

COVID-19 Vaccine: Information for Pregnant and Breastfeeding Individuals

Public Health Factsheet
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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.

Are pregnant individuals at greater risk of COVID-19?

Evidence related to pregnancy and COVID-19 risk is limited but evolving, with thousands of well-documented cases around the world. In general, pregnancy can place people at higher risk of serious complications from respiratory infections because of normal changes occurring in the body that affect the respiratory system. Some respiratory infections (e.g., influenza and COVID-19) during pregnancy may also lead to other adverse outcomes, such as premature labor and delivery.

As of February 7, 2021, there have been 323 pregnant individuals diagnosed with COVID-19 in Manitoba, and more than 3,220 pregnant individuals diagnosed across Canada. (Updated data is available at <https://ridprogram.med.ubc.ca/cancovid-preg/>). Early data suggests that in general, most pregnant individuals who acquire COVID-19 in pregnancy experience mild to moderate symptoms and deliver healthy babies at full-term. It is presumed that the rate of pregnant individuals experiencing no symptoms of COVID-19 (i.e., asymptomatic) is quite common.

There is limited evidence to suggest that pregnancy is an independent risk factor for severe COVID-19. However, the data shows that some pregnant people are at increased risk of severe COVID-19, including requiring admittance to the intensive care unit (ICU) and needing mechanical ventilation. The risk factors for experiencing severe COVID-19 are:

- age (35 years and older)
- asthma
- obesity
- pre-pregnancy diabetes
- pre-pregnancy high blood pressure
- heart disease

To date, there is no data suggesting that a pregnant person with COVID-19 can pass the infection to the fetus during pregnancy or to the baby at delivery, and the virus has not been found in breastmilk. However in the absence of data, the possibility for these outcomes cannot be excluded.

Like everyone else, pregnant people need to protect themselves from exposure to COVID-19, seek appropriate testing and call their health care provider if they develop symptoms.

¹The Public Health Agency of Canada

This information is current as of March 2021.

Should individuals who are pregnant, planning to become pregnant or are breastfeeding get the COVID-19 vaccine?

Early phases of the COVID-19 vaccine clinical trials did not include participants who were pregnant. However, clinical trials are ongoing and some manufacturers have started new trials that include pregnant individuals. As more evidence becomes available, vaccine recommendations will be reviewed and updated accordingly.

The Society of Obstetricians and Gynecologists of Canada (SOGC)² states that vaccination should be offered to pregnant and/or breastfeeding individuals who are at high-risk of infection and/or experiencing serious complications from COVID-19. This is because the documented risk of not getting the COVID-19 vaccine is greater than the theorized risk of getting the vaccine.

The National Advisory Committee on Immunization (NACI)³ recommends that COVID-19 vaccines may be offered to pregnant and/or breastfeeding individuals if a risk assessment shows the benefits outweigh the potential risk for the individual and the fetus/infant. In addition, informed consent must include discussion about the absence of evidence on the use of COVID-19 vaccine in this population.

- There is limited evidence that pregnancy alone is an independent risk factor for severe COVID-19. However, age (older than 35 years old), asthma, obesity, pre-pregnancy diabetes, pre-pregnancy high blood pressure and heart disease are independent risk factors for severe COVID-19.
- There is very limited data on the use of the COVID-19 vaccine in pregnant and/or breastfeeding individuals. A small number of individuals were discovered to be pregnant after being vaccinated in the original clinical trials. They are being followed, and to date have reported no negative effects.
- There is no evidence to determine whether vaccination poses a risk or provides benefit to the fetus and/or breastfed baby.
- There is no data on whether COVID-19 vaccine can be found in human milk.
- 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 receiving the COVID-19 vaccine series.

The first Health Canada-approved COVID-19 vaccines are mRNA vaccines. Could mRNA affect a growing fetus?

The body's cells use messenger RNA (mRNA) all the time. These are like recipes and the cell uses them to build proteins. There is no mechanism for mRNA to get into the centre of the cell (nucleus) where the genes of the fetus are stored. If a sample of the vaccine mRNA was to be taken up by fetal cells, the most likely effect is that their cells would make the same proteins that adult cells do. However, it is known that fetal immune systems are not mature, and may not build any antibodies in response to those proteins. At this time, however, this is based on previous vaccine experiences and is not proven by data.

