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COVID-19 Vaccines in People with Cancer

[COVID-19](#)¹, caused by the SARS-CoV-2 virus, continues to have an impact on many people, including people with cancer, their families, and caregivers. (To learn more about COVID-19 and how it might affect people with cancer and their caregivers, see [Questions About COVID-19 and Cancer](#)².)

Vaccines (also called immunizations or vaccinations) are available to help protect against COVID-19. Here we'll discuss some of the questions people with cancer (or with a history of cancer) or the people caring for them might have about the COVID-19 vaccines.

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Is it safe for people with cancer to get the COVID-19 vaccine?

People with cancer (or with a history of cancer) can get the COVID-19 vaccine safely. However, the vaccine might be less effective in some people with cancer. (See “Should cancer patients and survivors get the vaccine?”)

There are some other types of vaccines that might not be safe for some people with cancer, but this depends on many factors, such as the type of vaccine, the type of cancer a person has (had), if they're still being treated for cancer, and if their immune system is working properly. Because of this, **it's best to talk with your doctor before getting any type of vaccine**. To learn more, see [Vaccinations and Flu Shots for People with Cancer](#)³.

Which COVID-19 vaccines are available?

Three COVID-19 vaccines are available in the US.* These vaccines have been approved or have received [emergency use authorization \(EUA\)](#)⁴ from the FDA for the

- The **Pfizer-BioNTech vaccine** is authorized for people 6 months to 11 years of age, and is approved (under the brand name Comirnaty) for people aged 12 or older.
- The **Moderna vaccine** is authorized for people 6 months to 11 years of age, and is approved (under the brand name Spikevax) for people aged 12 or older.
- The **Novavax vaccine** is authorized for people 12 years of age and older.

*A fourth vaccine, made by **Johnson & Johnson (Janssen)**, is no longer available in

“Recommendations for getting the COVID-19 vaccines” below.

How do these vaccines work?

The **Pfizer-BioNTech and Moderna vaccines** contain messenger RNA (mRNA), which is a type of genetic material. After a person gets the vaccine, the mRNA enters cells in the body and tells them to make copies of the COVID-19 virus’s “spike” protein (the protein that normally helps the virus infect human cells). This doesn’t cause disease, but it does help teach the immune system to recognize and attack the virus if the body is exposed to it in the future.

The **Novavax vaccine** is a protein subunit vaccine, which works much like traditional vaccines that have been used for decades. It contains pieces of the COVID-19 virus’s spike protein. Once injected into the body, the pieces of protein are recognized by the immune system as foreign. This teaches your immune system to attack the COVID-19 virus if it is exposed to it in the future.

Updated versions of all 3 of these vaccines are available as of October 2023.

These vaccines target the newer omicron variants of the COVID-19 virus. (For more details, see “Should people with cancer get a specific COVID-19 vaccine?”)

You cannot get COVID-19 from any of these vaccines, as they do not contain the virus that causes COVID-19.

Some vaccines for other diseases contain changed versions of the live viruses that cause the diseases. These live viruses don’t cause problems in people with normal immune systems. But they might not be safe for people with weakened immune systems, so live virus vaccines typically are not recommended for many people with cancer. However, the **COVID-19 vaccines available in the US do not contain these types of live viruses.**

For more on these vaccines, see “Should people with cancer get a specific COVID-19 vaccine?”

What is the difference between FDA approval and emergency use authorization (EUA)?

When a vaccine is [approved by the FDA](#)⁶, it means that the information on the vaccine and its effects has been thoroughly reviewed, and the FDA has determined that the benefits outweigh the known and possible risks for the people it is meant to help.

The current versions of all 3 of these vaccines have been updated to help boost the body's immune response against the newer omicron variants, which now account for the vast majority of COVID infections in the US.

The **CDC** recommends that people (regardless of their immune system status) stay up to date with COVID-19 vaccines, which includes getting one of the **updated (2023-2024) vaccines**. The CDC doesn't recommend one vaccine over another. The updated Pfizer-BioNTech and Moderna mRNA vaccines are available for people aged 6 months or older, while the updated Novavax vaccine is available for people 12 and older.

As new information about the different COVID-19 vaccines becomes available, it's possible that the guidance about these vaccines might change. For this reason, **it's important to talk with your cancer doctor about getting the vaccine.**

Recommendations for getting the COVID-19 vaccines

The CDC has different COVID-19 vaccine recommendations based on if a person has a weakened immune system. Some people with cancer (or who have had cancer) might have a weakened immune system, while others might not. Because of this, **it's important to talk with your health care provider about which set of recommendations below is right for you.**

For people 6 months to 4 years old

- Those who have not been vaccinated should get 2 or 3 doses of an updated mRNA vaccine, depending on which vaccine they get.
- Those who have received 1 dose of an earlier Pfizer-BioNTech mRNA vaccine should get 2 doses of an updated vaccine.
- Those who have received 1 dose of an earlier Moderna mRNA vaccine should get 1 dose of an updated vaccine.
- Those who have received 2 or more doses of any earlier mRNA vaccine should get 1 dose of an updated vaccine.

For people 5 to 11 years old

- Those who have not been vaccinated should get 1 dose of an updated mRNA vaccine.
- Those who have received 1 or more doses of an earlier mRNA vaccine should get 1 dose of an updated vaccine.

