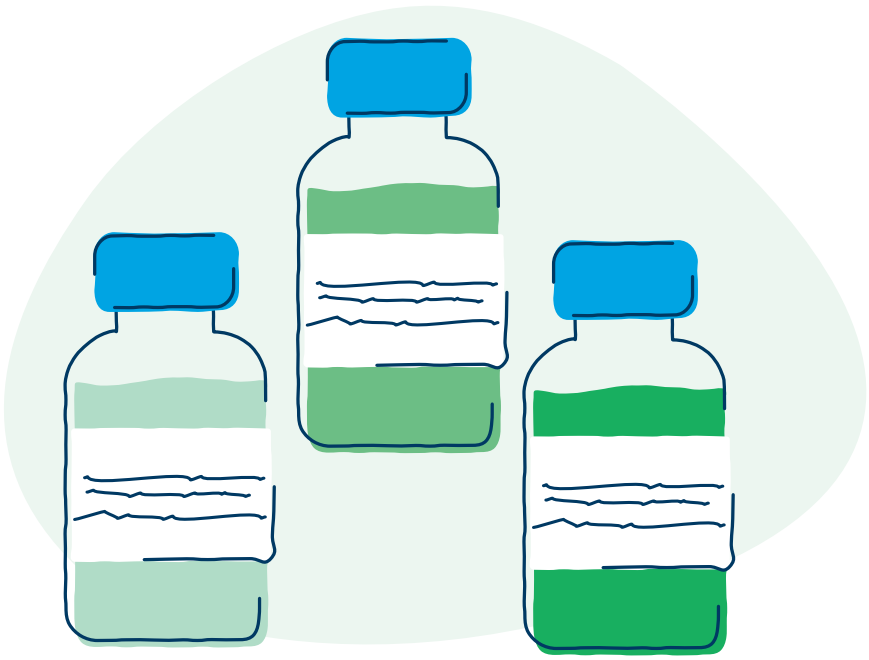


To schedule a COVID-19 vaccine, start by calling your local pharmacy.

You can also visit **www.vaccines.gov** for help finding a convenient location.

Comparing vaccines

There are three COVID-19 vaccines approved for use in the U.S.: Comirnaty, Moderna, and Johnson & Johnson. All of them are effective at preventing hospitalization or death from COVID-19, but they each work a little differently. This guide will help you compare vaccines and find the right one for you.



Comirnaty

(formerly known as Pfizer-BioNTech)
In August, 2021, the FDA approved the first COVID-19 vaccine. The Pfizer-BioNTech vaccine will now be marketed as Comirnaty. The vaccine is up to 95% effective at preventing symptomatic disease. The vaccine continues to be available under emergency use authorization for children 12-15.

DOSAGE:

Two shots,
21 days apart

12+

RECOMMENDED FOR:

Anyone 12 and older

How well it works

It has 95% efficacy in preventing COVID-19 in those without prior infection. The vaccine is equally effective across a variety of different types of people and variables, including age, gender, race, ethnicity, and body mass index (BMI) — or presence of other medical conditions. In clinical trials, the vaccine was 100% effective at preventing severe disease.

How well it works on virus mutations

In early May, the Comirnaty vaccine was found to be more than 95% effective against severe disease or death from the variants first detected in the United Kingdom (B.1.1.7, or the Alpha variant) and South Africa (B.1.351, or the Beta variant) in two studies based on real-world use of the vaccine.

How it works

This is a messenger RNA (mRNA) vaccine, which uses a relatively new technology. Unlike vaccines that put a weakened or inactivated disease germ into the body, the Comirnaty mRNA vaccine delivers a tiny piece of genetic code from the SARS CoV-2 virus to host cells in the body, giving those cells instructions. These proteins stimulate an immune response, producing antibodies and developing memory cells that will recognize and respond if the body is infected with the actual virus. Researchers have previously studied mRNA vaccines for flu, zika, rabies, and cytomegalovirus (CMV).

Common side effects

Chills, headache, pain, tiredness, and/or redness and swelling at the injection site may occur, all of which generally resolve within a day or two of rest, hydration, and medications like acetaminophen. (If symptoms don't resolve within 72 hours or if you have respiratory symptoms such as cough or shortness of breath, call your doctor.) On rare occasions, mRNA vaccines have appeared to trigger anaphylaxis, a severe reaction that is treatable with epinephrine (the drug in Epipens®). For that reason, the Centers for Disease Control and Prevention (CDC) requires vaccination sites to monitor everyone for 15 minutes after their COVID-19 shot, and for 30 minutes if they have a history of severe allergies or are taking a blood thinner.

Moderna

Moderna is also an mRNA vaccine, using the same technology as the Comirnaty one, and with a similarly high efficacy (94.1%).

The Moderna vaccine is highly effective — 94% in people 18 to 65, and 86% in people 65 and older.

