

# COVID-19 Vaccines and Cancer: What You Need to Know

## For people with cancer and their families

Read this brochure to learn about:

- how COVID-19 vaccines work
- vaccine safety for people with cancer
- possible side effects from a vaccine
- common questions about the COVID-19 vaccine

## **Should I get the COVID-19 vaccine?**

People with cancer may have a higher risk of:

- getting COVID-19
- getting very sick from COVID-19
- dying from COVID-19

For these reasons, people with cancer should get a COVID-19 vaccine to protect themselves.

Health Canada has recently approved 4 COVID-19 vaccines from the companies:

- Pfizer
- Moderna
- AstraZeneca
- Johnson & Johnson (Janssen)

You may have a lot of questions about the vaccines, whether they are safe for you and when you can get a vaccine.

This brochure is meant to give you general information about what is known about the vaccines now.

## **What groups of people with cancer are most at risk?**

While any person with cancer may be at risk of getting very sick if they get COVID-19, we know the following groups of people with cancer have a higher risk:

- those who have lung cancer
- those who have cancers of the blood like leukemia, lymphoma and multiple myeloma
- those who were diagnosed with cancer in the last year
- those who are 65 years or older
- those who had a stem cell transplant in the last 6 months

- those who are getting treatments that weaken the immune system, such as chemotherapy and targeted therapies

Each person's cancer and cancer treatment is different. Talk to your cancer care team about the COVID-19 vaccines and whether they are right for you.

## How do COVID-19 vaccines work?

There are 4 COVID-19 vaccines approved for use in Canada.

The Pfizer and Moderna vaccines are **messenger RNA (mRNA) vaccines**.

- The cells in our bodies make mRNA all the time. The cells use mRNA to make the many proteins our bodies need to function.
- COVID-19 mRNA vaccines teach our cells how to make a protein when the immune system detects the COVID-19 virus. The protein gets the immune system to start making antibodies (cells that fight infection). These antibodies protect us from the COVID-19 virus if it enters our body in the future.

The AstraZeneca and Johnson & Johnson vaccines are **viral vector-based vaccines**.

- Viral vector-based vaccines use a harmless virus as a delivery service. The virus is **not** the virus that causes COVID-19.
- The harmless virus carries genes from the spike protein (the outer layer that helps a virus stick to healthy cells) of the COVID-19 virus into the body. The immune system reacts to these genes and starts making antibodies to fight them. By doing this, the immune system learns how to make antibodies to protect us if the COVID-19 virus enters the body in the future.

## How did scientists develop the vaccines so quickly?

These are not new types of vaccines. Scientists have been doing research and developing viral vector-based vaccines for about 30 years and mRNA vaccines for about 10 years.

Some of the reasons scientists were able to develop the COVID-19 vaccines so quickly were:

- The COVID-19 virus is similar to other viruses. Research teams already had a lot of knowledge about these types of viruses.
- Scientists around the world started to work on the vaccines right away when the COVID-19 virus was first found.
- Scientists around the world shared information with each other.
- Research teams were able to sign up a large number of people in clinical trials (research studies that involve humans) very quickly to test the vaccines. For example, over 200,000 people in Britain took part in clinical trials for vaccines in development.

## **How do I know these vaccines are safe?**

Health Canada ensures that medicines meet very strict safety and efficacy (how well something works) standards before they are approved for use in Canada. COVID-19 vaccines went through the same amount of safety checks as any other vaccine or medicine.

Health Canada found no major safety concerns with the vaccines and approved them for use.

Read more about how the vaccines were approved for use:

- Ministry of Health's [COVID-19 Vaccine Approval Process and Safety](http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/vaccine/COVID-19_vaccine_approval_process_safety.pdf) ([http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/vaccine/COVID-19\\_vaccine\\_approval\\_process\\_safety.pdf](http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/vaccine/COVID-19_vaccine_approval_process_safety.pdf))
- Public Health Ontario's [Vaccine Regulatory Process in Canada](https://www.publichealthontario.ca/-/media/documents/ncov/vaccines/2020/12/at-a-glance-vaccine-regulatory-approval-process.pdf?la=en) (<https://www.publichealthontario.ca/-/media/documents/ncov/vaccines/2020/12/at-a-glance-vaccine-regulatory-approval-process.pdf?la=en>)

## **Can I get COVID-19 from the vaccines?**

No, it is not possible to get COVID-19 from the vaccines. Vaccines for COVID-19 use a part of the virus (the spike protein) or a gene from the virus that cannot cause COVID-19.