² The Society of Obstetricians and Gynecologists of Canada is a national specialty organization comprised of health professionals working in the field of women's sexual and reproductive health.

³ Canada's National Advisory Committee on Immunization (NACI) is an independent committee of recognized experts that provides informed advice on the use of vaccines in Canada. After Health Canada approves a vaccine, NACI critically evaluates all available evidence to make recommendations about its optimal use.

COVID-19 mRNA vaccines cannot change a person's DNA.

Vaccines recommended during pregnancy or postpartum, such as the seasonal influenza vaccine and the pertussis vaccine, are given for the mother's benefit. However, they are proven to send antibodies across the placenta to the fetus or in breastmilk to an infant. These stay in newborn circulation for the first few months of life and provide disease protection to the newborn. Antibodies from maternal COVID-19 infection have been detected in a small number of newborns and have been observed in breastmilk. It is not known at this time if this new vaccine will provide similar results.

What if a person becomes pregnant before finishing a two dose COVID-19 vaccine series?

If pregnancy is determined after the first dose of the COVID-19 vaccine and a second dose is required, the second dose should be delayed until after pregnancy, unless risk factors for increased exposure or severe COVID-19 are present and informed consent for vaccination is obtained.

How do pregnant individuals generally respond to vaccines?

In general, pregnant individuals have the same antibody response to a vaccine as non-pregnant individuals. This means they can generate the same number of protective antibodies after being vaccinated.

There is an initial period of inflammation after being vaccinated, as the immune system responds to a foreign substance. This is non-specific and accounts for the fatigue, headache and occasional low-grade fever that can follow any vaccination. In general, pregnant individuals have a slightly decreased inflammatory response and often report fewer side effects.

Why are some vaccines not permitted in pregnancy?

A few specific conditions, such as polio and rubella, are prevented with live (attenuated) vaccines. There is a concern that these "live" viruses could cross the placenta and harm the fetus whose own immune system is not mature enough to defend against them. However to date, there have been no cases that prove this theory. Pregnant individuals who were given live vaccines before realizing they were pregnant (sometimes more than halfway through pregnancy), had no known change in obstetrical outcomes and the newborns were born without signs of harm.

The COVID-19 vaccines are NOT live vaccines.

Some people have dangerous allergic reactions to a vaccine.

Is pregnancy likely to cause more of these reactions?

In most cases, allergies seen with vaccination are related to the ingredients in the vaccine. These allergies are rare and a severe allergic reaction (anaphylaxis) is even more rare. For information about any of the COVID-19 vaccine's ingredients, please review the vaccine manufacturer's product information at www.manitoba.ca/vaccine or speak with your primary care provider.

There is no evidence that pregnancy will increase allergic sensitivities or reactions.

How are COVID-19 vaccine recommendations made in Manitoba?

Manitoba's Vaccine Implementation Task Force, comprised of vaccine experts from Manitoba Health and Seniors Care, critically conducts a review of:

- provincial epidemiology, to guide determination of priority populations
- clinical trial data on safety and effectiveness. (*Note that for every COVID-19 vaccine, there are several clinical trials ongoing from various countries around the world*)
- post-marketing studies, including reports of adverse events following immunization
- plans and practices of other jurisdictions in Canada and around the globe
- summaries and recommendations from national and international expert committees, including NACI and SOGC

Experts from the medical community across the province are consulted in various stages of the review.

The COVID-19 landscape is constantly changing as we learn more about the disease and the vaccines that protect against it. Vaccine recommendations are subject to change as the evidence continues to evolve. Talk to your immunizer or health care provider for the most up-to-date information.

For more information

Speak with your health care provider. If you do not have a health care provider, call Health Links – Info Santé in Winnipeg at **204-788-8200** or **1-888-315-9257** (toll free in Manitoba).

Or, access the following websites:

The Society of Obstetricians and Gynecologists of Canada: www.sogc.org/

The Manitoba Government: www.manitoba.ca/covid19/index.html

The National Advisory Committee on Immunization: www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci.html