

Vaccine FAQ

This is a living document and will be updated on an ongoing basis. The last review was on 19 April 2021. The current version can always be found on OneNote at [Vaccine information for patients](#) ([Web view](#)). Ce document est disponible [en français](#). OPI: Cdr Vincent Beswick-Escanlar, SSO CDCP, vincent.beswick-escanlar@forces.gc.ca. Comments and suggestions for additional questions are welcome through the Health Services professional-technical chain.

Key points

- All vaccines approved by Health Canada are effective at preventing COVID-19.
- The vaccines are safe. About 900 000 000 doses have been administered and 500 000 000 people have been vaccinated worldwide.
- Side effects are common. These generally occur within 1-3 days after vaccination, last for about 1-3 days and are mild, without the need for medical employment limitations.
- A very small number of people will experience these symptoms more severely, to the point of preventing them from their regular daily activities and possibly needing MELs. These are not common: for Moderna, about two percent after the first dose and ten percent after the second dose.
- Severe side effects are extremely rare: about 2-3 for every 1 000 000 doses.
- Broad vaccination – as soon as possible – is the best chance we have to maintain operational readiness, resume normal activities and prevent further infection, including the rise of viral variants.

About the vaccines

What's the difference between SARS-CoV-2 and COVID-19?

SARS-CoV-2, or Severe Acute Respiratory Syndrome Coronavirus 2, is the name of the virus that causes the disease COVID-19, or coronavirus disease 2019.

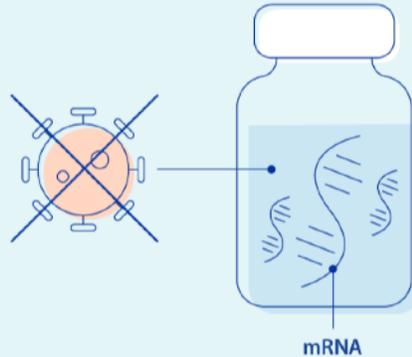
How do the COVID-19 vaccines work?

There are several types of vaccines. Two of the four currently being used in Canada are [messenger RNA vaccines](#) (mRNA vaccines) and are usually identified by the companies that make them: one is called [Moderna](#), the other is called [Pfizer](#). The other two vaccines are [viral vector vaccines](#): one is called [AstraZeneca](#), the other is called [Janssen](#). CAF H Svcs is providing the Moderna vaccine. In international settings, CAF members might be eligible for other Health Canada-approved vaccines.

mRNA vaccines

Vaccines using mRNA technology **protect you from COVID-19 disease without exposing you to the virus.**

They do not contain weakened or inactivated viruses.



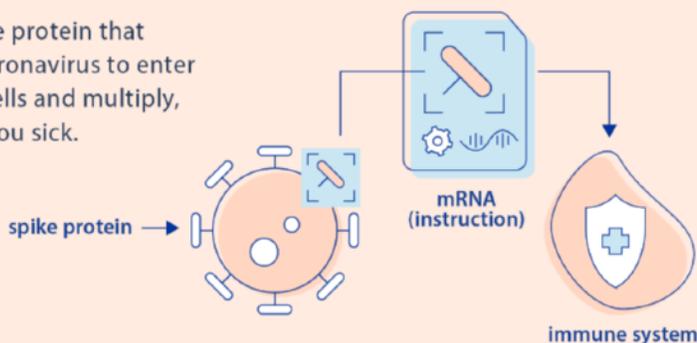
Instead, they do contain a type of genetic information (called mRNA) with instructions on how to create copies of the coronavirus's 'spike' protein.

Image: [European Centre for Disease Prevention and Control](#)

[Researchers have been studying and working with these kinds of vaccines for years.](#) Many types of vaccines use a weakened or inactivated virus or part of a virus to trigger an immune response inside our body. However, instead of using the live virus that causes COVID-19, mRNA vaccines teach our cells how to make a protein that will trigger an immune response against the virus.

Why should your body create the **spike protein**?

This is the protein that allows coronavirus to enter human cells and multiply, making you sick.



mRNA vaccines instruct your body to create these proteins so that your immune system becomes familiar with them and is ready to beat them if you are infected with the virus.

On its own, the spike protein **can't cause you any harm.**

Image: [European Centre for Disease Prevention and Control](#)

'RNA' stands for ribonucleic acid, which is a molecule that provides cells with instructions for making proteins. RNA vaccines contain the instructions for making the SARS-CoV-2 spike protein, and nothing else. This protein is part of the coating found on the surface of the virus

that causes COVID-19. Thus, the mRNA molecule is essentially a recipe, telling the cells of the body how to make the spike protein.

