

## **FAQ COVID-19 Vaccine**

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### **GENERAL**

#### **1. What is COVID-19?**

**COVID-19** stands for **Coronavirus Disease-2019** that is caused by the coronavirus SARS-CoV-2.

#### **2. What is the goal of the COVID-19 vaccination campaign?**

The goal is to vaccinate the population starting with the most vulnerable and those that closely interact with the most vulnerable in order to reduce serious illness and death. In order to create herd immunity, we need >70% of the population immunized.

#### **3. Is vaccination mandatory?**

No, vaccination is not mandatory, but it is highly recommended.

#### **4. Is the COVID-19 vaccine free?**

Yes, the COVID-19 vaccine is free. It is only possible to be vaccinated in Canada through the Health Canada network through the provincial health authorities.

#### **5. When will immunization start?**

COVID-19 immunizations started with health care workers at the end of December 2020. As more vaccine becomes available in Canada, immunization will be offered to an increasing number of people.

#### **6. Do the health instructions of DISTANCE-HYGIENE-MASKING have to be followed in the context of vaccination against COVID-19?**

YES. Health instructions of DISTANCE-HYGIENE-MASKING etc. must be followed at the time of vaccination and after vaccination against COVID-19, since the virus is still circulating, and the vaccination cannot be offered to the entire population at the same time due to the limited quantities of doses available.

### **INFORMATION ON COVID-19 VACCINES**

#### **7. What COVID-19 vaccines are available in Canada?**

Currently only the messenger ribonucleic acid (mRNA) vaccines are available in Canada: Pfizer-BioNTech and Moderna-NIAID. See the next section for more information on mRNA vaccines.

There are other vaccines that are in other stages of development and approval:

- recombinant vaccines with adjuvant: Novavax and Sanofi Pasteur-GSK
- viral vector vaccines (DNA): AstraZeneca-Oxford and Johnson and Johnson-Janssen
- adjuvanted viral-like particle vaccine: Medicago-GSK

#### **8. Can I get COVID-19 from the vaccine?**

No. Only the instruction (mRNA) to make the spike protein of the SARS-CoV-2 virus is included in the vaccine. This is enough for the immune system to recognize as foreign and create an immune response but is missing >90% of the virus components and so virus cannot be made. See this video for an analogy to building LEGO (<https://youtu.be/5ymJhOXhtqg>).

You also will not test COVID-19 positive from having had the COVID-19 vaccine. The mRNA is degraded in the cells in the arm within 1-2 weeks and it does not travel to the nasopharynx (nose, mouth, throat).

It is possible to have caught COVID-19 and not realize you have symptoms until after your immunization appointment. The most important symptoms of COVID-19 are NOT side effects of the vaccine: a new or worsening cough, a high temperature, loss of sense of smell or taste.

### **9. The COVID-19 vaccines were developed quickly? Does this mean they are not safe?**

They were developed quickly but all development steps were done, and they are safe. The mRNA vaccine technology has been studied for over 10 years. What enabled the research and development to be done quickly was that countries came together to share data and fund many manufacturers, universities and research centers to develop and test the vaccines. All the steps before the approval were followed, and some were carried out simultaneously.

## **INFORMATION ON COVID-19 mRNA VACCINES**

### **10. How does the mRNA vaccine work?**

Video by Dr Gauthier: <https://youtu.be/5ymJhOXhtqg>

mRNA coding for the SARS-CoV-2 spike protein is wrapped in a lipid nanoparticle which after injection into the muscle gets taken up into our cells. The mRNA gets unwrapped from the lipids, the cell recognizes the mRNA and makes a protein which gets presented to the surface of the cell. Immune cells are recruited to create both a B-cell antibody response and a T-cell cell-mediated response. This takes 1-2 weeks. If in the future the body encounters SARS-CoV-2 virus, the immune systems remembers the spike protein and recruits the immune response to neutralize the virus prior to infection sets hold.

The mRNA and the spike protein are degraded within 1-2 weeks.

### **11. How effective are the COVID-19 mRNA vaccines?**

#### **Pfizer/BioNTech (BNT162b2)**

- Protection against symptomatic infection starting at 14 days post 1<sup>st</sup> dose up to 112 days (study length, but more data is continuing to be collected)
- After 2<sup>nd</sup> dose: 95% efficacy; no change of efficacy based on age, ethnic origin or comorbidity
- After 1<sup>st</sup> dose: 52% efficacy including everyone including those that likely were infected but not symptomatic when they received their first dose. Using between day 15 and 21 post 1<sup>st</sup> dose, efficacy against symptomatic COVID-19 was 89%.
- Other end points: works in preventing severe COVID-19, works after one dose (see above), works in those that already had COVID-19)
- Side effects (see FAQ #15): Pain, fatigue, headache, myalgias (muscle pains), chills, fever

- Better immunity with vaccine than with natural infection. The vaccine gives higher and more specific neutralizing antibodies and T-cell responses than those from natural infection with COVID-19.

