

WHAT IS A VACCINE?

A vaccine is a substance used to stimulate the production of antibodies and provide immunity against one or several diseases and are prepared from agents that cause a disease, its products, or a synthetic substitute, treated to act as an antigen to trigger an immune response without inducing the disease itself.

Traditionally, humans have been vaccinated with four different types of vaccines including live attenuated virus, inactivated/killed antigen/virus, purified viral antigen subunit vaccine, and toxoid vaccines (the last being for bacterial toxins). For details, click [here](#).

Importantly, the three available human vaccines for Sars-CoV-2 are two new types of vaccines. Two of the available vaccines are mRNA vaccines while the third is a live viral vector vaccine. These vaccines have received emergency authorization in the United States and are recommended to prevent COVID-19. These vaccines have undergone intensive safety monitoring that includes using already established and new safety monitoring systems to ensure that COVID-19 vaccines are safe. The CDC has also developed a tool called v-safe to quickly identify any safety issues with COVID-19 vaccines.

COVID-19 VACCINE MYTHS DEBUNKED

MYTH

If I have already had COVID-19 and recovered, I do not need to get the COVID-19 vaccine.

MYTH

The COVID-19 vaccine will cause infertility in women.

FACT

Because of the severe health risks associated with COVID-19 and the fact that reinfection is still possible, it is recommended that you still receive the vaccine. At this time, it is unknown how long natural immunity lasts so even if you've had COVID-19, you should still get vaccinated.

FACT

People who want to get pregnant in the future can receive the COVID-19 vaccine, as the vaccines are unlikely to pose a risk to a person trying to become pregnant in the short or long term. In addition, there is no evidence suggesting that fertility problems are a side effect of ANY vaccine.

MYTH

The COVID-19 vaccine will alter my DNA.

MYTH

The vaccine contains a microchip that will be used to surveil and track my whereabouts.

FACT

No it does not. COVID-19 mRNA vaccines do not change or interact with your DNA in any way. The mRNA from a COVID-19 vaccine never enters the nucleus of the cell which is where our DNA is kept.

FACT

No, there are no microchips in any of the coronavirus vaccines.

COVID VACCINE TYPES

mRNA vaccines – also known as messenger RNA vaccines—teach our cells how to make a protein, or even a piece of a protein, that triggers an immune response inside our bodies. That immune response produces antibodies and that is what protects you from getting infected if the real vaccine enters the body. mRNA vaccines have been researched and studied for decades and can be developed in a laboratory using readily available materials. This has helped make the current vaccine development faster than traditional methods of making vaccines.

Viral vector vaccines use a modified version of a different virus (the vector) that deliver important information to our cells. For COVID-19 viral vector vaccines, the vector used is not the virus that causes COVID-19, but is instead a different harmless virus that enters our body cells and then uses the cells machinery to produce a harmless spike protein that is only found on the surface of the virus that causes COVID-19. Our cells then display the spike protein on its surface and our immune system recognizes that it does not belong there. This triggers our immune system to begin producing antibodies which then protects you from getting infected if the real vaccine enters the body.

	PFIZER-BIONTECH	MODERNA	JOHNSON & JOHNSON
VACCINE TYPE	mRNA	mRNA	Viral vector
EFFECTIVENESS	95% effective at preventing the COVID-19 virus with symptoms; Greater than 89% effective in preventing people with health conditions, such as diabetes or obesity, from developing the COVID-19 virus with symptoms	94% effective at preventing the COVID-19 virus with symptoms; Greater than 90% effective in preventing people with health conditions, such as diabetes or obesity, from developing the COVID-19 virus with symptoms	66% effective at preventing the COVID-19 virus with symptoms; 85% effective at preventing the COVID-19 virus with severe illness
WHO SHOULD RECEIVE IT?	People age 16 and older	People age 18 or older	People age 18 or older
DOSES REQUIRED	Two doses are needed, 21 days apart (or up to six weeks apart, if needed)	Two doses are needed, 28 days apart (or up to six weeks apart, if needed)	One dose needed
POSSIBLE SIDE EFFECTS	Injection site pain, fatigue, headache, muscle pain, chills, joint pain, fever, nausea, feeling unwell and swollen lymph nodes	Injection site pain, fatigue, headache, muscle pain, chills, joint pain, swollen lymph nodes in the arm that was injected, nausea, vomiting and fever	Injection site pain, headache, fatigue, muscle pain and nausea

*<https://www.mayoclinic.org/coronavirus-covid-19/vaccine/comparing-vaccines>

COMMON COVID-19 VACCINE FAQs

How do mRNA and viral vector vaccines differ from other common DNA vaccines?