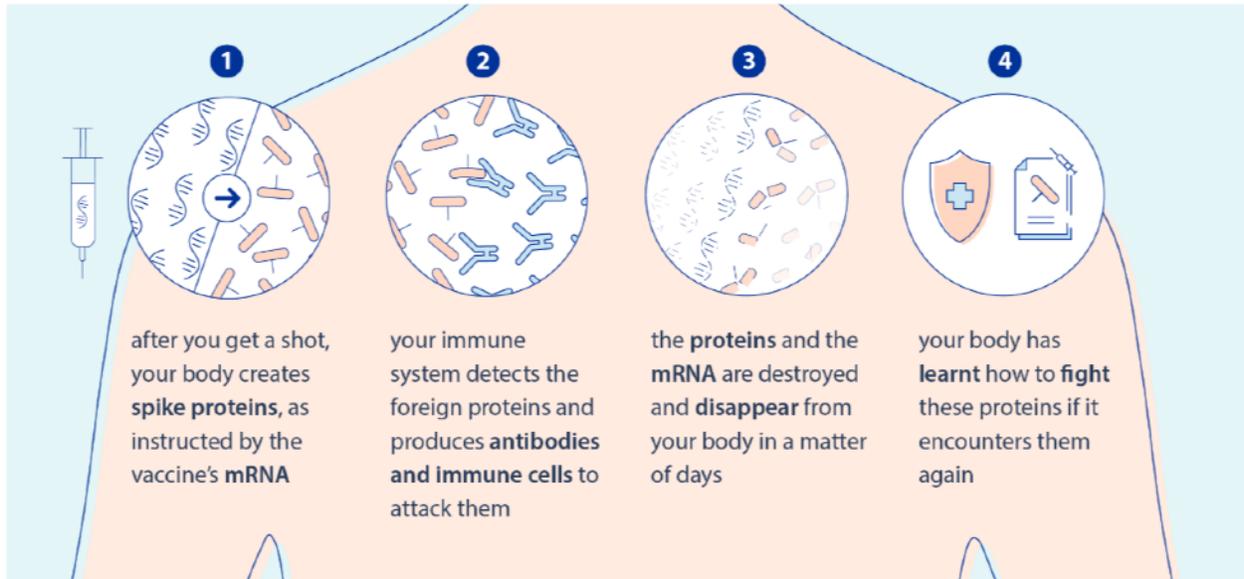


Image: [European Centre for Disease Prevention and Control](#)

After the protein piece is made, the cell breaks down the instructions and gets rid of them. The mRNA never enters the central part (nucleus) of the cell, which is where our DNA (genetic material) is found.

The cell then displays the protein piece on its surface. Our immune system recognizes that the protein doesn't belong there and begins building an immune response and making antibodies. This is the same response your body would do if you were exposed to the virus – but without getting sick.

