

## **Information tool – COVID-19 Vaccination during pregnancy and breastfeeding**

*Reviewed Jan. 8, 2021*

### **Introduction:**

- The 2 available COVID-19 Vaccines (Pfizer and Moderna) have NOT been tested in pregnant or breast feeding women.
- Your options for vaccination:
  1. Get the vaccine when available
  2. Wait for more information to be available, wait for pregnancy and/or breast feeding to be complete

### **1. What is the risk of COVID-19 in pregnancy?**

- Rate of COVID-19 in pregnancy in Canada: ~ 0.45% with 2592 cases of COVID-19 in pregnancy reported from March until January 2021 (Reference #1)
- The rate of COVID-19 pregnant women is NOT higher than the rate in non-pregnant women (Reference #2). Therefore: (1) Pregnancy NOT a risk factor for COVID-19 (2) the safety precautions are effective at lowering risk of COVID-19 in pregnant women
- Impact of COVID-19 in pregnancy (Reference #1,3,4,5,6)
  - 85-90% pregnant patients with COVID-19 will have a mild respiratory illness, these patients are not hospitalized for COVID-19 reasons, the illness had no impact on pregnancy outcome, the fetus and the neonate.
  - ~5-11% pregnant patients have a moderate to severe illness- they may be hospitalized due to COVID-19 (6.5x greater rate of hospitalization compared with non-pregnant women with COVID-19)
  - ~ 2.3% pregnant patients with COVID-19 were admitted to the ICU (8.5 x greater rate of IUC admission compared with non-pregnant women with COVID-19)
  - Pregnant women with moderate to severe illness had pre-existing risk factors:
    - Elevated BMI > 30
    - Medical illness: diabetes, hypertension, immune compromise, asthma, smoking
    - Black, Asian, Minority Ethnic Groups
    - Third trimester of pregnancy
  - COVID-19 was associated with an increased rate of preterm birth (in Canada, an increase from 8% to 15%)- however, the preterm birth was medically indicated by concern for maternal and/or fetal well-being (not an increase in spontaneous preterm birth), at a mean gestational age > 34 w GA (a gestational age of low risk of adverse neonatal outcome) and was not associated with an increased rate of NICU admission

- No other pregnancy complications have been reported with COVID-19 in pregnancy
- 5-8% neonates born to moms who have had COVID-19 at any time in pregnancy (including at the time of delivery) test positive for COVID-19 – most babies are asymptomatic, 2/3 attributed to post-natal acquisition from mother, not infection in pregnancy or with delivery. (Reference #7)

## **2. What are the benefits of the vaccine?**

- No serious, life threatening side effects of either vaccine have been reported
- After one dose, the vaccine appears to be 50% effective. After 2 doses, the vaccine is 95% effective at preventing a coronavirus infection/COVID-19.
- The vaccine does not give you COVID-19 and does not contain any ingredients known to be harmful.

## **3. What are the risks of the vaccine?**

- The reported side effects of the vaccine were: • injection site reactions (sore arm or redness) (84%) • fatigue (62%) • headache (55%) • muscle pain (38%) • chills (32%) • joint pain (24%) • fever (14%) with 1% fever > 38.5°C.
- The vaccines have NOT been tested in pregnant or breastfeeding women. There may be side effects that are unique to pregnant women, the effectiveness of the vaccine may be less in pregnant women.

## **4. What do the experts recommend?**

The [\*Society of Obstetricians and Gynecologists of Canada\*](#) states: For individuals who are at high risk of infection and/or morbidity from COVID-19, the documented risk of not getting the COVID-19 vaccine outweighs the theorized and undescribed risk of being vaccinated during pregnancy and vaccination should be offered.

[\*Health Canada\*](#) advised COVID-19 vaccine should not be offered to the populations excluded from clinical trials until further evidence is available. However, if a risk assessment deems that the benefits of vaccine outweigh the potential risks for the individual or for the fetus/infant (in the case of pregnancy/breastfeeding) and if informed consent includes discussion about the insufficient evidence in this population, then the vaccine could be offered.

[\*PREVENT \(Pregnancy Research Ethics for Vaccines, Epidemics, and New Technologies\)\*](#) Working Group states the absence of evidence and the mere theoretical or even documented risk of fetal harm is generally not sufficient to justify denying pregnant women access to a vaccine in

an outbreak or epidemic. During an epidemic, the default should be to offer vaccines to pregnant women alongside other affected populations.

[Provincial Council for Maternal and Child Health](#) (PCMCH Ontario): those who are breastfeeding, pregnant, or those who plan to be pregnant, should discuss their eligibility for the COVID-19 vaccine with their care provider. Currently there are neither data on safety of administration in pregnancy nor a biological rationale for harm. PCMCH advises that individuals who may be pregnant, are pregnant, or are breastfeeding have the right to receive the vaccine, should they choose to after a discussion with their care provider. This discussion should include information on risks and benefits of the vaccine, an assessment of whether the vaccine's benefits would outweigh the potential risks to the person, and/or fetus, and a disclosure that there is not yet evidence of the vaccine's effects in pregnant and lactating individuals. After a thorough discussion with their provider, each person is in a better position to make an informed choice on whether to be vaccinated.