Other common DNA vaccines put a weakened or inactive germ into our bodies to trigger an immune response. Unlike other vaccines, mRNA and viral vector vaccines instead teach our cells how to make a protein that triggers an immune response inside our bodies, which produces antibodies. This is what protects us from getting infected if the real virus enters our body.

Can mRNA or viral vector vaccines give someone COVID-19?

No. These vaccines do not use the live virus that causes COVID-19 and the vaccine itself cannot give someone COVID-19.

Can I become infected and become sick from COVID-19 after I receive the vaccine?

Yes, it is still possible to become infected with COVID-19 after vaccination. However, evidence suggests that receiving the full dose of the vaccine with the appropriate waiting period after the second shot effectively eliminates the risk of COVID-19 death, and nearly eliminates the risk of hospitalization. The benefit of the vaccine is to gain protection without having to risk the serious consequences of getting sick with coronavirus.

Can I still spread COVID-19 after I am vaccinated?

Scientists are still learning how well vaccines prevent you from spreading the virus that causes COVID-19 to others, even if you do not have symptoms. Data so far has shown that vaccines do help people with no symptoms from spreading COVID-19, but experts are learning more as more of the population gets vaccinated.

What are the long-term effects of the vaccine, if any?

Because the vaccine was developed fairly recently, there is currently only months and not years of follow up to measure what the long-term effects are. Generally, long-term side effects with vaccines are rare. With other immunizations that have been developed in the past, severe reactions typically occur within days or weeks after a person receives their immunization.



Patient Champion, Christie diagnosed with Type 1 Diabetes, received the COVID-19 vaccine.

What percentage of the population needs to get the vaccine to be effective?

According to the CDC, about 70% of the population will need to have been vaccinated or infected with COVID-19 in order to reach the point where the disease is no longer likely to spread. This is otherwise known as herd immunity.

How long is the vaccine effective after receiving it?

At this time, experts do not know how long immunity produced by vaccination lasts.

Is the vaccine safe to receive if I have an underlying condition such as cancer or other chronic illness?

Adults of any age with certain underlying medical conditions are at increased risk for severe illness from the virus that causes COVID-19, therefore many expert medical groups recommend that most patients with underlying conditions should get the vaccine. Since each person's medical condition is different, it is best to discuss the risks and benefits of getting the vaccine with your doctor and care team.

Is the vaccine safe to receive if I am pregnant?

Yes. There is currently no evidence that antibodies formed from COVID-19 vaccination cause any problem with pregnancy, including the development of the placenta.

Is the vaccine safe to receive if I am breastfeeding?

There is no data yet on the safety of COVID-19 vaccines in lactating women or their effects on the breastfed infant or on milk production/excretion. mRNA vaccines are not thought to be a risk to the breastfeeding infant and people who are breastfeeding are part of the group recommended to receive the vaccine.

MEET CATHRINE

Cathrine experienced firsthand the devastating impact that infections can have on your body through her experiences as an oncology nurse, when she herself was infected with COVID-19, and when she lost both of her parents who had underlying conditions to the virus at the beginning of the pandemic. When Cathrine was diagnosed with coronavirus, she was so weak and out of breath that she was barely able to do anything for herself with a fever that rose to nearly 106.

After weeks of recuperation at home, she began to feel physically better, though still a little weak. After she was recovered and tested negative for coronavirus, Cathrine had a high-level of antibodies and was able to donate convalescent plasma to help others battling the virus. For the remainder of 2020, she still felt long-term effects of the virus such as brain fog, and simple colds took longer for her to recover from. In January, Cathrine was finally able to receive the COVID-19 vaccine.

To learn more about Cathrine's journey, go to www.ascp.org/patients.



“The lab was very important, especially when I got the final negative test result, because it meant I could see and hug my sister. It was also very important because lab results showed I still had antibodies, which meant I could donate convalescent plasma to save other people’s lives. I wasn’t able to do that for my parents before they passed from COVID-19.”