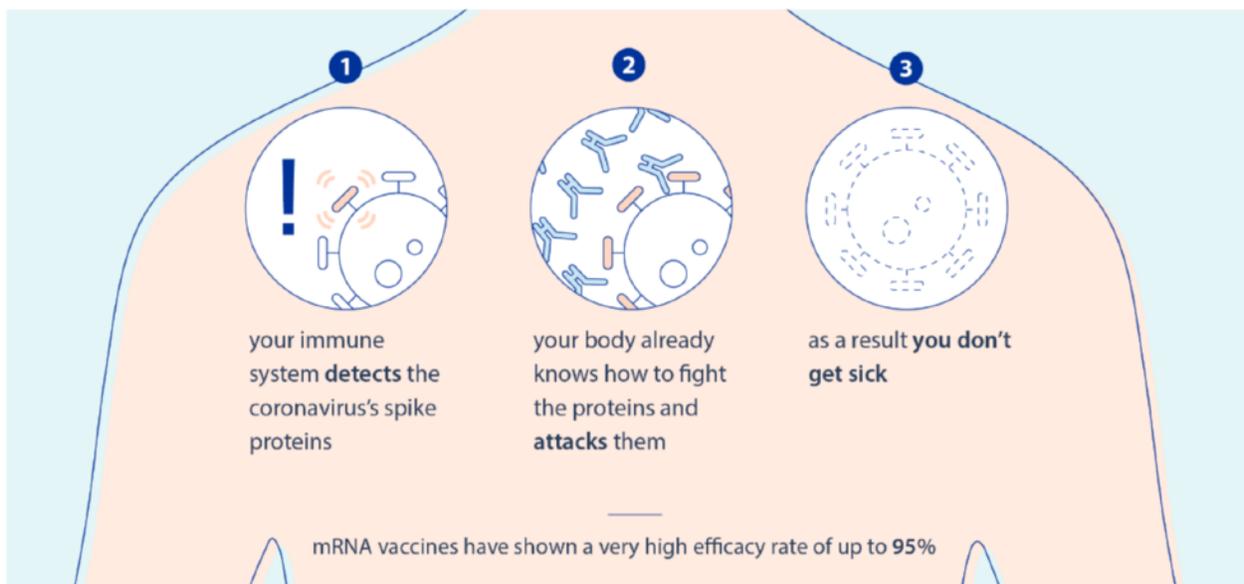


Image: [European Centre for Disease Prevention and Control](#)

Viral vector vaccines

These types of vaccines use a harmless virus (in this case, the adenovirus) as a delivery system.

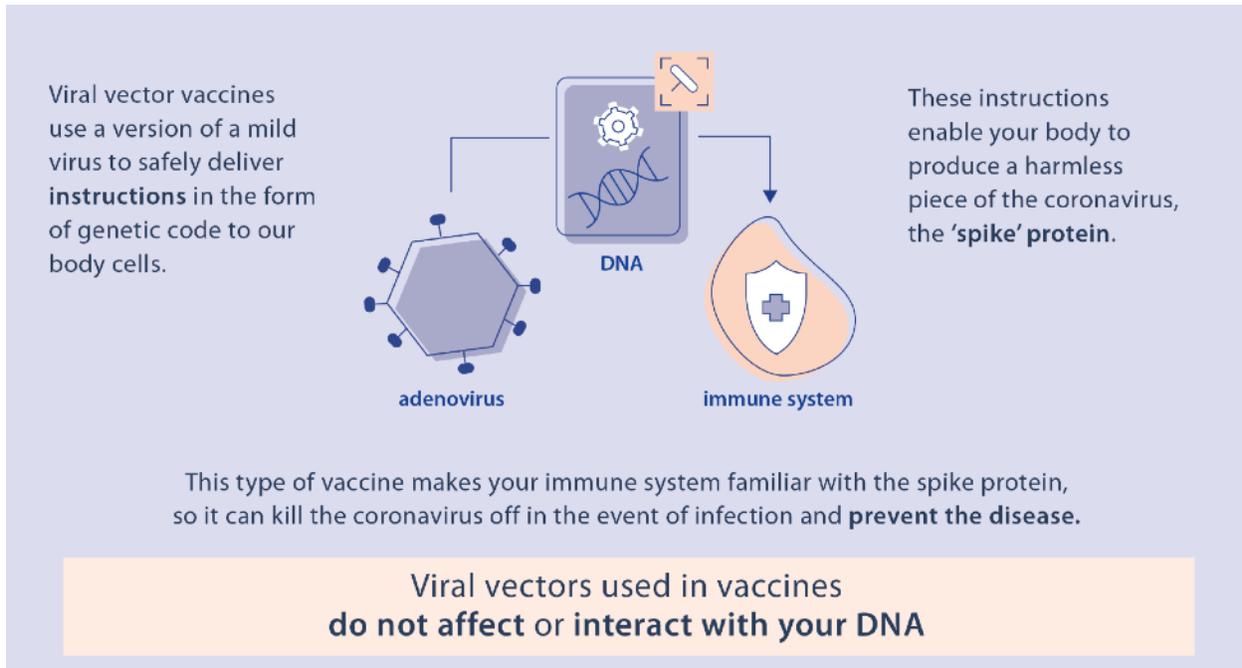


Image: [European Centre for Disease Prevention and Control](#)

Adenoviruses are viruses that cause the common cold. They do not cause COVID-19. People have been using these viruses for decades to deliver the instructions for proteins.

Once injected into the body, the virus contained within the vaccine produces the SARS-CoV-2 spike protein. This protein doesn't make you sick. It does its job and then goes away. Neither the vaccine material nor the protein affect or interact with your own DNA.

