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## COVID-19 Vaccines in People with Cancer

[COVID-19](#)<sup>1</sup>, 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](#)<sup>2</sup>.)

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.

- [Is it safe for people with cancer to get the COVID-19 vaccine?](#)
- [Which COVID-19 vaccines are available?](#)
- [Should cancer patients and survivors get the COVID-19 vaccine?](#)
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“Recommendations for getting the COVID-19 vaccines” below.

**How do these vaccines work?**

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In an EUA, the FDA allows the use of a vaccine or drug during an emergency, when the available evidence shows the potential benefits outweigh the potential risks. Drugs and vaccines that have been given an EUA continue to be studied in clinical trials. An EUA is not the same as a full FDA approval, which requires a more thorough review of safety and effectiveness.

Even after a drug or vaccine has been approved, the [FDA will continue to monitor](#)<sup>7</sup> it for unexpected side effects or for more information that might be helpful to know.

## **Should cancer patients and survivors get the COVID-19 vaccine?**

**The CDC and other expert groups generally recommend that all people, including people with cancer and cancer survivors, stay up to date with the most recent COVID-19 vaccines.**

**Even if you've already had COVID-19, it's still important to be vaccinated.** While having been infected with COVID-19 offers some immunity, people can still be infected again. What's more, a person's immunity to COVID-19 can weaken over time, and it might not be as helpful against newer variants of the virus that continue to emerge. This is why staying up to date with the latest COVID-19 vaccines is important.

While the COVID-19 vaccines are safe for people with cancer, they might not be as protective as they are in people without cancer, especially for those with weakened immune systems. Some cancer treatments like [chemotherapy \(chemo\)](#)<sup>8</sup>, [radiation](#)<sup>9</sup>, [stem cell or bone marrow transplant](#)<sup>10</sup>, or [immunotherapy](#)<sup>11</sup> can affect the immune system, which might make the vaccine less effective. People with certain types of cancers, like [leukemias](#)<sup>12</sup> or [lymphomas](#)<sup>13</sup>

The current versions of all 3 of these vaccines have been updated to help boost the body's immune response against the newest 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

**For people who *haven't* received the COVID vaccine before**

**Ages 6 months to 4 years:** 2 doses of the u vaccine before

For people who have a moderately or severely weakened immune system, the CDC recommendations are a bit more complex. They are based on a person's age and which COVID vaccine (if any) they've received before:

### **For people 6 months to 4 years old**

- Those who have not been vaccinated should get 3 doses of the updated Moderna vaccine **OR** 3 doses of the updated Pfizer-BioNTech vaccine.
- Those who have received 1 dose of a Moderna or Pfizer-BioNTech vaccine should get 2 doses of the updated version of the same vaccine.
- Those who have received 2 or more doses of a Moderna or Pfizer-BioNTech vaccine should get 1 dose of the updated version of the same vaccine.

**All children in this age group** 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.

### **For people 5 to 11 years old**

- Those who have not been vaccinated should get 3 doses of the updated Moderna vaccine **OR** 3 doses of the updated Pfizer-BioNTech vaccine.
- Those who have received 1 dose of a Moderna or Pfizer-BioNTech vaccine should get 2 doses of the updated version of the same vaccine.
- Those who have received 2 doses of a Moderna or Pfizer-BioNTech vaccine should get 1 dose of the updated version of the same vaccine.
- Those who have received 3 or more doses of a Moderna or Pfizer-BioNTech vaccine should get 1 dose of the updated Moderna vaccine **OR** 1 dose of the updated Pfizer-BioNTech vaccine.

**All children in this age group** 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.

### **For people 12 years of age or older**

- Those who have not been vaccinated should get 3 doses of the updated Moderna vaccine **OR** 3 doses of the updated Pfizer-BioNTech vaccine **OR** 2 doses of the

updated Novavax vaccine.

- Those who have received 1 dose of a Moderna or Pfizer-BioNTech vaccine should get 2 doses of the updated version of the same vaccine.
- Those who have received 2 doses of a Moderna or Pfizer-BioNTech vaccine should get 1 dose of the updated version of the same vaccine.
- Those who have received 3 or more doses of a Moderna or Pfizer-BioNTech vaccine should get 1 dose of any of the updated vaccines.
- Those who have received 1 dose of the Novavax vaccine should get 1 dose of the updated Novavax vaccine.
- Those who have received 2 or more doses of the Novavax vaccine should get 1 dose of any updated vaccine.
- Those who have received 1 or more doses of the Johnson & Johnson (Janssen) vaccine should get 1 dose of any updated vaccine.

**All people in this age group** 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.

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

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

COVID-19 vaccines are recommended for people with cancer. But if you're being treated for cancer, there might be times when it makes sense to postpone getting a dose of vaccine for a while, such as if the treatment will severely weaken your immune system. Some cancer treatments might even wipe out your immune system for a while, which might mean you need to get revaccinated later on.

**It's important to talk to your doctor about your immune status and if it could affect the best time for you to get the vaccine (and booster shots), as well as what else you can do to help lower your risk of COVID-19 infection.**

### **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 (or later shots).

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](#)<sup>16</sup>.

All of these COVID-19 vaccines are still fairly new, so possible long-term side effects are still being studied, and it's possible that the guidance about the different vaccines might change. If you have concerns about getting one of these COVID-19 vaccines, it's important to talk with your doctor.