DOSAGE:

Two shots,
28 days apart

18+

RECOMMENDED FOR:

Adults 18 and older

How well it works

It is 94.1% effective at preventing symptomatic infection in people with no evidence of previous COVID-19 infection. The vaccine appeared to have high efficacy in clinical trials among people of diverse age, sex, race, and ethnicity categories, and among persons with underlying medical conditions (although as mentioned above, the efficacy rate drops to 86.4% for people ages 65 and older).

How well it works on virus mutations

Some research has suggested that Moderna's vaccine may provide protection against the Alpha and Beta variants. Researchers are still studying this.

How it works

Similar to the Comirnaty vaccine, this is an mRNA vaccine that sends the body's cells instructions for making a specialized protein that will train the immune system to recognize it. The immune system will then attack the spike protein if it encounters it as a live virus.

Common side effects

Chills, headache, pain, tiredness, and/or redness and swelling at the injection site may occur, all of which generally resolve within a day or two. On rare occasions, mRNA vaccines have appeared to trigger anaphylaxis, a severe reaction that is treatable with epinephrine (the drug in Epipens®). For that reason, the CDC requires vaccination sites to monitor everyone for 15 minutes after their COVID-19 shot, and for 30 minutes if they have a history of severe allergies.

Johnson & Johnson

On February 27, 2021, the FDA granted emergency use approval for a different type of vaccine called a carrier, or virus vector, vaccine. This vaccine requires only one shot.

DOSAGE:

One shot. In November, Johnson & Johnson announced it would launch a second Phase 3 clinical trial to study using two doses, two months apart, to see if that regimen will provide better protection.

18+

RECOMMENDED FOR:

Adults 18 and older.

How well it works

The Johnson & Johnson vaccine uses the more traditional virus-based technology. It has 72% overall efficacy and 86% efficacy against severe disease in the U.S.

Update: The FDA added a warning that Johnson & Johnson's COVID-19 vaccine may trigger **Guillain-Barré syndrome (GBS)** in a small number of people. Of the 12.5 million Americans who received this vaccine, about 100 people reported having GBS in the Vaccine Adverse Event Reporting System (VAERS).

How well it works on virus mutations

This vaccine's effectiveness has been shown to offer protection against the Alpha variant. According to the analyses the FDA released in late February, there was 64% overall efficacy and 82% efficacy against severe disease in South Africa, where the Beta variant was first detected. **Johnson & Johnson's single-dose COVID-19 vaccine was found to be effective** against the extremely contagious delta variant, based on results from two studies published on the preprint server bioRxiv.

How it works

This is a carrier vaccine, which uses the same virus-based technology as the flu vaccine. It's a different approach than the mRNA vaccine. Scientists engineer a harmless adenovirus as a shell to carry a genetic code on the spike proteins to the body's cells. The shell and code can't make you sick, but once it is inside the cells, the cells produce a spike protein to train the body's immune system. This creates antibodies and memory cells to protect against an actual COVID-19 infection.

Common side effects

Fatigue, fever headache, injection site pain, or myalgia (pain in a muscle or group of muscles) may occur, all of which generally resolve within a day or two. It has had noticeably milder side effects than the Comirnaty and Moderna vaccines according to the FDA report released in late February. No one suffered an allergic reaction in clinical trials for the vaccine, according to Johnson & Johnson.

Vaccine FAQs

Are the COVID-19 vaccines safe?

All FDA-authorized COVID-19 vaccines available in the United States meet the FDA's rigorous standards for safety and effectiveness. More than 300 million COVID-19 vaccine doses have been administered in the United States and will be continually monitored for safety.

How new is the science that led to COVID-19 vaccines?

The technology that was new to vaccines had been studied for two decades. Safe COVID-19 vaccines were developed quickly through the use of a century of vaccine experience.

How was the vaccine developed and approved so quickly?

Tens of thousands of clinical trial volunteers enabled rapid accumulation of data. Additionally, simultaneous vaccine production and analysis of testing data also allowed vaccines to be shipped within days of being authorized by the FDA.

Will the shot hurt or make me sick?

Each shot has it's own risk of side effects, but generally speaking, some people might get sore muscles, feel tired, or have mild fever after getting the vaccine. However, most people report only a sore arm where they got the shot.

If I have a reaction does it mean I have COVID-19?

Vaccine reactions mean the vaccine is working to help teach your body how to fight COVID-19 if you are exposed. For most people, these side effects will go away on their own in a few days. Call your doctor with any concerns.

Why are people having allergic reactions to the COVID-19 vaccine?

As with any vaccine, a small number of people have had allergic reactions called anaphylaxis after getting a COVID-19 vaccine. However, these individuals were treated and have recovered. Talking to your doctor can help you decide if it's safe for you to be vaccinated.