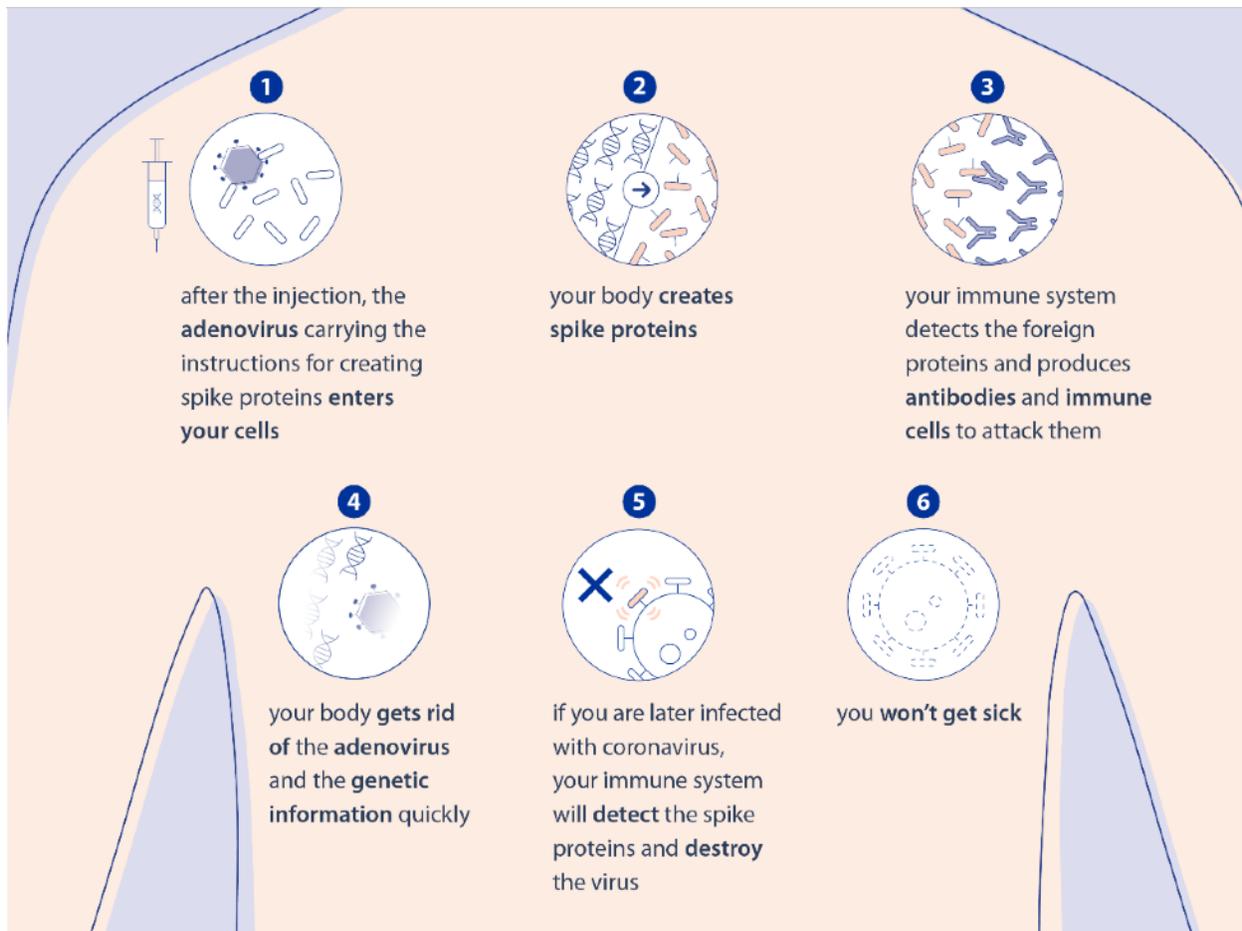


Image: [European Centre for Disease Prevention and Control](https://www.ecdc.europa.eu/en/covid-19/vaccines/how-it-works)

Through this process, the body is able to mount a strong immune response against the spike protein without exposing you to the virus that causes COVID-19.

How effective are they?

All approved COVID-19 vaccines in Canada are effective at preventing COVID-19. Real-world data continues to evolve. Overall, the vaccines are around 80 to 90 percent effective. There is also growing evidence that they are effective with a single dose alone.