## **5. How can I make my decision?**

1. Make sure you understand as much as you can about COVID and about the vaccine. Ask a trusted source, like your midwife or doctor.
2. Make sure you understand your personal risk- ask yourself the following questions:
  - Are you in contact with people who do not follow safety precautions (masking and social distancing)?
  - Do you work in a high risk environment: front line health care worker?
  - Are you overweight (BMI > 30)?
  - Do you have any pre-existing medical conditions: diabetes, hypertension, immune compromise ....?
  - Do you identify as a member of Black, Asian or minority ethnic group?
  - Is the prevalence of COVID-19 high in the community you live in (are you experiencing a lockdown...)?

***If you are at a higher risk of getting COVID, perhaps the choice for vaccination is the correct choice for you ....***

- Are you able to maintain safety precautions for the duration of your pregnancy (masking, social distancing, essential interactions only)?
- Are you nervous or anxious about the vaccine?
- Do you NOT have any identified risk factors for COVID-19?
- Do you live in a remote area, low prevalence rate of COVID-19?
- Have you had a serious /allergic reaction to previous vaccinations?

***If you are at a lower risk of getting COVID, perhaps the choice to make for more information regarding vaccination OR waiting until pregnancy/breast feeding is completed may be the correct choice for you***

## **6. What about breastfeeding?**

The Society of Obstetricians and Gynecologists reports that there is no reason to believe that the vaccine affects the safety of breastmilk. Antibodies formed from vaccines given during pregnancy do pass into the breastmilk and then to the baby to help prevent infections. Since the vaccine does not contain the virus, there is no risk of breastmilk containing the virus.

### **What else can I do to protect myself other than vaccination?**

1. Maintain safety precautions (masking, distancing, essential interactions only)
2. Get the Flu vaccine
3. Use Vitamin D3 2000 IU daily

## **7. How does the COVID vaccine work?**

The vaccine is an mRNA vaccine meaning that it does NOT contain any coronavirus but rather a piece of biologic message that can be translated into a specific coronavirus protein: the spike protein on the surface of the virus.

The mRNA is injected into a muscle group (arm, buttock) – the mRNA is incorporated into muscle cells where it is translated into the spike protein and expressed on the surface of the muscle cells.

Your body recognizes these spike proteins as foreign and develops an immune response- an antibody that recognizes the spike protein.

This antibody is now in your system ready to bind and neutralize (remove) any coronavirus from your system thereby protecting you from infection by the virus and developing COVID-19 symptoms.

After one dose, the vaccine appears to be 50% effective. After the second dose 1 month later, the vaccine is 95% effective. In other words, for every 100 people who got COVID-19 in the placebo group, only 5 people got COVID-19 in the vaccine group. There were 9 cases of severe COVID in the placebo group and 1 case in the vaccine group.

## **References:**

[#1 CANCOVID: Canadian Surveillance of COVID-19 in Pregnancy: Epidemiology, Maternal and Infant Outcomes. Report #1: Released December 2nd, 2020.](#)

[#2. Heath Canada](#)

[#3. Figueiro-Filho EA, Yudin M, Farine D.Figueiro-Filho EA, et al. COVID-19 during pregnancy: an overview of maternal characteristics, clinical symptoms, maternal and neonatal outcomes of 10,996 cases described in 15 countries. J Perinat Med. 2020 Nov 26;48\(9\):900-911. doi: 10.1515/jpm-2020-0364.](#)

[#4. Khalil A, Kalafat E, Benlioglu C, O'Brien P, Morris E, Draycott T, Thangaratnam S, Le Doare K, Heath P, Ladhani S, von Dadelszen P, Magee LA.Khalil A, et al. SARS-CoV-2 infection in pregnancy: A systematic review and meta-analysis of clinical features and pregnancy outcomes. EClinicalMedicine. 2020 Aug;25:100446. doi: 10.1016/j.eclinm.2020.100446. Epub 2020 Jul](#)

[#5. PregCovid19:LSR](#)

[#6. Delahoy MJ, Whitaker M, O'Halloran A, Chai SJ, Kirley PD, Alden N, Kawasaki B, Meek J, Yousey-Hindes K, Anderson EJ, Openo KP, Monroe ML, Ryan PA, Fox K, Kim S, Lynfield R, Siebman S, Davis SS, Sosin DM, Barney G, Muse A, Bennett NM, Felsen CB, Billing LM, Shiltz J, Sutton M, West N, Schaffner W, Talbot HK, George A, Spencer M, Ellington S, Galang RR, Gilboa SM, Tong VT, Piasecki A, Brammer L, Fry AM, Hall AJ, Wortham JM, Kim L, Garg S; COVID-NET Surveillance Team.Delahoy MJ, et al. Characteristics and \*\*Maternal\*\* and Birth Outcomes of Hospitalized Pregnant Women with Laboratory-Confirmed \*\*COVID-19\*\* - COVID-NET, 13 States, March 1-August 22, 2020. MMWR Morb Mortal Wkly Rep. 2020 Sep 25;69\(38\):1347-1354. doi: 10.15585/mmwr.mm6938e1.](#)

[#7. Raschetti R, Vivanti AJ, Vauloup-Fellous C, Loi B, Benachi A, De Luca D.Raschetti R, et al. Synthesis and systematic review of reported neonatal SARS-CoV-2 infections. Nat Commun. 2020 Oct 15;11\(1\):5164. doi: 10.1038/s41467-020-18982-9.](#)