### **Moderna/NIAID (mRNA-1273)**

- Protection against symptomatic infection starting at 14 days post 1<sup>st</sup> dose to 12 weeks, (study length, but more data is continuing to be collected)
- After 2<sup>nd</sup> dose: 94% efficacy, similar across ages, genders, ethnic origin, comorbidities
- After 1<sup>st</sup> dose: 80% efficacy including all. >14 days after dose 1, efficacy against symptomatic COVID-19 was 92%.
- Other end points: works in preventing severe COVID-19, works after one dose (see above), works in those that have already had COVID-19
- Small amount of data showing 60% prevention of asymptomatic infection after 1 dose (no data after 2 doses)
- Side effects (see FAQ #15): Pain, fatigue, headache, myalgia (muscle pains), chills, fever. Lymphadenopathy (lymph node swelling) 21% (<65 yo) and 12% (>65 yo)  
No anaphylactic or severe hypersensitivity  
Serious adverse events were 1% in both vaccinated and placebo groups.

### **12. How long will immunity last?**

We only have data to 3 months at the moment. Data is being collected on an ongoing basis.

### **13. How many doses should I receive?**

The clinical trials were done with 2 doses a minimum of 21 days (Pfizer) or 28 days (Moderna) apart. We are currently investigating if we can delay the second dose in order to have a greater number of people receiving 1 dose.

### **14. Can the COVID-19 mRNA Vaccines change our DNA?**

No. Messenger RNA (mRNA) is delivered to cells through lipid nanoparticles. The mRNA and the Spike protein that is made gets degraded within 1-2 weeks. Additionally, human cells do not make reverse transcriptase or integrase in order to convert the mRNA into DNA into our DNA genome. The mRNA does not enter the nucleus of our cells and cannot reproduce on its own.

