

I am pregnant or breastfeeding. Should I get the COVID-19 Vaccine?

COVID-19 vaccination (including booster doses) is strongly recommended during pregnancy. Getting vaccinated, as soon as possible, is the safest choice to protect yourself and your baby from the known risks of COVID-19 infection.

What are the risks of COVID-19 during pregnancy for you and your baby?



COVID-19 positive pregnant people are more likely to get very unwell and need intensive care in hospital.

- Most pregnant people with COVID-19 will have mild symptoms and fully recover; however, some will develop moderate to severe COVID illness and need to be hospitalized.
- If you are COVID-19 positive and pregnant, your risk of hospitalization, intensive care unit admission and need for life support is greater than if COVID-19 positive and not pregnant.
- It is possible to have ongoing medical complications after your COVID-19 infection has passed.
- If you have any type of COVID-19 infection in pregnancy, there is an impact on pregnancy outcomes: your risk of stillbirth, preterm birth, high blood pressure, caesarean delivery and low birth weight are significantly increased. Your baby may be admitted to the neonatal unit.
- COVID-19 infection in pregnancy increases your risk of medical complications and death.

What are the benefits of COVID-19 vaccination for you and your baby?



COVID-19 vaccines are highly effective in preventing infection and severe illness.

- The mRNA vaccines are effective at reducing the risk of a COVID-19 infection caused by any variants of the virus (e.g., Omicron) similarly in both pregnant and non-pregnant people.
- Booster doses decrease the chance of having a symptomatic COVID-19 infection, the severity of the COVID-19 illness and the chance of being hospitalized because of COVID-19.
- Antibodies created by the COVID-19 vaccine can offer protection to your baby and are passed through the placenta and/or in your breastmilk.



The mRNA COVID-19 vaccines and boosters doses are safe in pregnancy.

- Several studies with large numbers of pregnant people have shown that vaccination immediately before and/or during any time in pregnancy has no impact on pregnancy outcomes.
 - **NO** increased risk of miscarriage, preterm birth, stillbirth, growth restriction, high blood pressure during pregnancy, medical complications of pregnancy or death.

What are the risks of getting the COVID-19 vaccine?

Pregnant and breastfeeding individuals who receive the mRNA (Pfizer or Moderna) vaccines experience the same side effects of vaccination as non-pregnant individuals.

In more than 35,000 pregnant and/or breastfeeding people who were monitored at the time of COVID-19 vaccination:

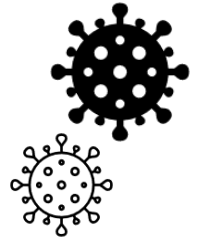
- The common side effects were:

PAIN AT THE INJECTION SITE · FATIGUE · HEADACHE · MUSCLE PAIN

- Less than 10% of pregnant people experienced a fever.
- Allergic reactions/anaphylaxis (serious life-threatening allergic reaction) were **RARE**.
- Very rare cases of myocarditis (inflammation of the heart muscle) and pericarditis (inflammation of the lining around the heart) following vaccination were reported and resolved without any complication.

The mRNA COVID-19 vaccines:

- X Do NOT** contain any live virus.
- X Do NOT** contain any mercury, aluminum, formaldehyde or substances harmful to you and/or your baby.
- X Do NOT** contain any human and/or animal blood or byproduct(s).
- X CANNOT** be measured in your bloodstream; thus, the baby is **NOT** exposed to the vaccine.



There are extremely few contraindications to taking the mRNA COVID vaccine.

- Pregnancy and/or breastfeeding is NOT a medical reason to not take the vaccine.
- If you have had a COVID-19 infection, you are still at risk of re-infection. Vaccination is recommended for strong and long-lasting protection.

What do the experts recommend?

The **National Advisory Committee on Immunization (NACI)** strongly recommends that a complete vaccine series with an mRNA COVID-19 vaccine should be offered to people in the authorized age group who are pregnant or breastfeeding. Booster doses are also recommended for pregnant or breastfeeding people.

The Society of Obstetricians and Gynaecologists of Canada (SOGC) recommends that all individuals who are pregnant or those trying to become pregnant should receive all COVID-19 vaccination doses, including the booster dose, when eligible.



In Ontario, all pregnant individuals are eligible and prioritized to be vaccinated as soon as possible, at any stage of pregnancy. The same applies to receiving a booster dose three months after their last dose.