Vaccine	Source (Date)	Protection against	Variant	Effectiveness	
				1 st dose	2 nd dose
Pfizer and Moderna	INSPQ (Mar 2021) [1]	Symptoms		80.3%	
				Infection with & without symptoms	89%
	Brown et al. (Mar 2021) [2]	Death		96%	

Moderna overall (groups with one or the other)		Infection with & without symptoms		79%	
	BCCDC (Feb 2021) [3]	Symptoms		80%	
	Thompson et al. (Mar 2021) [4]	Infection with & without symptoms		80%	90%
	Pawlowski et al. (Feb 2021) [5]	Infection with & without symptoms		74.2%	88.7%
		Infection with & without symptoms		60%	94.1%
		Symptoms		66%	96.3%
	Dagan et al. (Feb 2021) [6]	Infection without symptoms	B.1.1.7		90.4%
	Haas et al. Mar 2021) [7]	Hospitalisation		78%	96.0%
		Severe disease		80%	92%
		Death		84%	93.3%
	Heymann et al. (Mar 2021) [8]	Infection with & without symptoms		B.1.1.7	61%
Hyams et al. (Mar 2021) [9]	Hospitalization	B.1.1.7	71.4%		
Pfizer	Tande et al. (Mar 2021) [10]	Infection without symptoms		79%	
	Guijarro et al. (Mar 2021) [11]	Infection with & without symptoms		62%	99%

	Public Health England (Feb 2021) [12]	Symptoms	B.1.1.7	57%	88%
	Bernal et al. (Mar 2021) [13]	Symptoms	B.1.1.7	60%	90%
	Pfizer (Mar 2021) [14]	Infection with & without symptoms	B.1.351		100%
	Pfizer (Mar 2021) [15]	Symptoms			100%
Astra Zeneca	Bernal et al. (Mar 2021) [13]	Symptoms	B.1.1.7	73%	
	Hyams et al. (Mar 2021) [9]	Hospitalization	B.1.1.7	80.4%	
	Madhi et al. (Mar 2021) [16]	Symptoms	B.1.351		10.4%
Astra Zeneca or Pfizer (groups with one or the other)	Public Health England (Mar 2021) [17]	Infection with & without symptoms	B.1.1.7	72%	85%
	Lumley et al. (Mar 2021) [18]	Hospitalisation	B.1.1.7	67%	90%
	Shrotri et al. (Mar 2021) [19]	Infection with & without symptoms	B.1.1.7	62%	

Table: adapted from PHAC 2021-04-07. Effectiveness of vaccines

Why was there a difference in effectiveness in the clinical trials?

Clinical trials were done at different times around the world when different public health measures were in use and different variants of the virus were spreading. In these trials, the Moderna vaccine was about [94 percent effective](#) at preventing symptomatic COVID-19. When comparing about 15 000 people with both doses of the vaccine, and 15 000 people without it, there were about 94 percent fewer cases of symptomatic COVID-19 in the group who had the vaccine. (The Pfizer vaccine is not being administered by H Svcs, but the results are similar: in trials it is about [95 percent effective](#) at preventing symptomatic COVID-19. H Svcs is also not providing the viral vector vaccines: in clinical trials, the AstraZeneca vaccine was [63 percent effective](#) while the Janssen vaccine was [67 percent effective](#).)

Regardless, this is all really good compared to the effectiveness of other common vaccines: [influenza](#), 56-67 percent; [mumps](#), 76-95 percent; [Hepatitis B](#), 95-100 percent.

Are the vaccines effective against variants?

Yes. While SARS-CoV-2 does not mutate as frequently as influenza or HIV, it does mutate over time. Every time the virus is transmitted from person to person is an opportunity for a mutation to happen. The vast majority of these mutations do not change the characteristics of the virus and are considered “silent” mutations. Some mutations however can lead to a “variant of concern”, which is more transmissible, more severe, or more resistant to vaccines and treatment.

The three main variants we are worried about right now include:

- B.1.1.7: first identified in the UK, associated with higher transmissibility and potentially higher severity
- B.1.351: first identified in South Africa, associated with higher transmissibility
- P.1 and P.2: first identified in Brazil, associated with higher transmissibility and reinfection

The data so far is very encouraging that they provide protection, and over time we will learn more about the exact degree of effectiveness of the vaccines against the variants.

Vaccine	B.1.1.7	B.1.351	P.1 and P.2
Moderna	Produces protective antibodies (no significant difference from existing strains)	Produces protective antibodies (six-fold reduction)	Results not yet available
Pfizer	Produces protective antibodies (no significant difference from existing strains)	Produces protective antibodies (33 percent reduction)	Produces protective antibodies (P.1; similar to B.1.1.7)

AstraZeneca	Produces protective antibodies (no significant difference from existing strains). 75 percent effective against severe disease due to variant	Statistically significant results not yet available	Produces protective antibodies (P.1; similar to B.1.1.7)
Janssen	Results not yet available	57 percent effectiveness against moderate to severe disease	Results not yet available

Table: adapted from BlueDot report 2021-02-24. Effect of vaccine against infection with variants

Researchers are constantly working to make sure that vaccines keep up with resistant variants. As newer vaccines become available, they will go through [Health Canada’s regulatory process to confirm effectiveness and safety](#) before they are approved.

