

# COVID-19 Vaccine:

## Breaking Down Myths & Providing Facts

December 30, 2020

This document lists myths about COVID-19 vaccines and provides the facts to help you make an informed decision about getting vaccinated. This list will be updated as new vaccines are approved.

### Vaccine Development Myths

Myths:	Facts:
<p><b>Myth:</b> mRNA vaccines are too new, we don't know enough about them.</p>	<p><b>Fact:</b> mRNA technology has been studied for more than 10 years most often, in cancer research. This technology has also been studied for the flu and rabies as well. Scientists studied and mapped out the genes that make up the COVID-19 virus. Once the genes were known, those scientists were able to quickly start work to create the vaccine and start the clinical trials. Thousands of scientists in every part of the world worked at the same time to develop this vaccine and shared what they found with other researchers.</p>
<p><b>Myth:</b> The COVID-19 vaccine was developed to control the general population either through microchip tracking or nano transducers in our brains.</p>	<p><b>Fact: The vaccine does not contain a "microchip" and the vaccine cannot track people or gather personal information into a database.</b></p> <p>This myth started after comments made by Bill Gates from The Gates Foundation about a digital certificate of vaccine records. The technology he was referencing is not a microchip, has not been used in any way and is not tied to the development, testing or distribution of the COVID-19 vaccine.</p>

**Myth:** We are guinea pigs, they rushed the vaccines and are testing them on us.

**Fact: Some people believe that vaccine research must take a long time.** While creating a new vaccine can sometimes take years, the progress on COVID-19 vaccines is happening quickly for many reasons, including:

- advances in science and technology
- focused teamwork among scientists, health professionals, researchers, industries, and governments from all over the world
- increased funding (money) specifically to make a vaccine

**For any vaccine to reach the general public it must pass careful [evaluation by Health Canada](#) and will have to pass all safety standards.** What made this vaccine approval feel rushed compared to other vaccines is the result of a highly focused, and shared effort by researchers and scientists in every part of the world - combined with new processes for review and evaluation of clinical trial data, plus the increased funding for vaccine research.

No corners were cut while creating the vaccines. One minor change to the normal process was put in place: clinical trials were run at the same time as factories made the vaccines, that way, vaccines could be shipped out to different countries as soon as the vaccines were approved by the different countries' health authorities.

The different clinical trials included well over 70,000 people, more than the number necessary for vaccine trials. 43,448 people were included in the Pfizer trials; 30,000 people were included in the Moderna vaccine trials.

**Myth:** The vaccine trials didn't include minority

**Fact: Between 35-40% of the participants were Black or African American, Latinx and Hispanic in both vaccine clinical trials (Pfizer BioNtech and Moderna).**

<p>populations, so we don't know if it is safe for us.</p>	<p>Source: <a href="#">Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine. Polack et al. The New England Journal of Medicine</a></p> <p>Some groups were not included in the clinical trials, including people who are pregnant or breastfeeding, people under the age of 16, or people who have weaker immune systems. Clinical trials in children older than 12 years old have begun. Canadian guidelines for COVID-19 vaccines in people who are pregnant, breastfeeding or are immunocompromised can be found <a href="#">here</a>.</p>
<p><b>Myth:</b> The vaccine trials didn't include people over the age of 65, so we don't know if it safe for us.</p>	<p><b>Fact:</b> The vaccine trials included people over the age of 65 and the vaccine was found to be safe and effective in this age group.</p> <p>Source: <a href="https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-conclude-phase-3-study-covid-19-vaccine">https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-conclude-phase-3-study-covid-19-vaccine</a></p>

## Vaccine Safety Myths

Myths:	Facts:
<p><b>Myth:</b> The long-term consequences of the vaccines could be harmful.</p>	<p><b>Fact:</b> We don't have long-term evidence yet, but the chance of this type of vaccine causing long-term harm is very unlikely.</p> <p>Messenger RNA (mRNA) is quickly broken down by the body (your body doesn't hang on to it). After your body learns how to fight off the spike protein that covers the COVID-19 virus, your body removes the mRNA and there is nothing left of the vaccine in your body.</p> <p>The short-term data that we have is promising and does not suggest any long-term safety concerns. As part of the vaccine safety program in Canada, ongoing <a href="#">monitoring of the COVID-19 vaccines</a> will continue.</p>