What else should I think about to help me decide?

Make sure you understand as much as you can about COVID-19, vaccines and booster doses. Ask a trusted source, such as your obstetrician, midwife, family doctor or nurse, any questions.



The risk of getting COVID-19 is higher if:

- The dominant variant circulating (i.e., Omicron) is more easily passed from person-to-person
- You live in a community with a lot of COVID-19 cases
- You have regular contact with people outside of your home
- You live in a crowded housing situation
- You, or a member of your household, work in a high-risk environment (e.g., you are a front-line essential worker or healthcare worker)

The risk of developing severe illness from COVID-19 in pregnancy is higher if:

- You have medical problems (e.g., pre-pregnancy diabetes, pre-pregnancy high blood pressure, a compromised immune system, kidney disease, liver disease, heart disease and/or asthma)
- You are overweight
- You are a smoker
- You are 35 years of age or older
- You are in the last three months (third trimester) of your pregnancy

It's safer to get vaccinated (and boosted) as soon as possible, especially if you are at an even higher risk of getting COVID-19 and developing severe illness. The known risks of severe illness from COVID-19 are greater than the known risks of the vaccine.

How can I protect myself and my baby from COVID-19?

- Wear a well-fitted, high-quality mask
- Wash your hands often
- Avoid crowded spaces and practice physical distancing
- Self monitor for symptoms of COVID-19
- Reduce number of close contacts
- Continue receiving healthcare before, during and after your pregnancy
- Get vaccinated (including booster dose) and encourage household members to do the same



If you choose to wait, you need to know that without the vaccine, you are at higher risk of severe illness from COVID-19.

Is it safe to get vaccinated while breastfeeding?



COVID-19 vaccines can be safely given to people who are breastfeeding; the vaccine mRNA is not detectable in your breast milk.

- Antibodies produced by the breastfeeding person after COVID-19 vaccination have been shown to pass into the breastmilk and may give your baby some protection against COVID-19.
- Receiving a COVID-19 vaccine while breastfeeding should not disrupt your breastfeeding and does not have an adverse impact on your baby.

What if I get pregnant after getting vaccinated?



If you are pregnant or become pregnant soon after getting the first or second dose of the vaccine, you should complete the full series and receive your booster dose.

- Several studies show there is no impact of COVID-19 vaccination prior to and at any time, in the first trimester on the risk of miscarriage or any adverse pregnancy outcome.

What if I am planning a pregnancy?

There is no evidence to suggest that COVID-19 vaccines have any effect on your fertility or chances of becoming pregnant. Fertility treatment is not a medical reason that prevents you from getting vaccinated.

Summary

COVID-19 positive pregnant people are more likely to get very unwell and need intensive care in hospital.

COVID-19 vaccines are highly effective in preventing infection and severe illness.

The mRNA COVID-19 vaccines and boosters doses are safe in pregnancy.

Antibodies created by the COVID-19 vaccine can offer protection to your baby through the placenta or breastmilk.



Do you have more questions?

Speak to your healthcare provider for more information.

Your feedback is important to us!

Please complete an online survey by scanning the QR code.



Patient Information Sheet: “I am pregnant or breastfeeding. Should I get the COVID-19 Vaccine?”

Intended Use

This decision aid is intended for use by pregnant people or those breastfeeding who are considering getting the COVID-19 vaccine, as well as their healthcare providers, friends and family. This tool provides basic information only and is not intended to provide or take the place of medical advice, diagnosis or treatment. This decision aid is intended to help in making an informed choice about whether or not to get the COVID-19 vaccine before, during or after pregnancy or breastfeeding. This resource has been modified from the decision aid produced by the Massachusetts Shared Decision Making: COVID-19 Vaccination in Pregnancy working group at the [University of Massachusetts Medical School – Baystate Health](#).