How long will protection last following vaccination?

We do not know how long protection will last following vaccination. It will be critically important to measure long-term protection as we go along. We are still learning about the duration of protection following infection with COVID-19 and it is too early to tell how long protection will last.

Will a booster shot be needed?

Maybe, we don’t know yet. Initial data shows the vaccines as they are, are very effective. The duration and quality of protection will be confirmed over time, likely over the next year, and advice around the need for a booster shot will follow. So far, we know that vaccines provide longer lasting protection than with natural infection.

Can I get COVID-19 from the vaccine?

No. The vaccine does not contain live or deactivated SARS-CoV-2 virus, which causes COVID-19.

Will getting the vaccine interfere with COVID-19 tests?

No. COVID-19 tests don’t look for the vaccine material, the replica spike protein your cells generate temporarily to make antibodies, or the antibodies themselves. The vaccine material and the replica spike protein disappear quickly after they are created anyway. The antibodies could be detected on a specific kind of test that looks for them, called a serology test, but this is not the same test generally used to check for COVID-19 infection.

Should I get the vaccine if I already had COVID?

Yes. Due to the health risks associated with COVID-19 and the fact that reinfection is possible, you should be vaccinated regardless of whether you already had COVID-19 infection. We know that many people do not have long lasting immunity after infection.

Experts do not yet know how long someone is protected from getting sick again after recovering from COVID-19. The immunity someone gains from having an infection, called “natural immunity,” varies from person to person. So far, it is rare for someone who has had COVID-19 to get infected again. It also is uncommon for people who do get COVID-19 again to get it within 90 days of when they recovered from their first infection. We won’t know how long immunity produced by vaccination lasts until we have more data on how well the vaccines work.

Can I get antibody testing to see if I’ve already had it? If I have the antibodies, why do I need the vaccine?

The protection someone gains from having an infection, called “natural immunity”, varies depending on the disease, and it varies from person to person. Because this virus is new, we don’t know how long natural immunity might last. Current evidence suggests that reinfection is uncommon in the 90 days after the first infection with the virus that causes COVID-19.

We won’t know how long immunity lasts after vaccination until we have more data on how well COVID-19 vaccines work in real-world conditions. Experts are working to learn more about both natural immunity and vaccine-induced immunity.

Should I get the COVID-19 vaccination if I am pregnant, planning to become pregnant, or breastfeeding?

The [Society of Obstetricians and Gynaecologists of Canada](#) says that “women who are pregnant or breastfeeding should be offered vaccination at any time during pregnancy if they are eligible and no contraindications exist”. About 10 percent of pregnant women require hospital care for COVID-related problems. Pregnant women with COVID-19 are more likely to need invasive treatment like a ventilator, as compared to non-pregnant cases. There is also an increased chance of pre-term birth with all the ensuing risk of prematurity for the infant.

While the vaccines were not initially tested specifically in pregnant women, there have been no specific problems identified so far in the global vaccination campaign. The [immunity generated by vaccines in pregnant and lactating women is better](#) than after natural infection, and without the risks associated with COVID-19. Additionally, immunity is transferred from the placenta and in the breast milk to newborns. You should consult with your clinician to weigh the advantages and limitations of COVID-19 vaccination.

What are the possible short term side effects?

Pretty much the same as other vaccines you’ve already gotten. As your body develops immunity after a vaccination, it is normal to experience symptoms.

<u>Moderna</u>	<u>Pfizer</u>	<u>AstraZeneca</u>	<u>Janssen</u>
Pain at the injection site (92 percent)	Pain at the injection site (84)	Pain at the injection site (75)	Pain at the injection site (59)
Fatigue (70)	Fatigue (63)	Fatigue (62)	Headache (44)
Headache (65)	Headache (55)	Headache (58)	Fatigue (44)
Muscle pain (62)	Muscle pain (38)	Muscle pain (49)	Muscle pain (39)
Chills (45)	Chills (32)	Malaise (44)	Nausea (16)
	Joint pain (24)	Fever (34)	Fever (13)
	Fever (14)	Chills (32)	
		Joint pain (27)	
		Nausea (22)	

Table: adapted from vaccine monographs. Most common side effects following vaccination

These generally occur within 1-3 days after vaccination, last for about 1-3 days and are mild, without the need for extended time away from work or modified duties. As usual, units can provide excused duties for two days without need for medical review or a sick chit.

