

COVID-19 mRNA Vaccines

Pfizer-BioNTech Vaccine and Moderna Vaccine

Public Health Factsheet

May 2021



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 our immune system recognize and fight bacteria and viruses that cause diseases.

After getting vaccinated, continue to focus on the fundamentals including practicing physical distancing, wearing a mask, washing your hands, staying home if you're sick and keep practicing good cough and hand hygiene. Continue to help prevent the spread of COVID-19. For more information, visit www.manitoba.ca/covid19/updates/prepareandprevent.html#fundamentals.

What are the COVID-19 mRNA vaccines and how do they work?

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 and it cannot offer protection against the flu or other viruses or bacteria.**

Early results from clinical trial data suggest that the Pfizer-BioNTech vaccine and the Moderna vaccine have been demonstrated to be 95 per cent and 94 per cent effective, in the short-term in preventing people from getting lab-confirmed COVID-19.

Why were the mRNA vaccines developed?

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 vaccines. Health Canada can do this for promising health products when the potential benefits outweigh the potential risks.

Vaccine effectiveness against COVID-19 variants of concern is evolving. Current emerging data suggests the vaccines offer some level of protection against variants of concern although this varies by vaccine and variant.

These two COVID-19 mRNA vaccines being offered in Manitoba are given by injection (needle) into a muscle of the upper arm. Details about the COVID-19 vaccines are subject to change as the evidence continues to evolve. Talk to your health care provider with any questions you may have about the COVID-19 mRNA vaccines. Closely follow your immunizer or health care provider's guidance, particularly around timing of second doses (as required) and other important health-related information, to achieve the most benefit from your immunization.

¹ The Public Health Agency of Canada

Why has the Manitoba government moved to delaying the second dose of COVID-19 vaccines?

The National Advisory Committee on Immunization has provided guidance to provinces and territories to extend the spacing between the first and second doses to four months. This decision is based on what public health officials are seeing in real-world conditions about the effectiveness of the vaccines currently authorized for use in Canada. These vaccines are providing a significant level of protection, meaning there is a clear advantage to getting vaccine to more people, sooner. This approach will allow more Manitobans to be immunized sooner.

Is the vaccine safe?

Health Canada 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, and will continue to monitor post-marketing studies, additional research and clinical trial data to look for potential safety signals as quickly as possible.

Who should get the COVID-19 mRNA vaccine?

COVID-19 vaccines will eventually be available for all Manitobans. There are multiple COVID-19 vaccines in various stages of development worldwide, with some already approved and available for public use. Each Health Canada approved COVID-19 vaccine may vary with its own indications for use.

While supplies are limited, Manitoba has identified the following priority populations to have access to a COVID-19 vaccine first, based on recommendations from the National Advisory Committee on Immunization (NACI)² and consultation with public health experts across the country:

- health care workers, focusing first on those who provide direct patient care
- congregate living facility staff, such as those who work in shelters or group homes
- congregate living facility residents, starting with licensed personal care homes
- First Nation people
- the general population, starting with older adults

On May 5, 2021, Health Canada updated the Pfizer-BioNTech vaccine age indications for use, which was originally authorized for use in people aged 16 years and older and now, is authorized for use in people aged 12 years and older. Health Canada's approval is based on recent clinical trial data, with a total of 2,260 adolescents aged 12 to 15 years of age included in the trial, which showed that the vaccine was as safe and effective as has been demonstrated in individuals aged 16 and older. Clinical trials and post-marketing studies are ongoing.

People who live with a medical condition (e.g., heart failure, liver disease, chronic kidney disease) can get the vaccine. If you are immunosuppressed because of disease or treatment, have an autoimmune condition, are pregnant and/or breastfeeding, refer to the appropriate factsheet for information about the risks and benefits of immunization at: www.manitoba.ca/covid19/vaccine/resources.html.

Talk to your immunizer or health care provider if you have any questions about your medical conditions or if you are uncertain if you are immunosuppressed or have an autoimmune condition. Your immunizer can give you more information based on what we know from early clinical trial data.

² 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 vaccine. 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 the virus and recovered. In the context of limited vaccine supplies, NACI recommends waiting three months before getting immunized. Speak with your health care provider about when the best time is for you to get vaccinated.

For information about Manitoba's COVID-19 vaccine eligibility criteria, please visit: www.manitoba.ca/covid19/vaccine/eligibility-criteria.html.

Who should NOT get the COVID-19 mRNA vaccine?

Infants and children under the age of 12 should not be given the Pfizer-BioNTech vaccine. People under the age of 18 should not be given the Moderna vaccine.

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

Polyethylene glycol (PEG) is an ingredient in both the Pfizer-BioNTech vaccine and Moderna vaccine. It is a potential allergen known to cause possible allergic reactions, including serious reactions. Polyethylene glycol may be found in a multitude of products including bowel preparation products for colonoscopies, laxatives, cough syrup, cosmetics, contact lens care solutions, skin care products, and as an additive in some food and drinks. People with PEG allergies may also be allergic to polysorbate 80. If you are allergic to PEG or polysorbate 80, regardless of the severity of reaction, speak with your health care provider before immunization.

Tromethamine (trometamol or Tris) is an ingredient of the Moderna vaccine and is a potential allergen known to cause possible allergic reactions, including serious reactions. Tromethamine may be found in certain medications. If you are allergic to tromethamine, regardless of the severity of reaction, speak with your health provider before getting immunized with the Moderna vaccine.

You must be observed for a minimum of 15 minutes after 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 a dose of COVID-19 vaccine, wait 28 days before receiving any other vaccine, unless a vaccine is required urgently because of 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 product.

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.

What are some possible side effects of the COVID-19 vaccine?

In general, the side effects observed during the clinical trials were similar to other vaccines. The side effects were generally 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
 - 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 the vaccines and are not a risk to your health.

The safety signal of blood clots after vaccination that has been seen rarely with the viral vector COVID-19 vaccines (AstraZeneca and Janssen) has not been detected to date with the mRNA vaccines.

For a full list of possible side effects, please review the vaccine manufacturer's product monograph 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.

It is important to stay in the immunization clinic for 15 minutes after getting any vaccine in the unlikely event of a severe allergic reaction. You may need to stay in the clinic for 30 minutes if you have had a serious allergic reaction to a vaccine in the past. 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 in Manitoba).

Preparing for your vaccination

Be sure to follow the signs and instructions at the immunization clinic (e.g., stay two metres away from other people), and remember to stay home if you are sick.

- Wear a short-sleeve shirt.
- 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 Family Registration Card.

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

For more information, visit:

www.manitoba.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 and Seniors Care as well as public health officials to monitor how well vaccines work in preventing disease

The Personal Health Information Act protects your information and the information for 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.

An official Manitoba Government COVID-19 Immunization Record can be obtained online at: <https://sharedhealthmb.ca/covid19/test-results/>. You will need your Manitoba Health Family Registration Card to register and access your record.

If you need information on the other immunizations that you or the people you care for have received, contact your health care provider or 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.

Where can I find 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).

Or visit:

Province of Manitoba:

www.manitoba.ca/covid19/index.html

Government of Canada:

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