



Durham Region Health Department Facts about...



COVID-19 Vaccines

[COVID-19](#) is a viral infection that primarily affects the lungs. Some people may have a mild illness and others may get very sick, including seniors or people with a pre-existing health condition. Very rarely, some children can get a serious inflammatory condition. The long-term effects of COVID-19 are not fully known. Some people are at greater risk of getting COVID-19 because of their work or living conditions.

How COVID-19 Vaccines Work

There are four vaccines approved for use in Canada; two mRNA vaccines and two viral vector-based vaccines.

The two **mRNA vaccines** are the **Pfizer-BioNTech** and the **Moderna** COVID-19 vaccines. mRNA vaccines work by telling the cells in your body to make a protein that is found specifically on the virus that causes COVID-19. These “spike proteins,” although harmless to you, will trigger your body to start making antibodies. These new antibodies will protect you from getting sick if you are exposed to the virus. The vaccine does not contain the virus and so it cannot give you COVID-19.

The **viral vector-based vaccines** are **AstraZeneca** and **Janssen** (Johnson & Johnson) COVID-19 vaccines. Viral vector-based vaccines work by using a harmless virus as a delivery system. The vector virus is not the virus that causes COVID-19. Once injected into the body, the virus contained within the vaccine produces the COVID-19 spike protein. The spike protein doesn't make you sick, but it will trigger your body to start making antibodies. These new antibodies will protect you from getting sick if you are exposed to the virus. The vaccine does not contain the virus and so it cannot give you COVID-19.

All four vaccines have been tested in large clinical trials to ensure they meet safety standards, and all have been licensed and approved by Health Canada.

Vaccination Process

The Pfizer, Moderna and AstraZeneca vaccines require two doses. The Ontario Ministry of Health has directed all Health Units to follow the National Advisory Committee on Immunization (NACI) recommendation to provide the second dose of these vaccines 112 days/16 weeks after the first dose. This will allow Ontario to maximize the number of people receiving the first dose of the vaccine and increase the amount of protection in the community. The Janssen COVID-19 vaccine only requires one dose.

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Data from clinical trials for mRNA vaccines (Pfizer and Moderna) indicate that efficacy against a symptomatic COVID-19 infection begins as early as 12 to 14 days after the first dose, and both vaccines showed an efficacy of 92% up until the second dose (NACI).

Real world vaccine effectiveness data (e.g. from Quebec, British Columbia, Israel, the United Kingdom and the United States) support good effectiveness (generally 70-80%) from a single dose of mRNA vaccine (up to 2 months) including among older populations (NACI).

Vaccine Benefits

- It will take about two weeks after receiving a COVID-19 vaccine to develop an immune response. In vaccines that require two doses, it will take two weeks after the second dose to achieve maximum protection against COVID-19.
- Even after the first dose, mRNA vaccines can be up to 80% effective at preventing serious illness and hospitalization.
- Currently, there is no information on the long-term protection with this vaccine. In trials of mRNA vaccines for people 18 years of age or older without a history of COVID-19, the vaccine was 94% (Moderna) and 95% (Pfizer) effective 14 days after the second dose was received.
- In trials of viral vector-based vaccines for people 18 years of age or older without a history of COVID-19, the vaccine was 62% (AstraZeneca) and 66% (Janssen) effective 14 days after vaccine series completion.
- While viral vector-based vaccines are less effective than the mRNA vaccines at preventing COVID-19 infection, they still provide significant protection and have been shown to be **equally effective** at reducing serious COVID-19 illness, hospitalization and death.

There is a small chance you may still get COVID-19 after being vaccinated. It is important to continue with public health measures such as physical distancing, wearing a mask, and staying home if you are sick. Health care and other staff must still wear personal protective equipment (PPE) even after they have been vaccinated.

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Side Effects and Risks

Some people may experience side effects from the vaccine, but these will likely be mild and resolve after a few days. Some of the symptoms are part of the body's response to developing immunity.

Common side effects reported in clinical trials for these vaccines include:

Very Common ≥10% (more than 1 in 10 doses)	Common 1%-10% (1 in 100 to 1 in 10 doses)	Uncommon 1% (1 in 100 doses)	Very Rare
<ul style="list-style-type: none"> • pain, tenderness, itchiness or swelling at the injection site • headache • feeling tired or unwell • muscle or joint pain • fever or chills • nausea • swelling or tenderness under the armpit (only in Moderna vaccine) 	<ul style="list-style-type: none"> • redness & swelling at the injection site • vomiting or diarrhea 	<ul style="list-style-type: none"> • enlarged lymph nodes <p><u>Janssen only:</u></p> <ul style="list-style-type: none"> • rash • muscle weakness • arm or leg pain • feeling weak or generally unwell <p><u>AstraZeneca only:</u></p> <ul style="list-style-type: none"> • sleepiness or feeling dizzy • decreased appetite • excessive sweating, itchy skin or rash 	<ul style="list-style-type: none"> • allergic reaction such as hives • serious allergic reactions such as anaphylaxis

In rare cases, serious allergic reactions (anaphylaxis) can occur. Allergic reactions can be treated and are usually temporary. Seek immediate medical attention if you have trouble breathing, have hives, or swelling of the face and throat. Vaccine side effects will continue to be tracked as more people receive the vaccine.

If you have a reaction to the vaccine, contact your health care provider who will report the side effect directly to the health department. The health department will keep track of the reported side effects to make sure the vaccine continues to be safe.

Precautions

- Delay vaccination if you have a fever, are sick with COVID-19 symptoms, or have received a vaccine in the past 14 days.
- Avoid trying to get pregnant for at least a month after getting both doses of the vaccine.
- If you are on blood thinner medication, they will use a smaller needle and you will need to apply pressure for longer after getting the vaccine to reduce bruising.

Do not get this vaccine if you:

- Have allergies to any vaccine ingredients, including polyethylene glycol (mRNA vaccines) or Polysorbate 80 (viral vector-based vaccines); or
- Have a known hypersensitivity to tromethamine (Moderna COVID-19 vaccine); or
- Have had a severe reaction to a previous dose of this vaccine.

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After you get the vaccine

The vaccines approved for use in Canada have been proven to be safe and effective at protecting the person immunized from becoming infected with COVID-19. With new vaccines there is still information we do not know such as whether you can still spread the virus to others after you have been vaccinated. Scientists continue to monitor information as it becomes available and recommendations may change accordingly.

You will need to continue to practice recommended public health measures, regardless of immunization status to prevent the spread of COVID-19 such as:

- Continue to wear a face covering
- Practice social distancing
- Avoid social gatherings with those outside your immediate household
- Limit non-essential trips outside your home
- Wash your hands often with warm water and soap or an alcohol-based hand sanitizer
- Avoid enclosed, poorly ventilated spaces and crowded places
- Stay home when you are sick
- If you have been identified as a close contact of someone infected with COVID-19 and are advised to self-isolate, you will be required to self-isolate regardless of immunization status
- Wait 28 days after receiving the second dose of the COVID-19 vaccine, before getting a non-COVID-19 vaccine

Talk to your health care provider first if you:

- are pregnant or breastfeeding; or
- have a weakened immune system due to illness or treatment, or
- have a bleeding disorder.

For more information talk to your health care provider or visit durham.ca/covidvaccines

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