A very small number of people will experience these symptoms more severely, to the point of preventing them from their regular daily activities and possibly needing short-term medical employment limitations (MEL). These are not common: for Moderna, about two percent after the first dose and ten percent after the second dose:

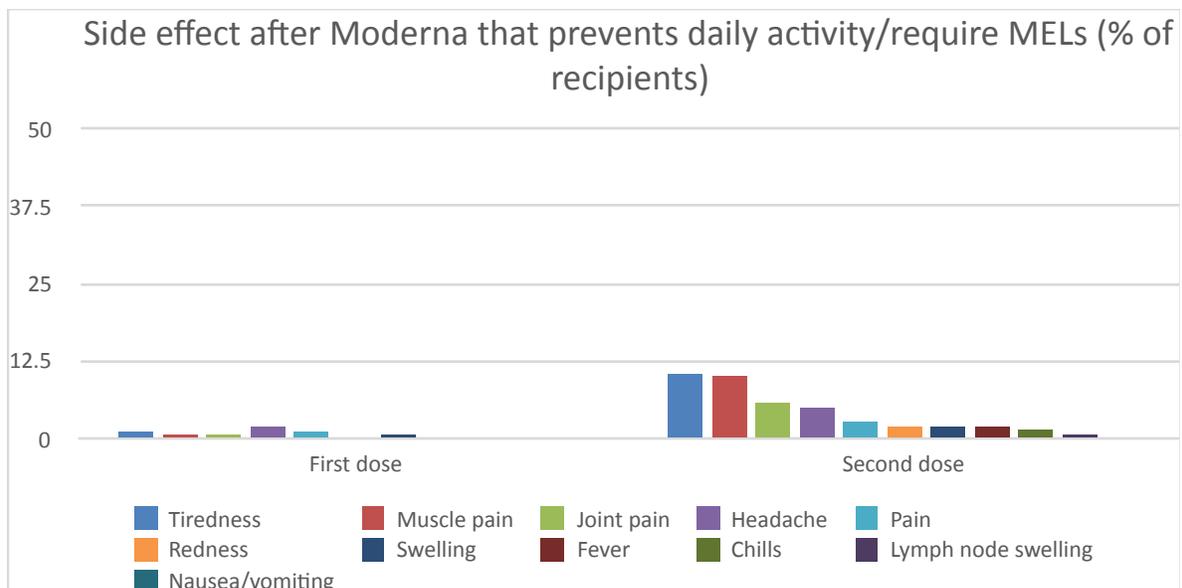


Image: adapted from [Moderna monograph](#). Percentage of vaccine recipients who have a side effect that prevents daily activity

There have not been any serious adverse events with the CAF so far. In the real world, serious side effects like allergic reactions are [rare](#): about 2-3 for every million doses. In clinical trials, only three serious adverse events occurred out of the 14 134 study participants that were likely related to the Moderna vaccine, requiring medical interventions and/or hospitalisation. All three events occurred after the second dose and all the individuals got better.

Will I need excused duties/sick leave after getting the vaccine?

Most people will not. As per usual CAF practice, units can provide two days of excused duties without need for medical review if a member is feeling ill. To reduce the risk that a unit will have many members who are affected by side effects, they can consider limiting the number of people who get vaccinated at the same time. For example, have no more than 1/3 of their members get vaccinated each week.

If I begin to feel ill after the vaccine, should I be concerned about being around my family members?

No. People who have a fever should stay home from work and away from their family members as much as possible, not because of any risk from the vaccine, but because it is possible that someone with a fever might have a different infection, completely unrelated to receiving the COVID-19 vaccine that simply occurred at the same time as receiving the vaccine. It also takes about 14 days for the shot to become effective, so infection is still very possible shortly after vaccination.

What are the possible long term effects of the vaccine?

We are still learning and have good reason for optimism. While these vaccines have years of development behind them, these specific vaccines are new and came to market following confirmation of safety amongst about 140 000 study participants followed for about three months. [About 500 million people worldwide](#) have been vaccinated so far. We know the vaccines are safe over these several few months, and have no scientific reason to expect they will be unsafe beyond that timeframe. Remember that the vaccine material and the protein they teach the body to recognise end up disappearing from our body.