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References

Allotey, J., Stallings, E., Bonet, M., Tap, M., Chatterjee, S., Kew, T., ... & PregCOV-19 Living Systematic Review Consortium. (2020). Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: Living systematic review and meta-analysis. *BMJ*, 370: m3320. Available at <https://www.bmj.com/content/370/bmj.m3320>

Better Outcomes Registry & Network (BORN) Ontario. (2021). COVID-19 vaccination during pregnancy in Ontario. Surveillance Report #3, Reporting Interval December 14, 2020 to September 30, 2021. Available at https://www.bornontario.ca/en/whats-happening/resources/Documents/BORN-COVID-19-Vaccination-during-pregnancy-in-Ontario_Report3.pdf

Bookstein Peretz, S., Regev, N., Novick, L., Nachshol, M., Goffer, E., Ben-David, A., ... & Yinon, Y. (2021). Short-term outcome of pregnant women vaccinated with BNT162b2 mRNA COVID-19 vaccine. *Ultrasound in Obstetrics & Gynecology*, 58(3), 450-456. Available at <https://obgyn.onlinelibrary.wiley.com/doi/full/10.1002/uog.23729>

Centers for Disease Control and Prevention (CDC). Updated December 6, 2021. COVID-19: Pregnancy or breastfeeding. Available at <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/pregnancy.html>

CDC. Updated December 28, 2021. COVID-19: Frequently asked questions. Available at <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html>

CDC. Released January 7, 2022. Morbidity and Mortality Weekly Report (MMWR). Receipt of COVID-19 vaccine during pregnancy and preterm or small-for-gestational-age at birth—Eight

integrated health care organizations, United States, December 15, 2020-July 22, 2021. Available at <https://www.cdc.gov/mmwr/volumes/71/wr/mm7101e1.htm>

CDC. Released November 2, 2020. Morbidity and Mortality Weekly Report (MMWR), Birth and infant outcomes following laboratory-confirmed SARS-CoV-2 infection in pregnancy — SET-NET, 16 Jurisdictions, March 29–October 14, 2020. Available at <https://www.cdc.gov/mmwr/volumes/69/wr/mm6944e2.htm>

Dagan, N., Barda, N., Biron-Shental, T., Majov-Assif, M., Key, C., Kohane, I. S., ... & Balicer, R. D. (2021). Effectiveness of the BNT162b2 mRNA COVID-19 vaccine in pregnancy. *Nature Medicine*, 1-3. Available at <https://www.nature.com/articles/s41591-021-01490-8>

Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD). (Revised December 20, 2021). National Library of Medicine (US); 2006-. COVID-19 vaccines. Available at https://www.ncbi.nlm.nih.gov/books/NBK565969/pdf/Bookshelf_NBK565969.pdf

Figueiro-Filho, E. A., Yudin, M. & Farine, D. (2020). COVID-19 during pregnancy: An overview of maternal characteristics, clinical symptoms, maternal and neonatal outcomes of 10,996 cases described in 15 countries. *Journal of Perinatal Medicine*, 48(9), 900-911. Available at <https://pubmed.ncbi.nlm.nih.gov/33001856/>

Golan, Y., Prael, M., Cassidy, A. G., Gay, C., Wu, A. H., Jigmeddagva, U., ... & Gaw, S. L. (2021). COVID-19 mRNA vaccination in lactation: assessment of adverse events and vaccine related antibodies in mother-infant dyads. *Frontiers in immunology*, 4596. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8595828/>

Goldshtein, I., Nevo, D., Steinberg, D. M., Rotem, R. S., Gorfine, M., Chodick, G., & Segal, Y. (2021). Association between BNT162b2 vaccination and the incidence of SARS-CoV-2 infection in pregnant women. *JAMA*, 326(8), 728-735. Available at <https://jamanetwork.com/journals/jama/fullarticle/2782047>

Government of Canada. Immunization in pregnancy and breastfeeding: Canadian Immunization Guide. Updated December 24, 2020. Available at <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations/page-4-immunization-pregnancy-breastfeeding.html>

Gray, K. J., Bordt, E. A., Atyeo, C. et al. (2021). Coronavirus disease 2019 vaccine response in pregnant and lactating women: A cohort study. *AJOG*. Available at [https://www.ajog.org/article/S0002-9378\(21\)00187-3/fulltext](https://www.ajog.org/article/S0002-9378(21)00187-3/fulltext)

Jafari, M., Pormohammad, A., Sheikh Neshin, S. A., Ghorbani, S., Bose, D., Alimohammadi, S., ... & Zarei, M. (2021). Clinical characteristics and outcomes of pregnant women with COVID-19 and comparison with control patients: A systematic review and meta-analysis. *Reviews in medical virology*, e2208. Available at <https://pubmed.ncbi.nlm.nih.gov/33387448/>