## **Can I still spread the virus to other people even after I get a vaccine?**

COVID-19 vaccines will protect you from getting sick from the virus. It is not known if the vaccines will protect you from getting infected with the COVID-19 virus. This means there is still a chance you could get COVID-19 but have no symptoms of the disease.

If you get COVID-19 you could spread the virus to other people without knowing it. At this time, people who get a vaccine need to continue wearing masks and practicing physical distancing.

## **Vaccine safety for people with cancer**

### **Are the vaccines safe for people getting cancer treatment?**

Yes, oncologists say the vaccines are safe for most people with cancer. Your care team can give you more information so you can make an informed choice about getting a vaccine.

Talk to your cancer care team before getting a vaccine if you have:

- been diagnosed recently
- are getting treatment now
- have had recent treatment

Depending on the cancer treatment, some people may not get as much protection from a vaccine as other people. But any amount of protection will keep you safer than none.

It is unknown at this time if some people with cancer may need to get the vaccines again after they finish treatment. More studies are needed to know how well the vaccines work for people with cancer.

### **COVID-19 vaccines and different treatment types**

- **Chemotherapy**

People getting chemotherapy can get a COVID-19 vaccine. Chemotherapy may reduce how well a vaccine works because it suppresses (stops or slows down) your immune response. Your oncologist (cancer doctor) may adjust your treatment to allow the vaccine to work better.

Talk to your oncologist about getting a vaccine and your treatment plan.

- **Radiation Therapy**

People getting radiation therapy can get a vaccine. Radiation therapy does not seem to affect how well the vaccines work.

People getting radiation therapy can get a vaccine at any time before or during treatment.

- **Immunotherapy**

People getting immunotherapy (for example, checkpoint inhibitors) may be able to get a COVID-19 vaccine. If you get a vaccine, your cancer care team will need to watch you closely for any vaccine side effects.

Talk to your oncologist about getting a vaccine.

- **Stem cell transplant or adoptive cell therapy**

People getting stem cell transplants or adoptive cell therapy may have a weakened immune system for a short amount of time. A weakened immune system may reduce how well the COVID-19 vaccines work.

You may have to wait until your immune system recovers after treatment before getting a vaccine. Some people may also need to get a vaccine again at a later date.

Talk to your oncologist about when you can expect to get the COVID-19 vaccine.

- **Immunosuppressant Therapy**

Whether people getting immunosuppressant therapy can get a COVID-19 vaccine depends on the type of therapy. If you are getting rituximab, it may reduce how well the vaccines work. Talk to your oncologist about when it is safe for you to get a COVID-19 vaccine.

Immunosuppressant therapy may reduce how well the vaccines work. If it is safe for you to get a vaccine, get a vaccine as soon as it is offered to you.

Talk to your oncologist before getting **any** vaccine including a COVID-19 vaccine.

## **How will I get a vaccine?**

COVID-19 vaccines are given in the upper arm muscle just like a flu shot.

- The Pfizer, Moderna and AstraZeneca vaccines are given in 2 doses. You get your second dose up to 16 weeks after the first dose. The amount of time between doses may change if the Ministry of Health changes its guidelines.
- The Johnson & Johnson vaccine is given in 1 dose.

## How soon do the vaccines start to work?

It takes time for your body to build up an immune response to protect you.

- **If you get a vaccine that requires 2 doses:** You will have some protection after the first dose. You need the second dose for full protection.
- **If you get the Johnson & Johnson vaccine:** It takes at least 2 weeks for the vaccine to protect you from getting very sick from COVID-19.

## How well do the vaccines work?

COVID-19 vaccines work very well to protect people from:

- getting very sick from COVID-19
- needing hospital treatment if they get COVID-19
- dying from COVID-19

## Is one company's vaccine better than another?

The best vaccine is the first one you can get.

- You may have heard or read about the efficacy rates for each vaccine. A vaccine's efficacy rate refers to how well the vaccine did in clinical trials under ideal conditions.
- The conditions for each COVID-19 vaccine clinical trial were different and cannot be compared to each other. The clinical trials were set up differently, measured different things and run during different times of the pandemic.

For example, each clinical trial had a different definition for what counted as COVID-19 infection.

- Some clinical trials counted 1 mild symptom as a COVID-19 infection while others counted 2 mild symptoms or 1 moderate symptom.
- Some clinical trials counted COVID-19 symptoms 1 week after the second dose while others counted symptoms 2 weeks after the second dose.

All the COVID-19 vaccines protect you equally against getting very sick if you get COVID-19.

## **How long will the vaccines protect me?**

At this time we do not know how long the vaccines will protect you. Since these are new vaccines, they will need to be studied over time to see how long protection lasts.