### **Can COVID-19 vaccines cause cancer or make cancer grow?**

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-19 vaccines will help protect against the virus. And while the vaccines can clearly lower the risk of getting very sick from COVID, it's not yet clear how well they can prevent the spread of the virus to others.

For people with weakened immune systems (which includes many people with cancer), most expert groups still recommend wearing a mask, social distancing, washing your hands, avoiding crowds, and other preventive measures, even if you've been vaccinated. Close contacts and caregivers should do this as well (see "Should cancer caregivers and close contacts get the vaccine?").

## What if I have breast cancer or a history of breast cancer?

Some people who get a COVID-19 vaccine might have swollen lymph nodes under the arm in which the injection was given (see "What are the side effects of the vaccines?" above). Because a swollen lymph node under the arm can also be a sign of breast cancer spread, most doctors recommend that people with breast cancer or a history of breast cancer get the injection in the arm on the opposite side of your breast cancer. For example, if your breast cancer/breast surgery was in the left breast, it is probably best to get the injection in the right arm. If you have had surgery on both breasts, it's best to talk with your doctor about the best place on your body to get the injection.

Swollen lymph nodes after a vaccine injection might also affect your mammogram results. (See next question.)

## Could the vaccine cause issues if I am getting a mammogram?

Getting a COVID-19 vaccine might result in swollen lymph nodes under the arm in which the injection was given. (See "What are the side effects of the vaccines?" above.)

Swollen lymph nodes under the arm might show up on a mammogram done to screen for breast cancer, which could cause concern and might lead to the need for further tests.

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?

[Stem cell transplants](#)<sup>17</sup> and [CAR T-cell therapy](#)<sup>18</sup> are types of cancer treatment that can have major effects on the body's immune system. This can increase your risk of serious infections (including from COVID-19).

If you've **already received one of these cancer treatments** in the past, it's important to stay up to date with your COVID vaccines. However, your doctor may recommend waiting at least several months after these cancer treatments before getting the vaccine, to give your body's immune system a chance to recover.

If you've already gotten the COVID-19 vaccine and **are now getting (or are going to get) one of these cancer treatments**, your doctor may recommend getting **revaccinated**, at least several months after treatment. This is because your immune system needs to relearn how to protect your body against COVID-19.

**If you're getting (or have gotten) one of these cancer treatments, it's important to talk to your doctor about your immune status, when you should get the vaccine, as well as what else you can do to help lower your risk of infection.**

**Should cancer caregivers and close contacts get the vaccine**\_\_\_\_\_

this time.

## Should I get the flu vaccine as well as the COVID-19 vaccine?

COVID-19 and influenza (the flu) are caused by different viruses, so getting a vaccine against one of these diseases will NOT protect against the other. It's very important for people with cancer to talk to their doctor about the benefits and risks of getting both the COVID-19 vaccine and the flu shot.

The flu and COVID-19 are both caused by viruses that can spread easily and can cause serious illness in older people, those with weakened immune systems, and others with certain medical conditions. These infections share many of the same symptoms, so it can be hard to tell which one you might have without having specific tests.

People who live with or care for someone at high risk of getting the flu should also get the flu vaccine.

For more on getting both the COVID-19 vaccine and the flu vaccine, visit the CDC website at <https://www.cdc.gov/flu/prevent/coadministration.htm><sup>19</sup>.

## Where can I get more information about COVID-19 vaccines?

The CDC and FDA have more information about COVID-19 vaccines, including the different types of vaccines and the known possible risks and benefits of each one.

- [US Centers for Disease Control and Prevention \(CDC\)](#)<sup>20</sup>
- [US Food and Drug Administration \(FDA\)](#)<sup>21</sup>

To find COVID-19 vaccines and boosters near you, visit <https://www.vaccines.gov><sup>22</sup>.

## Hyperlinks

1. [www.cancer.org/cancer/managing-cancer/coronavirus-covid-19-and-cancer.html](http://www.cancer.org/cancer/managing-cancer/coronavirus-covid-19-and-cancer.html)  
[www.cancer.org/cancer/managing-cancer/coronavirus-covid-19-and-](http://www.cancer.org/cancer/managing-cancer/coronavirus-covid-19-and-)
-

- [policy-framework/emergency-use-authorization](#)
5. [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)
  6. [www.fda.gov/drugs/development-approval-process-drugs](http://www.fda.gov/drugs/development-approval-process-drugs)
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  8. [www.cancer.org/cancer/managing-cancer/treatment-types/chemotherapy.html](http://www.cancer.org/cancer/managing-cancer/treatment-types/chemotherapy.html)
  9. [www.cancer.org/cancer/managing-cancer/treatment-types/radiation.html](http://www.cancer.org/cancer/managing-cancer/treatment-types/radiation.html)
  10. [www.cancer.org/cancer/managing-cancer/treatment-types/stem-cell-transplant.html](http://www.cancer.org/cancer/managing-cancer/treatment-types/stem-cell-transplant.html)
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  16. [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)
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  19. [www.cdc.gov/flu/prevent/coadministration.htm](http://www.cdc.gov/flu/prevent/coadministration.htm)
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  21. [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)
  22. [www.vaccines.gov](http://www.vaccines.gov)

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