Juncker, H. G., Mulleners, S. J., van Gils, M. J., de Groot, C. J., Pajkrt, D., Korosi, A., ... & van Keulen, B. J. (2021). The levels of SARS-CoV-2 specific antibodies in human milk following vaccination. *Journal of Human Lactation*. Available at <https://journals.sagepub.com/doi/full/10.1177/08903344211027112>

Khalil, A., Kalafat, E., Benlioglu, C., O'Brien, P., Morris, E., Draycott, T., ... & Magee, L. A. (2020). SARS-CoV-2 infection in pregnancy: A systematic review and meta-analysis of clinical features and pregnancy outcomes. *EClinicalMedicine*, 25, 100446. Available at [https://www.thelancet.com/pdfs/journals/eclinm/PIIS2589-5370\(20\)30190-5.pdf](https://www.thelancet.com/pdfs/journals/eclinm/PIIS2589-5370(20)30190-5.pdf)

Kharbanda, E. O., Happala, J., DeSilva, M., Vasquez-Benitez, G., Vesco, K. K., Naleway, A. L., & Lipkind, H. S. (2021). Spontaneous abortion following COVID-19 vaccination during pregnancy. *JAMA*. Available at <https://jamanetwork.com/journals/jama/fullarticle/2784193>

Knight, M., Ramakrishnan, R., Bunch, K., Vousden, N., Kurinczuk, J., Dunn, S....& Semple, C. (2021). Females in hospital with SARS-CoV-2 infection, the association with pregnancy and pregnancy outcomes: A UKOSS/ ISARIC/CO-CIN investigation. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/977287/s1171-ukoss-isaric-co-cin-covid-19-young-females-pregnancy-report.pdf

Mahajan, N. N., Pophalkar, M., Patil, S., Yewale, B., Chaaithanya, I. K., Mahale, S. D., & Gajbhiye, R. K. (2021). Pregnancy outcomes and maternal complications during the second wave of coronavirus disease 2019 in India. *Obstetrics and Gynecology*, 138(4), 660-662. Available at <https://pubmed.ncbi.nlm.nih.gov/34233345/>

McLaurin-Jiang, S., Garner, C. D., Krutsch, K., & Hale, T. W. (2021). Maternal and child symptoms following COVID-19 vaccination among breastfeeding mothers. *Breastfeeding Medicine*, 16(9), 702-709. Available at <https://www.liebertpub.com/doi/pdfplus/10.1089/bfm.2021.0079>

Money, D. (June 3, 2021). Canadian surveillance of COVID-19 in pregnancy: Epidemiology, maternal and infant outcomes. Report #4. Available at <https://ridprogram.med.ubc.ca/cancovid-preg/>

Morgan, J. A., Biggio Jr, J. R., Martin, J. K., Mussarat, N., Chawla, H. K., Puri, P., & Williams, F. B. (2021). Maternal outcomes after severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in vaccinated compared with unvaccinated pregnant patients. *Obstetrics & Gynecology*, 10-1097.

National Advisory Committee on Immunization (NACI). Updated October 22, 2021. Recommendations on the use of COVID-19 vaccines. Advisory Committee Statement. Available at <https://www.canada.ca/content/dam/phac-aspc/documents/services/immunization/national-advisory-committee-on-immunization-naci/recommendations-use-covid-19-vaccines/recommendations-use-covid-19-vaccines-en.pdf>

Ontario COVID-19 Science Advisory Table. (September 13, 2021). The incidence, severity, and management of COVID-19 in critically ill pregnant individuals. Available at <https://covid19-sciencetable.ca/sciencebrief/the-incidence-severity-and-management-of-covid-19-in-critically-ill-pregnant-individuals/>

Ontario Ministry of Health. (Updated March 11, 2021). About COVID-19 Vaccines. Available at https://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/vaccine/COVID-19_about_vaccines.pdf

Ontario Ministry of Health. (Updated December 31, 2021). COVID-19 Vaccination Recommendations for Special Populations. Available at https://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/vaccine/COVID-19_vaccination_rec_special_populations.pdf

Ontario Ministry of Health. (Updated December 14, 2021). COVID-19 Vaccine Information Sheet (age 12+). Available at https://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/vaccine/COVID-19_vaccine_info_sheet.pdf