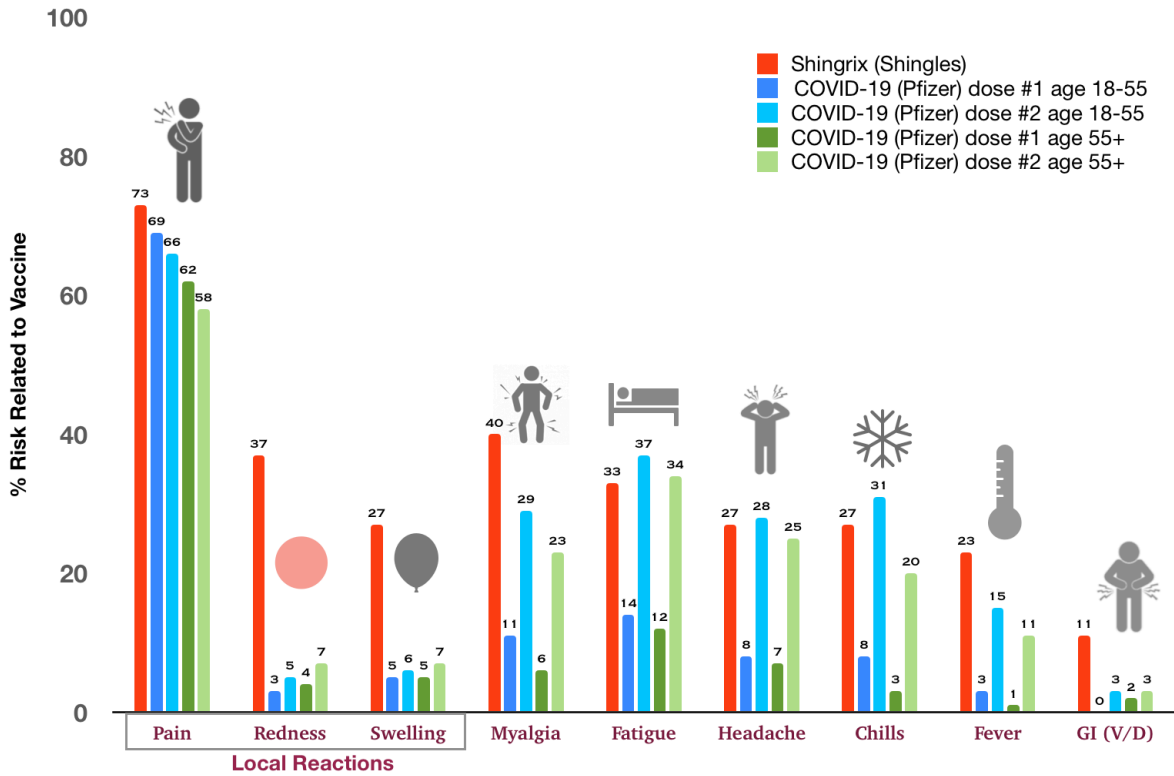
## **INFORMATION ON SIDE EFFECTS**

### **15. What are the side effects?**

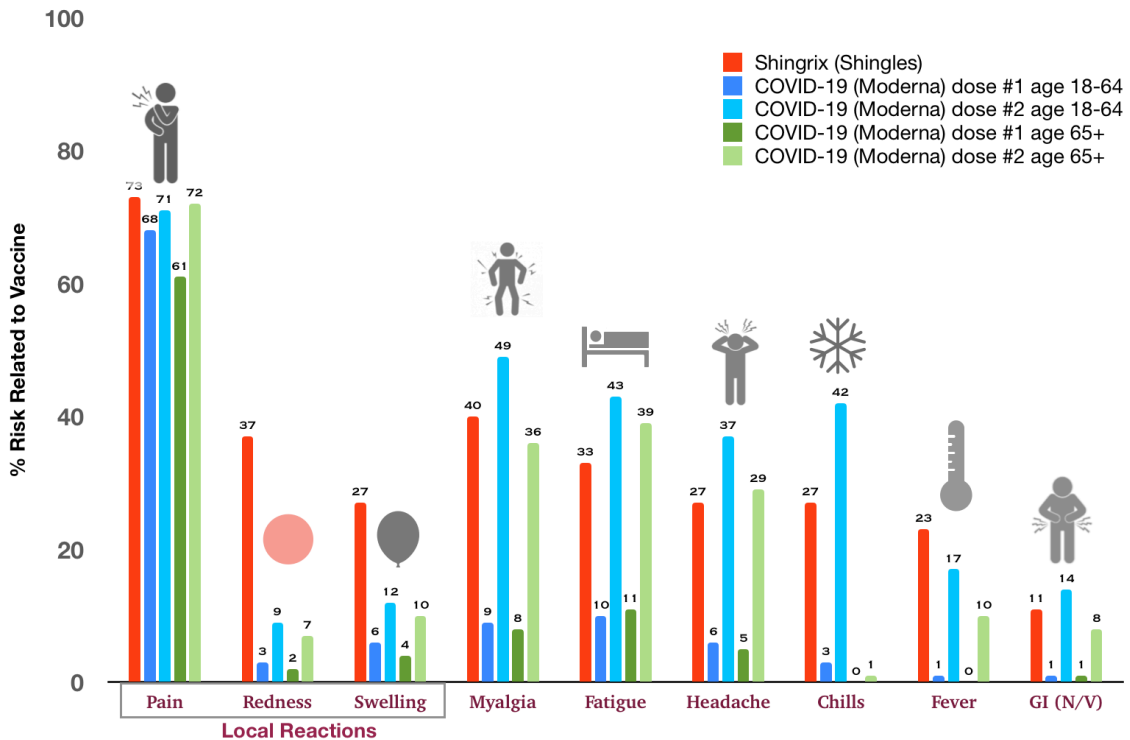
It is important to note that:

- the side effects from the vaccine indicate that the vaccine is creating an immune response
- more side effects are seen after the 2<sup>nd</sup> dose than the first
- that the side effects are much less severe than having COVID-19

## VACCINE RELATED SIDE EFFECTS



## VACCINE RELATED SIDE EFFECTS



Graphs modified by Dr A Gauthier with Moderna data based on the analysis of Pfizer data by Dr S. Villeneuve.

### **16. What are the long-term side effects**

While we do not have data beyond 3 months, at the moment there are no long-term side effects of the vaccine.

However, there are long term side effects of having COVID-19: COVID-19 symptoms can linger for weeks to months, and some people develop lasting health consequences due to complications. Persistent symptoms of COVID-19 long-haulers include lack of taste or smell, fatigue, body aches, shortness of breath, difficulty concentrating, exercise intolerance, headache and difficulty sleeping.

## **INFORMATION ON PRIORITIZATION**

### **17. What is the prioritization of the clientele to be vaccinated?**

The Quebec Immunization Committee (QIC) made recommendations on who should be vaccinated as a priority in the following order:

- 1- residents in public or private CHSLDs (also known as Long Term Care Facilities)
- 2- health care workers in the health and social services network initially focussing on those working with users with the highest risk of complications (example in CHSLDs)
- 3- people living in private seniors' residences
- 4- people living in isolated and remote communities
- 5- people aged 80 and over
- 6- people aged 70 and over

Then, the target clienteles will be adjusted according to certain criteria such as the availability of vaccines:

- 7- people aged 60 to 69
- 8- people under the age of 60 who have a chronic disease or a health that increases their risk of complications from COVID-19
- 9- people under the age of 60 who provide essential services and who are in contact with users
- 10- the rest of the adult population and young people according to the lower recommended age limit for vaccination
- 11- the youngest children (depending on available scientific data and expert recommendations to come);
- 12- pregnant women (depending on available scientific data and expert recommendations to come).

