

The first two COVID-19 vaccines known as messenger RNA (“mRNA”) vaccines have received authorization for use in the United States.



You may have questions about how the COVID-19 vaccines work in transplant recipients and how safe they are. As of January 26, 2021, there are 2 vaccines that are being used in the United States and Canada to prevent COVID-19. These are both mRNA type vaccines.

- Like all vaccines, COVID-19 mRNA vaccines were tested to make sure they are safe
- Although mRNA is a new way to make vaccines, it has been studied for decades.
- mRNA vaccines do not contain live virus and carry no risk of causing disease in those with a history of transplantation.
- mRNA from the vaccine cannot interact with your DNA.
- Transplant patients were not included in the clinical trials when the vaccines were being studied. However, the vaccination is likely to be beneficial for transplant patients. We are encouraging pre- and post-transplant patients to be vaccinated when available.

suppressed patients is not known. Transplant patients can have severe disease from COVID-19 infection and may be more likely to require hospital or intensive unit care. Thus, the benefits of vaccination appear to outweigh any unproven risks.

### Which vaccines will be available in the United States and Canada?

Both the Pfizer-BioNTech COVID-19 Vaccine and the Moderna vaccine are currently available in the US and Canada (January 26, 2021). These are both mRNA vaccines and work the same way. They have similar side effects and similar rates of protection from COVID-19 disease. We recommend receiving either brand of vaccine. Vaccine centers will not be able to accommodate requests for a specific vaccine type.

### Can transplant recipients receive the mRNA vaccines?

There are no safety concerns specific to transplant recipients. However, it is unknown if transplant recipients will develop less of an immune response to the vaccine due to their immunosuppressive medications. This could result in a decrease in the vaccine’s ability to provide protection against COVID-19, but some protection is still expected. Expert opinion is that it is unlikely that the vaccines will cause rejection episodes.

### Vaccine Safety

Have any COVID-19 vaccines been studied in transplant recipients?

Patients with suppressed immune systems were not included in the clinical trials that evaluated the COVID-19 vaccines. Therefore, how well the vaccine will work to protect immune



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## How the vaccines work

### What is an mRNA vaccine?

mRNA is a molecule that tells our body to make harmless proteins only found on the surface of the COVID-19 virus. Our immune system learns from the vaccine to recognize these proteins as foreign. After vaccination, if we get exposed to the COVID-19 virus, our immune system recognizes those same proteins on the virus and then knows to attack and block the COVID-19 virus. mRNA COVID-19 vaccines do not cause COVID-19 infection.

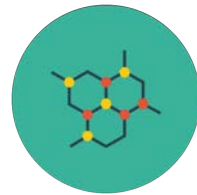
### Will the vaccine protect me from getting COVID-19 or just make me less likely to get sick?

In clinical trials, the vaccines proved to be highly effective at completely preventing COVID-19 disease in the majority of people. We also know that the vaccine also reduces the severity of COVID-19 sickness if you do catch it once vaccinated. Scientists are currently working to get a firm answer on whether the vaccine can reduce the risk of getting COVID-19 with no symptoms (asymptomatic).



### How long will the vaccine protection last?

We don't know exactly, because the longer-term results of vaccine clinical trials are not complete. It takes time for your body to build protection after any vaccination. COVID-19 vaccines require two shots take time to build protection, so you will not be protected until a week or two after your second shot. At this time, experts don't know how long someone remains protected from COVID-19 after being vaccinated, but the level of protection (around 94%) is among the highest seen with any vaccines.



### Who should receive the COVID-19 vaccine and when?

Pre- and post-transplant patients are included in the early stages of the vaccination roll-out in the US. Each state is awaiting further

instruction from their Departments of Public Health about how and when to carry out the vaccine roll-out schedule. It is likely that pre and post-transplant patients will be able to receive vaccine sometime in late Winter/early Spring of 2021.

We are encouraging patients to get vaccinated at whichever location is available to them first.

Of note, family members who do not fall within the currently active phase of vaccination may not be able to be vaccinated at the same time.

### Is the vaccine safe for people with mild or severe allergies?

If you have ever had a severe allergic reaction to any ingredient in a COVID-19 vaccine (such as polyethylene glycol), the Centers for Disease Control and Prevention (CDC) recommends that you not get that specific type of vaccine. If you have had a severe allergic reaction to other vaccines or injectable therapies, you should ask your physician if you should get a COVID-19 vaccine. Your doctor will help you decide if it is safe for you to get vaccinated. The CDC recommends that people with a history of severe allergic reactions that are not related to vaccines or injectable medications—such as allergies to food, pets, venom, pollen/environmental substances, or latex—can safely get vaccinated. People with a history of allergies to oral medications or a family history of severe allergic reactions, or who might have a milder allergy to vaccines (no



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anaphylaxis)—may also still get vaccinated. The only reason to avoid vaccination that is related to allergies is if you’ve ever had a severe allergic reaction to any ingredient in the COVID-19 vaccine.

If you have a severe allergic reaction after getting the first shot, you should not get the second shot. Your primary care provider may refer you to a specialist in allergies and immunology to provide more care or advice.