Ontario Ministry of Health. (Updated December 16, 2021). COVID-19 Vaccine Third Dose Recommendations. Available at

https://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/vaccine/COVID-19_vaccine_third_dose_recommendations.pdf

Prahl, M., Golan, Y., Cassidy, A. G., Matsui, Y., Li, L., Alvarenga, B., ... & Gaw, S. L. (2021). Evaluation of transplacental transfer of mRNA vaccine products and functional antibodies during pregnancy and early infancy. *medRxiv*. Available at <https://www.medrxiv.org/content/10.1101/2021.12.09.21267423v1.full.pdf>

Sajadi, M. M., Shokatpour, N., Bathula, A., Tehrani, Z., Lankford, A., Purcell, M., ... & Grazioli, A. (2021). Maternal transfer of IgA and IgG SARS-CoV-2 specific antibodies transplacentally and via breastfeeding. *medRxiv*. Available at <https://www.medrxiv.org/content/10.1101/2021.12.21.21267733v1.full-text>

Shimabukuro, T.T., Kim, S. Y., Myers, T.R., Moro, P. L., Oduyebo, T., Panagiotakopolous, L., ... & Meaney-Delman, M. D.. (2021). Preliminary findings of mRNA Covid-19 vaccine safety in pregnant persons. *New England Journal of Medicine*, 384(24), 2273-2282. Available at <https://www.nejm.org/doi/full/10.1056/NEJMoa2104983>

Society of Obstetricians and Gynaecologists of Canada (SOGC). (Revised and reaffirmed November 4, 2021). SOGC Statement on COVID-19 vaccination in pregnancy. Available at https://www.sogc.org/common/Uploaded%20files/Latest%20News/SOGC_Statement_COVID-19_Vaccination_in_Pregnancy.pdf

SOGC. Released April 20, 2021. SOGC Statement on the COVID-19 vaccines and rare adverse outcomes of thrombosis associated with low platelets. Available at https://www.sogc.org/en/content/featured-news/SOGC_Statement_on_the_COVID-19_vaccines_and_rare_adverse_outcomes_of_%20thrombosis.aspx

Stock, S., Carruthers, J., Calvert, C., Denny, C., Donaghy, J., Goulding, A., ... & Wood, R. (2021). SARS-CoV-2 infection and COVID-19 vaccination rates in pregnant women in Scotland. *Nature Medicine*. Available at <https://www.nature.com/articles/s41591-021-01666-2>

Theiler, R. N., Wick, M., Weaver, A., Mehta, R., Virk, A., & Swift, M. (2021). Pregnancy and birth outcomes after SARS-CoV-2 vaccination in pregnancy. *American Journal of Obstetrics and Gynecology MFM*. Available at <https://pubmed.ncbi.nlm.nih.gov/34425297/>

Villar, J., Ariff, S., Gunier, R. B., Thiruvengadam, R., Rauch, S., Kholin, A., ... & Papageorgiou, A. T. (April 22, 2021). Maternal and neonatal morbidity and mortality among pregnant women with or without COVID-19 infection: The INTERCOVID multinational cohort study. *JAMA Pediatrics*, 178(8), 817-826. Available at <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2779182>

Wei, S. Q. Bilodeau-Bertrand, M., Liu, S., & Auger, N. (2021). The impact of COVID-19 on pregnancy outcomes: A systematic review and meta-analysis. *CMAJ*, 193(16), E540-E548. Available at <https://www.cmaj.ca/content/193/16/E540>

Zambrano, L. D., Ellington, S., Strid, P., et al. (2020). Update: Characteristics of symptomatic women of reproductive age with laboratory-confirmed sars-cov-2 infection by pregnancy status - United States, January 22- October 3, 2020. *MMWR Morb Mortal Wkly Rep*, 69(55),1641-1647. Available at <https://pubmed.ncbi.nlm.nih.gov/33151921/>

Zauche, L. H., Wallace, B., Smoots, A. N., Olson, C. K., Oduyebo, T., Kim, S. Y., ... & Ellington, S. R. (2021). Receipt of mRNA Covid-19 Vaccines and Risk of Spontaneous Abortion. *New England Journal of Medicine*. Available at <https://www.nejm.org/doi/full/10.1056/NEJMc2113891>