

## WHY SHOULD I GET VACCINATED?

Getting vaccinated is the best way to protect yourself against COVID-19. Vaccines:

- Provide protection against COVID-19 and its serious complications that can lead to death
- Stop the spread of the virus so that we can stop the pandemic
- Give us hope of having our lives go back to normal



## HOW DO VACCINES WORK?

Vaccines teach the body what to do when it comes into contact with a virus: they tell it how to defend itself by training it or giving it specific instructions.

### Key concepts:

Viruses all contain a specific structure called an “antigen,” which acts as a warning signal to the immune system that it is time to defend the body.

In response, the immune system produces antibodies, whose role is to eliminate the virus. Antibodies are trained to recognize and respond to a particular invader.

When the body first comes into contact with a virus, it can take time for the immune system to learn how to respond. Vaccines speed up this process by preparing and strengthening the immune system.



## WHY DO WE NEED A 2ND DOSE OF THE VACCINE?

The second dose of the COVID-19 vaccines (Pfizer-BioNTech, Moderna and AstraZeneca-Oxford) acts as a booster for the immune system. It prolongs immune memory and protects the body from the virus over the long term.



## Vaccines currently available:

Two types of vaccines have been approved in Canada.

**2 messenger RNA (mRNA) vaccines**, developed by Pfizer-BioNTech and Moderna.

These vaccines contain genetic material (mRNA) that gives the immune system a blueprint for (1) producing the antigen and (2) triggering an immune response against the antigen. These vaccines act like an instruction manual.

**2 viral vector vaccines**, developed by AstraZeneca-Oxford and Janssen (Johnson and Johnson)

These vaccines contain a controlled, inactive and harmless version of the virus that the immune system reacts to. They trigger the production of antibodies that can recognize the virus and neutralize it. This gives the body “practice” in defending itself.

Both types of vaccines give the body the chance to learn to defend itself. After being exposed to the vaccine, the immune system remembers the virus. It is prepared to act against the invader.



## HOW TO CHOOSE?

The mRNA vaccines (Pfizer-BioNTech, Moderna) are currently prioritized following the emergence of severe but very rare side effects linked to the other vaccines. Even though the risks remain small for the viral vector vaccines (AstraZeneca-Oxford, Janssen/Johnson et Johnson), it is important that everyone be able to consider the risks and benefits of each option in order to make a decision that suits their situation. Each person can decide whether or not they want to get vaccinated and which type of vaccine is acceptable for them.

The COVID-19 vaccines are freely available to everyone as per the planned order of vaccination for priority groups, **regardless of your status or whether or not you have an RAMQ card**. They are not mandatory, but they are recommended.

If you have questions about the vaccines, visit  
**quebec.ca/vaccinCOVID**  
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## WHAT DOES VACCINE EFFECTIVENESS MEAN?

**The effectiveness of a vaccine refers to its ability to protect against a disease, i.e. to prevent the development of symptoms.** An effective vaccine is therefore one that can prevent hospitalizations and deaths.

A vaccine that is 95% effective means that, out of every 100 people vaccinated, 95 will not get the disease and therefore not develop symptoms.

!/\ Vaccines do not provide immediate protection. The body needs about two weeks to reach maximum protection, or when the immune system is fully prepared to fight the virus. These vaccines are known to be effective 14 days after vaccination.

## COULD THE VARIANTS REDUCE THE EFFECTIVENESS OF THE VACCINES?



Variants appear after a virus goes through multiple mutations. The formation of variants are a normal part of a virus's course. There are already several variants of the virus that causes COVID-19 and there will be more, just like the flu, caused by influenza (which is less dangerous than COVID-19). As a result, the annual flu shot aims to protect people against different influenza variants, and its effectiveness slightly changes each year. Currently, the vaccines seem generally effective against the COVID-19 variants, though the immunity they confer may differ depending on the variant. Research is ongoing to determine the effectiveness of each vaccine against the variants.

## ARE COVID-19 VACCINES SAFE?



**YES.** The COVID-19 vaccines have been approved by Health Canada and are very safe. Tens of millions of people around the world have been vaccinated without serious side effects.

Although the vaccines were developed very quickly, they went through all necessary steps before being approved and were subject to the same quality and safety standards as for any other vaccine used in Canada. Experts are closely monitoring any adverse events that may occur after vaccination.

## HOW WERE THESE VACCINES DEVELOPED SO QUICKLY?



### A priority in all countries

The COVID-19 pandemic caused a deep crisis and has had devastating impacts around the world. All countries made developing a vaccine a top priority.

### High participation in clinical trials

Companies were able to conduct clinical trials for this vaccine more quickly than for other vaccines. Tens of thousands of people quickly enrolled in the vaccine trials, whereas for other vaccines it usually takes 12 to 18 months to recruit a fraction of that number.

### Available funding

Pharmaceutical companies took financial risks and started investing very early in large-scale vaccine manufacturing, which meant that the vaccines went into production with no delay once the clinical trials were over.

### Unprecedented research efforts

Thousands of scientists around the world contributed to this research.

The mobilization of research teams and the creation of public-private partnerships

facilitated and accelerated the development, manufacturing and distribution of the vaccines.

