

COVID-19 mRNA Vaccines

Pfizer-BioNTech Vaccine and Moderna Vaccine

Public Health – Factsheet

Immunization is one of the most important accomplishments in public health. Over the past 50 years, immunization has led to the elimination, containment and control of diseases that were once very common in Canada.¹ Vaccines help the immune system recognize and fight bacteria and viruses that cause diseases.

What are COVID-19 mRNA vaccines?

COVID-19 mRNA vaccines are used to prevent COVID-19. mRNA vaccines teach our cells how to make a protein that will trigger an immune response without using the live virus that causes COVID-19. Once triggered, our body then makes antibodies. Antibodies protect us from being infected if the real virus does enter our body in the future.

'RNA' stands for ribonucleic acid, which is a molecule that gives cells instructions for making proteins. **Messenger RNA (mRNA) vaccines** contain the genetic instructions for making the SARS-CoV-2 spike protein. This protein is found on the surface of the virus that causes COVID-19.

mRNA vaccines cannot change a person's DNA.

When a person is given the vaccine, their cells will read the genetic instructions like a recipe and produce the spike protein. After the protein piece is made, the cell breaks down the instructions and gets rid of them.

The cell then displays the protein piece on its surface. Our immune system recognizes that the protein doesn't belong there and begins to build an immune response by making antibodies. **You cannot get COVID-19 from the vaccine.**

Scientists and pharmaceutical companies have developed these vaccines because of the urgent need to combat the worldwide spread of COVID-19. The Pfizer-BioNTech COVID-19 vaccine (Tozinameran or BNT162b2) and the Moderna COVID-19 vaccine (mRNA-1273) are the first two COVID-19 vaccines to receive Health Canada approval.

Health Canada has issued both the Pfizer-BioNTech and Moderna vaccines a market authorization with conditions to support early access to the COVID-19 vaccines. Health Canada can do this for promising health products when the potential benefits outweigh the potential risks. The approval of the vaccine is supported by evidence that it is safe, effective and of good quality. Early results from clinical trial data suggests that the Pfizer-BioNTech and the Moderna vaccines have been demonstrated to be 95 per cent and 94 per cent effective, in the short term in preventing individuals from getting lab-confirmed COVID-19.

These two COVID-19 mRNA vaccines being offered in Manitoba are given by injection (needle) into a muscle of the upper arm. At this time, the first vaccines approved in Canada require two doses to work best. The immunization schedule may change as the evidence continues to evolve.

¹ The Public Health Agency of Canada

The COVID-19 vaccine cannot offer protection against the flu or other viruses or bacteria.

Who should get the COVID-19 vaccine?

The COVID-19 vaccines will eventually be available to all Manitobans. While supplies are limited, Manitoba has identified priority populations to have access to the initial doses based on recommendations made by the National Advisory Committee on Immunization (NACI) and working with public health experts across the country through the Pan-Canadian Special Advisory Committee on COVID-19. These priority populations include:

- health care workers most directly involved in the COVID-19 response,
- people in congregate living settings such as long-term care facilities, assisted living facilities, retirement homes, and chronic care hospitals,
- older adults starting at 80 years of age and older, and
- adults at risk in Indigenous communities.

The National Advisory Committee on Immunization (NACI) makes recommendations for the use of vaccines currently or newly approved for use in people in Canada, including the COVID-19 vaccines. For more information, please visit <https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci/guidance-prioritization-initial-doses-covid-19-vaccines.html>

People who have gotten sick with COVID-19 and have recovered may still benefit from getting the vaccine. Currently there is limited data on the use of COVID-19 vaccines in people who have gotten sick with COVID-19 and recovered. In the

context of limited vaccine supplies, NACI recommends waiting three months before being immunized. Speak with your health care provider about when is the best time for you to get vaccinated.

Should individuals who have an autoimmune condition, such as Rheumatoid Arthritis or Multiple Sclerosis (MS), get the COVID-19 vaccine?

According to NACI, the COVID-19 vaccine should not be routinely offered to people with an autoimmune condition. However, individuals with an autoimmune condition may be vaccinated by reviewing the risks and benefits with their health care provider or immunizer, and considering the following:

- There is limited evidence that having an autoimmune condition is an independent risk factor for severe COVID-19.
- There is limited data on COVID-19 vaccination in individuals who have an autoimmune condition.
- It is theoretically possible that COVID-19 vaccine could cause an autoimmune condition to get worse.

Should individuals who are immunosuppressed due to a disease, like certain cancers, or treatment, such as being on high-dose steroids, get the COVID-19 vaccine?

According to NACI, the COVID-19 vaccine should not be routinely offered to people who are immunosuppressed due to disease or treatment however, individuals who are immunosuppressed due to disease or treatment be vaccinated by reviewing the risks and benefits with their health care provider or immunizer, and considering the following:

- There is limited evidence that immunosuppression is an independent risk factor for severe COVID-19.
- There is no data on COVID-19 vaccination in individuals who are immunosuppressed.
- Immunocompromised persons including individuals receiving immunosuppressant therapy may have a diminished immune response to the vaccine.

Should pregnant or breastfeeding individuals get the COVID-19 vaccine?

According to NACI, the COVID-19 vaccine should not be routinely offered to people who are pregnant until after the baby is born, or to people who are breastfeeding. However, pregnant or breastfeeding individuals may be vaccinated by reviewing the risks and benefits with their health care provider or immunizer, and considering the following:

- There is limited evidence of pregnancy as an independent risk factor for severe COVID-19.
- There are no data on the safety and efficacy of COVID-19 vaccines in pregnancy or during breastfeeding, on the pregnant/breastfeeding woman or on the fetus/infant.
- There is currently no evidence to guide the time interval between the completion of the COVID-19 vaccine series and conception. NACI recommends delaying pregnancy by 28 days or more after the administration of the complete two-dose COVID-19 vaccine series.