## When should I be vaccinated?

### What is the timing of vaccination relative to different transplant-related events?

Patient Group	Timing of Vaccine	Comments
Pre- Organ Transplant	Ideally at least 2 weeks prior to transplant	Do not delay transplantation because of COVID vaccine schedule
Post-Organ Transplant	1 month after transplant surgery (ask your transplant team for specific timing)	



### What if I am part of an earlier phase vaccine group, such as health care workers?

Transplant candidates and recipients who will be offered vaccination because they are members of another earlier phase group, such as health care workers, are encouraged to receive the COVID-19 vaccine as soon as it is offered.

### Can someone who has had COVID-19 get the vaccine?



Yes. You can get the vaccine once you have completely recovered from COVID infection and are no longer contagious. Please discuss the timing with your doctor. If you were treated with monoclonal antibodies or convalescent plasma for COVID-19 infection, you should wait at least 90 days before getting vaccinated. Due to the severe health risks associated with COVID-19 and the fact that re-infection is possible, people who previously tested positive can and should receive the COVID-19 vaccine when it is available to them. Currently, scientists don’t know how long COVID-19 antibodies protect people after they have been infected but think that the protection after infection is less than the protection after vaccination. People who had proven COVID-19 (or may have had) can and should receive the COVID-19 vaccine when it is available to them because it will give them additional protection. Testing for antibodies to COVID-19 as a marker of past infection is not recommended or needed prior to vaccination.

**Please note:** Persons who have active COVID-19 infection should **not** be vaccinated until they are cleared to stop isolation and are no longer contagious.

### If I get the first dose of the vaccine and then get infected with COVID-19, can I get the second dose?

Protection from symptomatic infection (meaning you are infected with COVID-19 and showing symptoms) starts as soon as 12 days after the first dose of the vaccine but is not complete. Even after your second dose, it is still possible to catch COVID-19 (but be protected from severe illness) and become

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contagious. If you do happen to become symptomatic with COVID-19 after the first dose of the vaccine, you should receive the second dose after the symptoms, such as fever, have completely resolved, and after you have completed a standard period of home isolation.

**Please note: Fever, fatigue, sore muscles and joints in the first few days after the vaccine may be vaccine side effects. If these symptoms do not clear within a couple of days or become worse, call your doctor and consider scheduling a COVID-19 test.**

## What to expect when I get vaccinated

### What is the dosing schedule?

- Pfizer-BioNTech COVID-19 Vaccine: There are two doses, with the second dose as close as possible to 21 days later, but no earlier than 17 days after the first dose.
- Moderna COVID-19 Vaccine: There are two doses, with the second dose as close as possible to 28 days later, but no earlier than 24 days after the first dose.
- If it is not possible to adhere to the recommended intervals above, the second dose of Pfizer-BioNTech and Moderna COVID-19 vaccines may be scheduled for administration up to 6 weeks (42 days) after the first dose.



### Is it safe to take pain relievers before vaccination? Can I take them if I develop side effects from the vaccine?

If you regularly take aspirin, acetaminophen (Tylenol) or ibuprofen (Motrin, Advil) for other medical conditions, continue to do so as directed by your physician or as needed. It is unknown if taking pain

relievers before getting vaccinated will reduce the effectiveness of vaccine; therefore, it is recommended to generally avoid taking them before vaccination.

If you have pain or discomfort after receiving the vaccine, it's ok to take pain relievers that you normally take. Side effects should go away in a few days. If you have concerns about what medications are safe for you to take, check with your doctor.



## After vaccination

### What are the potential adverse effects of the vaccine?

In the vaccine clinical trials, minor side-effects, which include headache, fatigue, fever and injection site pain (redness, swelling) were seen in the 1-3 days after vaccination. These symptoms are typically more noticeable after the second dose and in younger patients. Transplant patients should continue to call their transplant team for fever, or any other symptoms experienced in the days after the vaccination as they normally would to see if any further tests or treatments are needed.

At present, there is no information to suggest that transplant recipients would be at higher risk of vaccine adverse effects than anyone else.



### Can I stop wearing a mask after I have been vaccinated for COVID-19?

No. At this time, we do not know if the vaccine prevents people from getting infection without symptoms and spreading it to others. Even after vaccination, patients and their





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households should continue to practice COVID-19 safety measures including:

- Continue to wear masks around others
- Practice good handwashing
- Maintain physical distancing in public places

## Related Links

- <https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/clinical-considerations.html>
- [https://www.myast.org/sites/default/files/2020%2012%2008%20COVID19%20VACCINE%20FAQS\\_FINAL.pdf](https://www.myast.org/sites/default/files/2020%2012%2008%20COVID19%20VACCINE%20FAQS_FINAL.pdf)
- [https://ishlt.org/ishlt/media/documents/SARS-CoV-2\\_Guidance-for-Cardiothoracic-Transplant-and-VAD-center.pdf](https://ishlt.org/ishlt/media/documents/SARS-CoV-2_Guidance-for-Cardiothoracic-Transplant-and-VAD-center.pdf)
- <https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/coronavirus-vaccines-infographic>