## **INFORMATION ON SPECIAL SITUATIONS**

### **18. What if I need to get another vaccine?**

It is recommended that you receive no other vaccines 14 days prior to a COVID-19 vaccine. However, a person who has recently received the influenza or pneumococcal vaccine could receive a COVID-19 vaccine without delay.

It is recommended that after receiving the COVID-19 vaccine, no other vaccine should be given for 28 days unless there is an urgent need like post-exposure prophylaxis. (ex. rabies, hepatitis B).

**19. Should a person vaccinated against influenza be vaccinated against COVID-19?**

Yes. The flu vaccine does not protect against COVID-19.

**20. Can a person who has mild symptoms such as fever or mild illness be vaccinated against COVID-19?**

Yes. A person who has mild symptoms can be vaccinated against COVID-19. However if you have symptoms that could be COVID-19 please isolate and call to get tested.

In general, the administration of a vaccine is postponed when a condition or disease warrants taking precautions. However, there are cases where the benefits of administering the vaccine outweigh the possible risks to the susceptible person.

**21. Can a person who is taking anticoagulants or who has a bleeding disorder be vaccinated?**

Yes. Anticoagulants and bleeding disorders are not contraindications for COVID-19 vaccination.

**22. Can we vaccinate a person who has a severe allergy that is not related to a component of the COVID-19 vaccine?**

Yes. The COVID-19 vaccine is contraindicated in people who have had anaphylaxis following a previous dose of the same vaccine or a product with an identical component including polyethylene glycol.

**23. After vaccination, does a person vaccinated against COVID-19 need to take any special precautions?**

It is recommended that the vaccinated person remain on site for 15 minutes after the injection so that immediate side reactions can be monitored as is done for all immunization campaigns.

Even with vaccination the tenet still stand of DISTANCE-HYGIENE-MASKING.

**24. Can a person take antipyretics (fever-reducing medications) or analgesics (pain relievers) after the COVID-19 vaccination?**

Yes. You are allowed to take antipyretics (fever-reducing medications) or analgesics (pain relievers) after vaccination as needed. Examples are acetaminophen or ibuprofen.

**25. Can a person who has had COVID-19 be vaccinated?**

Yes. The duration of protection from natural infection is not known. We do know that better immunity occurs after vaccination than after natural infection. The vaccine gives higher and more specific neutralizing antibodies and T-cell responses than those from natural infection with COVID-19.

It is recommended to wait until after the acute episode of COVID-19 infection and the period of contagiousness of a person has ended before vaccinating them (i.e. more than 10 days for most people).

**26. Can a pregnant woman be vaccinated?**

Currently, there is insufficient data to recommend vaccination of pregnant women. It is important to note that mRNA vaccines are not live and only contain mRNA that is quickly degraded. The SOGC (Society of Obstetricians and Gynecologists of Canada) recommend vaccinating at risk pregnant women as they are at a higher risk of complications.

**27. Can a breastfeeding woman be vaccinated?**

Currently, there is insufficient data on the vaccination of nursing mothers. However, the benefits of vaccination with a COVID-19 vaccine outweigh the risks, for both mother and child. An informed decision will be made with the person to be vaccinated.

**28. Can a person under the age of 16 be vaccinated?**

Currently, there is insufficient data for young people under 16. Work is in progress, and a recommendation will follow.

**29. Can an immunocompromised person be vaccinated?**

Currently, there are insufficient data on the vaccination of immunocompromised people. However, the benefits of vaccination with a COVID-19 vaccine outweigh the risks. The immune response may be reduced in immunocompromised people. An informed decision will be made with the person to be vaccinated or their representative if they are unfit.

**30. Can a person with an autoimmune disease be vaccinated?**

Currently, there is insufficient data on the vaccination of people with autoimmune disease. However, the benefits of vaccination with a COVID-19 vaccine outweigh the risks. An informed decision will be made with the person to be vaccinated or their representative if they are unfit.

**OTHER QUESTIONS**

**31. I heard there is a COVID-19 variant that is more infectious?**

New variants or mutations of SARS-CoV-2 have been found since the beginning of the pandemic. There is no clear data that these variants are more infectious or more transmissible, and there is no evidence that the vaccine does not work against these variants. However, it does demonstrate that the tenets of DISTANCE-HYGIENE-MASKING are as important as ever.

**Resources**

MSSS, Questions and Answers on the Campaign Vaccination against COVID-19 for Professionals, 2020-12-21

Pfizer and Moderna published papers and data submissions to the FDA and Health Canada and NHS United Kingdom.

United Kingdom, NHS, Information Guides about COVID-19 vaccination

Video with Dr Gauthier: <https://youtu.be/5ymJhOXhtgq>