<p><b>Myth:</b> COVID-19 vaccines cause infertility or miscarriage.</p>	<p><b>Fact: No. COVID-19 vaccines have not been linked to infertility or miscarriage.</b></p> <p>A social media campaign has been promoting this myth. The person who made this up is thought to be a former scientist who holds anti-vaccine views. There is no science-based reason why a COVID-19 vaccine would lead to infertility or miscarriage.</p> <p>The best evidence comes from women who got sick with COVID-19 while pregnant. Studies show that pregnant women are more likely to be hospitalized when they have COVID-19, but they are not more likely to miscarry.</p> <p>If you were to get COVID-19, your body creates the same immune response as it does when you receive the vaccine. If this immune response caused miscarriages, we would have already seen more miscarriages in women naturally infected with COVID-19. <b>This has not happened.</b></p>
<p><b>Myth:</b> COVID-19 vaccines can give you the virus.</p>	<p><b>Fact: You cannot get the virus from the vaccine; the vaccine will not make you sick.</b></p> <p>The Pfizer and Moderna vaccines rely on mRNA (messenger RNA) - this means that the vaccine does not contain a live version of the COVID-19 virus. Instead it delivers the genetic information (mRNA or a 'recipe') about the 'spike' protein that surrounds the COVID-19 virus and teaches your body how to spot and respond to this protein so when the real virus comes along, the body can fight it off.</p>
<p><b>Myth:</b> The side effects of the vaccine are bad/vaccine side effects are worse than the effects of getting COVID-19.</p>	<p><b>Fact: While some people's experience of COVID-19 may be mild, it can also cause some people to become very sick even lead to death.</b> There is some <a href="#">research</a> to show that even a mild case of COVID-19 can be harmful to a person's lungs (which makes breathing hard) and to their heart and cardiovascular system (your heart and how blood flows through your body).</p> <p>The COVID-19 vaccine does have common side effects. The vaccine can cause:</p>

	<ul style="list-style-type: none"> <li>• pain or redness where you got the shot,</li> <li>• headache,</li> <li>• feeling tired, and</li> <li>• muscle aches and joint pain.</li> </ul> <p>These effects are <b>more likely after the second dose of vaccine</b> and will typically <b>go away in a day or two</b>. These effects are a normal part of your body’s response to most vaccines – it is a sign that your body is learning how to recognize and fight the virus that causes COVID-19. Some people may experience more serious reactions to the vaccine, but these are very unlikely and tracked closely by Health Canada as part of on-going monitoring of vaccine safety.</p> <p>If you have questions about these effects, reach out to a trusted health care provider, like your family doctor, nurse or local pharmacist.</p>
<p><b>Myth:</b> More people will die because of a bad side effect to the COVID-19 vaccine than would actually die from the virus.</p>	<p><b>Fact:</b> <b>On social media, some people are saying that only 1%-2% of people with COVID-19 die from it and that people should not be vaccinated because the chance of dying is low.</b> However, even if only 1% of people with COVID-19 die, that is 10 times more than the seasonal flu. Also, your risk of dying from COVID-19 changes by age, sex and underlying health condition.</p> <p>Getting the vaccine is not just about keeping you safe from COVID-19. It prevents the spread of the virus and keeps other people safe too. No vaccine is 100% effective, but they are far better than not getting a vaccine. The benefits are bigger than the risks in healthy people.</p>
<p><b>Myth:</b> The vaccines change your DNA.</p>	<p><b>Fact:</b> <b>The vaccine will not interact with your DNA in anyway.</b> mRNA is a short-form of ‘messenger RNA’ – meaning that it’s a messenger.</p> <p>mRNA cannot change your DNA, it is a part of our genetic material that gives instructions to the body, like</p>

	<p>a recipe. It simply delivers a message.</p> <ul style="list-style-type: none"> <li>• For COVID-19, the mRNA vaccine tells the body to make a harmless “spike protein”. This spike protein is found on the outside of the COVID-19 virus (but is not the virus itself). Our immune system recognizes the spike protein as something that shouldn’t be there and quickly works to attack it by building antibodies.</li> <li>• Human cells break down and get rid of the mRNA soon after they have finished using the instructions. mRNA does not interact with the part of our cells that holds our DNA and cannot be ‘swapped out’ or change the DNA sequence (there only function is to deliver the message of the spike protein to the cell).</li> </ul>
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## Vaccine Ingredient Myths