Will I need a COVID-19 booster shot?

We don't know yet, but it's possible. Research is ongoing. It will depend on how long initial protection lasts and viral variants' ability to overcome vaccine-based immunity.

FAQs about pregnancy and the COVID-19 vaccine.

Is it safe to get the COVID-19 vaccine if I'm pregnant?

Experts believe, based on what they know about how vaccines work, that the COVID-19 vaccine is unlikely to pose a risk to pregnant women. Because pregnant women haven't been included in research conducted so far, there's limited safety data. But there's no evidence that the vaccine has any negative effects on pregnant women or their babies. Vaccine trials that include pregnant women are underway.

If you get COVID-19 while pregnant, you have an increased risk of becoming severely ill, though the overall risk of this happening is low. Contracting COVID-19 during pregnancy also increases the risk of preterm birth and other health issues that could adversely affect you or your baby.

If you're undecided about whether to get vaccinated, talk to your healthcare provider. Together you can make a decision that's right for you.

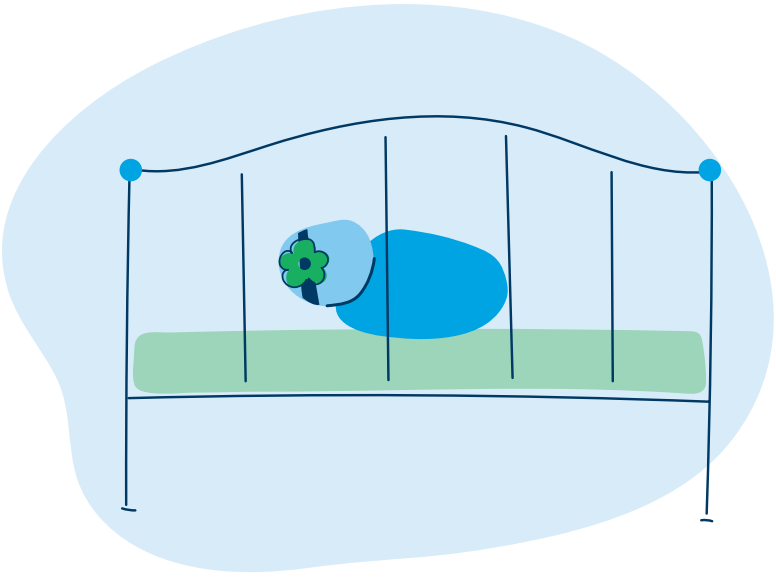
Can I continue to breastfeed if I get the COVID-19 vaccine?

There have been no clinical trials so far that have included women who are breastfeeding. Based on how these vaccines work in the body, experts believe it's safe for women to continue nursing after receiving the vaccine.

Recent reports have found that nursing women who received COVID-19 mRNA vaccines have antibodies in their breastmilk, which could help protect their babies.

Is it safe for me to get a COVID-19 vaccine if I would like to have a baby one day?

There is no evidence that the COVID-19 vaccine causes any problems with fertility.



Vaccine myths

There is a lot of misinformation circulating about the COVID-19 vaccine. But trust the experts — the vaccine is safe. **Here are just a few vaccine myths.**

Can receiving a COVID-19 vaccine cause you to be magnetic?

The COVID-19 vaccine won't make you magnetic. All COVID-19 vaccines are free of metals such as iron, nickel, cobalt, lithium, and rare earth alloys. They also do not contain manufactured products such as microelectronics, electrodes, carbon nanotubes, and nanowire semiconductors. And consider this: A COVID-19 vaccine dose is less than a milliliter, which is not enough to allow magnets to be attracted to your vaccination site even if the vaccine was filled with magnetic metal.

Will a COVID-19 vaccine alter my DNA?

COVID-19 vaccines do not change or interact with your DNA in any way. The vaccine material cannot enter the nucleus of your cells, which is where DNA is kept. This means the genetic material in the vaccines cannot affect or interact with DNA in any way. All COVID-19 vaccines work with the body's natural defenses to safely develop immunity to disease.

Do any of the COVID-19 vaccines shed or release any of their components?

Vaccine shedding can only occur when a vaccine contains a weakened version of the virus. None of the vaccines authorized for use in the United States contain a live virus.

Will getting a COVID-19 vaccine cause me to test positive for COVID-19 on a viral test?

None of the COVID-19 vaccines cause you to test positive on viral tests, which are used to see if you have a current infection.

If your body develops an immune response to vaccination, which is the goal, you may test positive on some antibody tests. Antibody tests indicate you had a previous infection and that you may have some level of protection against the virus.

Learn more about **mRNA and viral vector COVID-19 vaccines** and other common **Vaccine Myths**.

Visit **www.vaccines.gov** to find a location near you to get the COVID-19 vaccine.

* Source: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/distributing/steps-ensure-safety.html

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