### Previous research on coronaviruses, mRNA vaccines and viral vector vaccines

Immunity against coronaviruses has been extensively studied as a result of previous epidemics (SARS-CoV in 2003 and MERS-CoV in 2012). Scientists therefore already had data about the immune response to coronaviruses. Researchers have also been working on:

- mRNA vaccines for over 20 years. mRNA vaccines have been tested in humans for viruses such as Zika and different strains of influenza.
- Viral vector vaccines for over 30 years. These vaccines have been developed in 2 areas: cancer vaccines and anti-infective agents.

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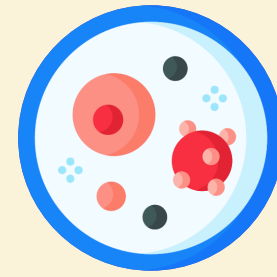
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## WHAT IS IN THE VACCINES?



The vaccines developed by Pfizer-BioNTech and Moderna contain mRNA as well as non-medicinal ingredients such as fats, salts, sugar and water.

The vaccine developed by AstraZeneca-Oxford and Janssen (Johnson and Johnson) contain a controlled and harmless version of the virus along with sugar, salts and stabilizers that help the vaccine work more effectively.

### The role of non-medicinal ingredients:

**Fats** help the mRNA enter the cells. The fats **are not derived from animals**; they are produced in a lab or extracted from plants.

**Salts** help make the vaccine compatible with the cells of the body into which it is injected.

**Sugars** keep the vaccine stable while it is stored in a freezer.

**Water for** injection is used to create the vaccine solution.

**Stabilizers** help hold the ingredients together: they keep the vaccine components from separating and sticking to the vaccine vial. They also allow the oil-based ingredients to mix with the water-based ingredients.

**The vaccines do not contain any products from humans or animals. They do not contain antibiotics, preservatives or known allergens such as latex, milk, gluten, etc.**

## WHAT ARE THE SIDE EFFECTS OF COVID-19 VACCINES?



The possible symptoms from a COVID-19 vaccine are classic, which means they are similar to those of other vaccines:

- **Mild symptoms**

Pain at the injection site, headache, fatigue, fever or chills, muscle or joint pain

- **Moderate symptoms (fewer than 10% of cases)**

Severe fatigue, fever, diarrhea, nausea, headache

- **Severe symptoms (fewer than 1% of cases)**

Allergic and neurological reaction

Light to moderate symptoms usually disappear after 1 or 2 days. These symptoms are mild compared to the serious and potentially fatal complications of COVID-19.

These symptoms show that the body is getting ready to fight the disease and are a sign that the vaccines are effective.

Serious side effects are extremely rare. Any allergic reactions will usually occur within minutes of vaccination and are treated immediately. This is why you can't leave immediately after getting vaccinated.

## CAN VACCINES CAUSE COVID-19?



**NO.** Vaccines cannot cause COVID-19 because they do not contain the coronavirus that causes the disease.

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## WHO CAN GET THE COVID-19 VACCINES?



It is recommended that the entire population get vaccinated against COVID-19. Vaccination is recommended as a priority for people at a higher risk of complications from COVID-19.

Vaccines are safe for:

- Seniors and people with stable health conditions, such as diabetes and high blood pressure.
- People with stable Hepatitis B or C or HIV.
- People with bleeding disorders or who are taking anticoagulants.
- People with food, stinging insect, drug or environmental allergies, as long as they are not allergic to any of the ingredients in the vaccine.

## AFTER GETTING VACCINATED, CAN I STOP APPLYING THE RECOMMENDED HEALTH MEASURES AND GO BACK TO NORMAL LIFE?

**NO.** Although the COVID-19 vaccines approved in Canada are effective, protection is not immediate. Anyone who has been in contact with the virus just before or within 14 days of being vaccinated may still get COVID-19. It may also take several months to protect a sufficient number of people. It is therefore important to continue to follow the health measures in force.

## CAN PEOPLE WHO HAVE ALREADY CONTRACTED COVID-19 GET THE VACCINE?



**YES.** Vaccination is strongly recommended to ensure longer-term protection. The vaccination of people who have already had COVID-19 is not associated with a higher risk of side effects.

## CAN CHILDREN AND PREGNANT WOMEN RECEIVE THE VACCINE?



The Pfizer-BioNTech vaccine is approved in Canada for those aged 12 and over. Vaccination of 12- to 17 year-olds will soon start in Quebec. There is currently not enough information to support the recommendation of the vaccines for children under the age of 12.

For pregnant women, vaccination is recommended since current data suggests a higher risk of complications for pregnant women with COVID-19. mRNA vaccines are preferred since there are more studies demonstrating their safety. Pregnant women are encouraged to speak with their healthcare provider to learn about the risks of COVID-19 during pregnancy and the risks and the benefits of vaccines.

## CAN VACCINES MAKE WOMEN INFERTILE?



**NO.** Based on our current knowledge, there is no evidence to suggest that COVID-19 vaccines can make women infertile.

## CAN VACCINES CHANGE DNA?



**NO.** There is no risk that the vaccines will change genetic material. The viral vector or mRNA that they contain does not penetrate into the nucleus of cells, where DNA is located. The mRNA is quickly broken down by the cells following the injection of the vaccine and disappears.

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