For people 12 years of age or older

- Those who have not been vaccinated should get 1 dose of an updated mRNA vaccine **OR** 2 doses of the updated Novavax vaccine.
- Those who have received 1 or more doses of an earlier mRNA vaccine should get 1 dose of any updated vaccine.
- Those who have received the Novavax or Johnson & Johnson (Janssen) vaccine should get 1 dose of any updated vaccine.
- **People 65 or older** should also get another dose of any updated vaccine, at least 4 months after the prior dose of updated vaccine.

For more on these recommendations, including the timing of the vaccines, visit the [CDC website](#).¹⁴

recommended by their health care provider.

For people 12 years of age or older

- Those who have not been vaccinated should get 3 doses of an updated mRNA vaccine **OR** 2 doses of the updated Novavax vaccine.
- Those who have received 1 dose of an earlier mRNA vaccine should get 2 doses of the updated version of the same vaccine
- Those who have received 2 or more doses of an earlier mRNA vaccine should get 1 dose of the updated version of the same vaccine.
- Those who have received 3 or more doses of an earlier mRNA vaccine should get 1 dose of any of the updated vaccines.
- Those who have received the Novavax or Johnson & Johnson (Janssen) vaccine should get 1 dose of any updated vaccine.
- **People aged 12 to 64** also have the option to get another dose of an updated vaccine (at least 2 months after the last updated vaccine dose). They may also get additional doses of updated vaccine (each at least 2 months apart) if recommended by their health care provider.
- **People 65 or older** *should* also get another dose of an updated vaccine (at least 2 months after the last updated vaccine dose). They may also get additional doses of updated vaccine (each at least 2 months apart) if recommended by their health care provider.

For more on these recommendations, including the timing of the vaccines, visit [the CDC website](#).¹⁵

Talk to your cancer care team about the best vaccine schedule for you

What are the side effects of the COVID-19 vaccines?

Common side effects that have been reported after getting the vaccines include:

- **Pain, redness, or swelling at the injection site**
- **Feeling tired**
- **Headache**
- **Fever**
- **Chills**
- **Muscle and joint pain**
- **Nausea**

The side effects might be a little stronger after the second shot (or later shots) compared to what you might have had after the first injection.

In general, the side effects tend to go away within a few days.

Swollen/tender lymph nodes

Some people might have swelling or tenderness of the lymph nodes under the arm in which they got the injection. This is often a normal response by the body's immune system, which is getting ready to fight a future COVID-19 infection.

A swollen lymph node under the arm might cause concern, since this can also be a sign of breast cancer (as well as some other cancers - see below). The time it takes for the lymph nodes to shrink back down after the vaccine may be a few days to a few weeks. If you notice swollen or tender lymph nodes that do not go away after a few weeks (or if they continue to get bigger), contact your doctor to discuss the next steps.

Screening mammograms: See "Could the vaccine cause issues if I'm getting a mammogram?" for more information about COVID-19 vaccines and mammograms.

For those who have breast cancer or a history of breast cancer: See "What if I have breast cancer or a history of breast cancer?" for more information about which arm to consider getting the injection in.

For those with any type of cancer or a history of cancer: Many types of cancer can spread to nearby lymph nodes (and some types of cancer can start in the lymph nodes). This can cause the nodes to become enlarged. Because the COVID vaccines can also cause lymph nodes to become enlarged, it's important to talk to your health care team if

you are scheduled to get an imaging test (such as an MRI, CT, or PET scan) in the weeks after getting a COVID vaccine. In some cases, your doctors might advise that you delay the imaging test if possible, so that any swollen lymph nodes that result from the vaccine aren't confused for cancer. If you do have a scan done soon after getting the vaccine, it's important to make sure that your health care team is aware you got the vaccine, so they can take this into account when looking at the scans.

Serious and long-term side effects of COVID-19 vaccines

A few uncommon but possibly serious safety concerns have been reported for the vaccines so far.

Allergic reactions to the vaccine

In very rare cases, people have had serious allergic reactions after getting one of the vaccines. This seems to be more likely in people who have had serious allergic reactions before.

Inflammation of the heart

A small proportion of people who have received any of these vaccines have developed **myocarditis** (inflammation of the heart muscle) or **pericarditis** (inflammation of the lining outside of the heart).

Symptoms of these conditions can include chest pain, shortness of breath, or feelings of having a fast-beating, fluttering, or pounding heart. Most often, symptoms start within a week of getting the vaccine, and they have tended to be more common in teens and young adults.

If you have received one of these vaccines and start to have any of these symptoms, the FDA and CDC recommend getting medical attention right away.

For more on these side effects, visit [the FDA website](#)¹⁶.

All of these COVID-19 vaccines are still fairly new, so possible long-term side effects

There is no information that suggests that COVID-19 vaccines cause cancer. There is also no information that suggests these vaccines can make cancer grow or recur (come back).

Do I still need to take precautions if I get the COVID-19 vaccine?

The COVID-19 vaccines are still being studied, as there are things we don't yet know about them. For example, researchers are still trying to determine how long the COVID-

If you're scheduled for a mammogram soon after you get a COVID-19 vaccine, it's important to tell your doctor when and in which arm you received the injection. Based on your situation, they can discuss with you if you should change your mammogram appointment. **Do not delay your mammogram without speaking to your doctor first.**

What if a stem cell transplant or CAR T-cell therapy is or was part of my cancer treatment?

and other preventive measures.

- [cancer/questions-about-covid-19-and-cancer.html](#)
3. www.cancer.org/cancer/managing-cancer/side-effects/infections/vaccination-during-cancer-treatment.html
 4. www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization
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