## **Possible side effects from the vaccines**

As with other vaccines, some people may develop mild side effects in the days after a dose. Most side effects will go away on their own.

The most common side effects from the COVID-19 vaccines are:

- fatigue (tiredness)
- headache
- muscle aches
- pain where you got the vaccine
- redness and swelling where you got the vaccine
- joint pain
- mild fever
- swollen glands (this happens less often)

If you get a vaccine that has 2 doses, these side effects are more likely to happen after the second dose.

Speak to your health care team if these side effects last for more than 3 days.

## **About the AstraZeneca Vaccine**

You may have seen reports about the AstraZeneca vaccine and wonder about its safety.

People who get the AstraZeneca vaccine are **not** at a higher risk of blood clots when compared to the general population. Even if you have a history of blood clots or are at risk for blood clots, you should still get the AstraZeneca vaccine if you are offered it.

However, the vaccine may be linked to a very rare type of blood clot in the brain (called cerebral venous sinus thrombosis or CVST). CVST is related to low levels of platelets. Platelets are the blood cells that stop bleeding.

Preventing blood clots and other diseases caused by COVID-19 far outweigh risks, which are very low.

### **When should I get medical help for side effects?**

Serious side effects from the vaccines are rare. If you develop any of these side effects within 3 days of getting a vaccine, get medical help right away. The side effects include:

- hives
- swelling of the face or mouth
- trouble breathing
- very pale colour in face or serious drowsiness (feeling very sleepy)
- fever over 40°C or 104°F
- convulsions (muscle movement you cannot control) or seizures
- other serious symptoms (for example, numbness)

### **Should I be concerned if I have severe allergies?**

Talk to your oncologist before you get a COVID-19 vaccine if you have serious allergies or had an anaphylaxis reaction (very serious allergic reaction that could cause you to stop breathing) to:

- other vaccines
- other medicines, including cancer medicines like chemotherapy

- any foods

If you have had a serious allergic reaction to any of the ingredients in any of the vaccines, talk to your doctor about your options. If you are allergic to an ingredient in one company's vaccine you may be able to get a different vaccine. For a complete list of ingredients in the 4 approved vaccines, go to the websites below:

- [ingredients in the Pfizer vaccine](https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/pfizer-biontech.html#a1.1) (https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/pfizer-biontech.html#a1.1)
- [ingredients in the Moderna vaccine](https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/moderna.html#a11) (https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/moderna.html#a11)
- [ingredients in the AstraZeneca vaccine](https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/astrazeneca.html#a11) (https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/astrazeneca.html#a11)
- [ingredients in the Johnson & Johnson \(Janssen\) vaccine](https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/janssen.html#a11) (https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/janssen.html#a11)

## **Do I still have to wear a mask and practice physical distancing after I get a vaccine?**

Yes. You still need to wear masks and practice physical distancing until a large amount of people get a vaccine.

## Common Questions

### **Should I still get a vaccine if I already had COVID-19?**

Yes. People who have COVID-19 should get a vaccine after they recover from the virus. The vaccine trials included people who were infected with COVID-19 and the vaccines were found to be safe.

Experts do not know how long antibodies last after someone has had COVID-19. A vaccine may help your body fight a future COVID-19 infection. Talk to your oncologist about when you should get a vaccine after you recover.

### **Should I get a vaccine if I have symptoms of COVID-19?**

If you have any symptoms of COVID-19, wait to get a vaccine. Talk to your cancer care team about your symptoms and getting a COVID-19 test. Your cancer care team will tell you when to get a vaccine.

### **Should I still get a flu shot if I have not had one yet?**

Yes. The flu and the COVID-19 virus are not the same thing. In people with cancer and those with weakened immune systems, the flu can be serious and sometimes life-threatening (cause death).

- People with cancer should get a flu shot that has an inactive (dead) flu virus. Most flu shots do not contain the live virus.
- Do not get the flu vaccine through the nose as nasal spray. These nasal sprays contain live flu virus. People with cancer and those who live with them should not get the nasal spray flu vaccine.

Your cancer care team will tell you when to get the flu shot depending on your cancer type and treatment.

## **Should I still get a flu shot if I have COVID-19?**

If you have COVID-19 or think you may have the virus, wait to get your flu shot. This keeps other people safe from being exposed to COVID-19.

## **Can I get other vaccines at the same time I get the COVID-19 vaccine?**

You should not get other vaccines at the same time you get the COVID-19 vaccine.

- Do not get other vaccines until at least 28 days after you get the second dose of the COVID-19 vaccine.
- Wait 14 days after getting another vaccine before you get a COVID-19 vaccine.

## **For more information**

Talk to your cancer care team for more information about the COVID-19 vaccines.