Myths:	Facts:
<p><b>Myth:</b> The COVID-19 vaccines are produced using fetal tissue.</p>	<p><b>Fact:</b> The approved mRNA COVID-19 vaccines <u>do not</u> require the use of fetal tissues in the production process.</p> <p>The full list of ingredients in the vaccines can be found here:</p> <p><a href="#">Pfizer ingredients</a>                      <a href="#">Moderna ingredients</a></p>
<p><b>Myth:</b> COVID-19 vaccines must be stored at extremely low temperatures because of preservatives in the vaccines.</p>	<p><b>Fact:</b> Pfizer/BioNTech and Moderna have reported that their vaccines contain no preservatives.</p> <p>Different vaccines have different storage needs. For example, the <a href="#">Pfizer/BioNTech</a> vaccine must be stored at minus 70 degrees Celsius, and the <a href="#">Moderna</a> vaccine needs to be stored at minus 20 degrees Celsius. Both of these vaccines use messenger RNA, or mRNA, to teach your cells how to make a protein</p>

	that will cause an immune response to COVID-19. However, messenger RNA is fragile and can break down easily. Storing messenger RNA vaccines in an ultracold environment keeps them stable and safe. You should not worry about these temperatures. Vaccines are thawed before injection.
<b>Myth:</b> I am allergic to eggs so I shouldn't get the COVID-19 vaccine.	<b>Fact:</b> The Pfizer/BioNTech vaccine and Moderna vaccine <u>do not</u> contain egg. <a href="#">Health Canada</a> has full lists of ingredients for both vaccines.

## Other Vaccine Myths

Myths:	Facts:
<b>Myth:</b> There are already new strains of the COVID-19 virus, so the vaccines aren't going to work.	<b>Fact:</b> Both Pfizer and Moderna are looking into whether or not the vaccine will work on the new strain of the virus. So far, there is no evidence that shows the vaccine will not work. More research is needed, and Health Canada will watch this closely.
<b>Myth:</b> I already had COVID-19 and recovered, so I don't need to get a COVID-19 vaccine when it's available.	<b>Fact:</b> We don't know for sure if you are protected from the virus (immune) after you have had COVID-19, or how long the protection will last.  More studies are needed to understand this better. It is recommended that you get the COVID-19 vaccine, even if you've had COVID-19 before. You should wait about 90 days (3 months) from your diagnosis before you get the vaccine. You should not get the vaccine if you are self-isolating because you have COVID-19 symptoms or were a close contact of someone with COVID-19.
<b>Myth:</b> I won't need to wear a mask after I get the COVID-19 vaccine.	<b>Fact:</b> It will take some time for everyone who wants a vaccine to get one. The Canadian government has said everyone who wants a vaccine will get one by then end of 2021.  The vaccine can prevent you from getting sick, but we don't know if you can still carry the virus and give it to others. You will need to keep wearing a mask and keeping distance from other people.

## Stay informed:

More frequently asked questions about COVID-19 vaccines are answered on Hamilton's COVID-19 vaccines page: [www.hamilton.ca/COVIDvaccines](http://www.hamilton.ca/COVIDvaccines)

Ontario Ministry of Health [latest COVID-19 Vaccine Information](#)

Health Canada's [COVID-19 Drugs and vaccines](#) page

## Spot myths:

Resources to help you decide if the information you're getting is fact:

1. Check out this [Mythbusting youtube channel](#) – from the [Coronavirus Prevention Network](#).
2. COVID19MisInfo.org Portal  
Social Media Lab at Ted Rogers School of Management, Ryerson University, 2020 <https://covid19misinfo.org/>
3. Myths & Misinformation – COVID-19 Information Guide, University of Toronto Libraries  
<https://guides.library.utoronto.ca/c.php?g=715025&p=5097957>

## Get your COVID info on social channels?

Many people rely on social media to get information. We want to help you find reliable, truthful, and accurate information about COVID-19 vaccines, so follow these accounts to stay informed:

- @CityofHamilton
- @CPHO\_Canada
- @ONThealth
- @HamHealthSci
- @mch\_childrens
- @OnCOVID19 (Instagram)
- @STJOESHAMILTON
- @HamiltonFHT
- @healthycdns (Instagram)
- @GovCanHealth
- @McMasterFamMed