Living with a medical condition not listed above (e.g., heart failure, liver disease, chronic kidney disease) does not mean you can't get the vaccine. Talk to your health care provider if you have any questions.

Who should NOT get the COVID-19 vaccine?

Infants and children under the age of 16 should not be given the Pfizer-BioNTech vaccine. Individuals under the age of 18 should not be given the Moderna vaccine.

Currently there is no data on COVID-19 vaccination in children less than 12 years of age, and only limited data on the Pfizer-BioNTech vaccine in those 12 to 15 years of age. According to NACI, the Pfizer-BioNTech vaccine should not be routinely offered to children 12 to 15 years of age. Clinical trials and post-marketing studies are ongoing and NACI is monitoring the evidence as it evolves.

The COVID-19 vaccine should not be given to people who are allergic to the active substance or any of the other ingredients of this vaccine, or if you have had a severe allergic reaction after the first dose. An allergic reaction can be life-threatening. For information about any of the COVID-19 vaccine's ingredients, please review the vaccine manufacturer's product monograph, which is available at: www.manitoba.ca/vaccine or speak with your health care provider.

Polyethylene glycol (PEG) is a potential allergen included in the COVID-19 mRNA vaccines known to cause possible allergic reactions, including serious reactions.

Polyethylene glycol may be found in a multitude of products including bowel preparation products for colonoscopy, laxatives, cough syrup, cosmetics, contact lens care solutions, skin care products, and as an additive in some food and drinks.

If you have a history of severe allergies to food, environmental agents or other known allergens, talk to your health care provider before immunization.

NACI recommends that COVID-19 vaccines should not be given at the same time as other (live or inactivated) vaccines. Wait 14 days after any other vaccine before receiving your COVID-19 vaccine. After receiving your second dose of COVID-19 vaccine, wait 28 days before receiving any other vaccine, unless a vaccine is required urgently due to an exposure to a virus such as Hepatitis B. If you previously had a dose of COVID-19 vaccine, finish the COVID-19 vaccine series with the same vaccine.

If you have a fever or any symptoms that could be due to COVID-19, you should not be vaccinated at that time. Talk with your health care provider about your symptoms and getting a COVID-19 test. Your health care provider will advise you when you are able to receive the vaccine.

Possible side effects from the COVID-19 vaccine

In general, the side effects observed during the clinical trials are similar to other vaccines and were mild or moderate, and went away a few days after vaccination. They included things like pain, redness and swelling at the site of injection, body chills, feeling tired and feverish, headache, muscle and joint pain as well as nausea and vomiting. Over-the-counter medicines like

acetaminophen (e.g., Tylenol®) or ibuprofen (e.g., Advil®) may be considered to help manage these adverse events (like pain or fever, respectively), if they occur **after vaccination.**

These are common side effects of vaccines and are not a risk to your health.

For a full list of possible side effects, please review the vaccine manufacturer's product monograph, which is available at: www.manitoba.ca/vaccine or speak with your health care provider.

As with all vaccines, more serious side effects such as allergic reactions are possible. However, these are rare.

Health Canada has conducted a rigorous scientific review of the available medical evidence to assess the safety of the COVID-19 mRNA vaccines. Health Canada did not identify any major safety concerns.

It is important to stay in the vaccination venue for 15 minutes after getting any vaccine in the unlikely event of a severe allergic reaction. This can include hives, difficulty breathing, or swelling of the throat, tongue or lips. This can happen up to an hour after you get vaccinated. If this happens after you leave the immunization clinic, **call 911 or go to the nearest emergency department or health centre for immediate attention.**

Report any serious or unexpected adverse reactions to a health care provider, or call Health Links-Info Santé at 204-788-8200 or 1-888-315-9257 (toll free).

Preparing for your vaccination

- Be sure to follow the signs and instructions at the immunization clinic (e.g., staying two metres away from other people), and remember to stay home if you are sick.
- Wear a short-sleeve shirt or shirt with sleeves that are easy to roll up.
- Be sure you have eaten regularly that day.
- Bring and wear your mask.
- Bring any personal identification required by the immunization clinic, such as your Manitoba health card.
- Bring your immunization record with you.

After getting vaccinated, continue to focus on the fundamentals to help prevent the spread of COVID-19. For more information, visit

<https://www.gov.mb.ca/covid19/updates/prepareandprevent.html#fundamentals>.

Your record of protection

All immunizations, including the COVID-19 vaccine, are recorded on your immunization record in Manitoba's immunization registry. This registry:

- allows health care providers to find out which immunizations you (or the people you care for) have received or need to have.
- may be used to produce immunization records or notify you or your health care provider if a

particular immunization has been missed.

- allows Manitoba Health, Seniors and Active Living and public health officials to monitor how well vaccines work in preventing disease.

The Personal Health Information Act protects your information and/or any people you provide care for. You can choose to have this personal health information hidden from health care providers. For additional information, please contact your local public health office or speak with a health care provider.

If you need information on the immunizations that you or the people you care for have received, contact your health care provider. Contact your local public health office for a copy of your immunization records.

For a listing of public health offices, visit: www.manitoba.ca/health/publichealth/offices.html.

For more information

For more information about COVID-19 or the COVID-19 vaccines, talk to your health care provider. You can also call Health Links–Info Santé in Winnipeg at 204-788-8200 or 1-888-315-9257 (toll free in Manitoba).

Province of Manitoba:

www.manitoba.ca/covid19/index.html

Government of Canada:

<https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html>