But we continue to watch closely. Like all vaccines, the COVID-19 vaccines will undergo continuous monitoring following their approval. [H Svcs reports all adverse events to Health Canada](#) to make sure that drugs approved for use in Canada remain safe to use. Continued careful [monitoring and investigation of adverse events](#) at the national and global level assures detection of any such effects.

Based on how the vaccines work, [we know that they will not alter human DNA](#). The vaccine content disappears in a short time, and importantly it never enters the central part (nucleus) of our cells where our DNA lives. In fact, our bodies make our own mRNA all the time, and using it then removing it is normal for us. Even if the vaccine material stuck around, humans don't have

the enzymes to integrate it into our DNA. The vaccine material itself lasts just long enough to make the spike protein, then soon [breaks down through normal cellular processes](#).

There is no indication that the mRNA vaccines (Moderna, Pfizer) lead to autoimmune disease, whether by causing SARS-CoV-2 spike protein to be expressed on normal cells and becoming targeted by the immune system, or antibodies induced by the spike protein binding normal cells by mistake. No adverse effects attributable to an autoimmune cause occurred during clinical trials.

The possibility of [blood clots associated with the viral vector vaccines](#) (AstraZeneca, Janssen) was quickly identified by Canadian and global vaccine safety monitors and regulators, and is very rare: 1 in 250 000 to 1 in 1 000 000, and only with the first dose. [Canadian](#) and [global regulators](#) all agree that the overall benefits outweigh the risks. Guidance around the need for booster doses from the [National Advisory Committee on Immunisation](#) and other bodies will consider the theoretical potential of autoimmune disease.

There is no indication that the vaccine could lead to antibody-dependent enhancement, where infection after vaccination becomes much worse. In the clinical trials of both COVID-19 mRNA vaccines, both including more than 30 000 patients each, [no participants have developed ADE](#). Better yet, there are no reports of ADE amongst the 500 million people who have received vaccine so far. The [potential mechanisms for ADE in SARS-CoV-2 are well publicised](#) and because the virus continues to circulate broadly around the world, if ADE was going to be a problem, we would have seen it by now.

Overall, the [long term effects](#) we already know people will experience from COVID-19 disease, outweigh theoretical ones from the vaccine.

Do the vaccines use cells from aborted fetuses?

No. None of the vaccines use human derived material and no abortions were performed to research or produce them. As part of the development process, the [AstraZeneca and Janssen vaccines](#) (and some others we are not using in Canada) both used cells derived from fetuses that were aborted over 35 years ago, but these cells are not actually in the vaccine themselves. The Pfizer and Moderna vaccines do not use foetal cells during their development or production.

Ethicists and religious leaders worldwide generally agree that the pandemic poses an immediate danger to humanity, including continued death, severe illness and social harm, and that there is a moral imperative to resolve it as quickly as possible. For example, the [Vatican](#) affirms that “the morality of vaccination depends not only on the duty to protect one's own health, but also on the duty to pursue the common good”. The [British Islamic Medical Council recommends](#) that the vaccine can be taken, when offered.

How can the vaccines be safe if they were developed so quickly?

Think of it the vaccines as a house. But this house wasn't built from scratch, the foundation was already laid and the walls were already framed. What was needed was many tradespeople to show up at the worksite, and for others to give money to the building budget. Combined, those enabled the house to get built effectively and efficiently.

Researchers have been studying and working with [mRNA](#) and [viral vector](#) vaccines for very many years. For example, for as long as 50 years mRNA vaccines have been studied for flu, Zika, rabies and cytomegalovirus (CMV); researchers have also used mRNA to trigger the immune system to target certain cancer cells. The Ebola vaccine is an example of a proven viral vector vaccine. They vaccines can be developed faster than traditional methods because they're made in a lab using materials that are easily available. However, these technology advancements don't replace the large-scale clinical trials needed to show that the vaccine is safe and effective.

Because there is so much COVID-19 spreading around the world, it didn't take long for the trials to prove the benefit of the vaccines – which is different from diseases that spread much more slowly. No steps in the approval process were skipped. All the regulatory requirements, like of benefit and of safety, are no different from other vaccine development as they enter the market for the first time.

Normally, much of the delay in developing vaccines has to do with the business side of things: market research, raising investment, educating prescribers and building a customer pool. Because of the pandemic and guaranteed funding from governments around the world, scientists from multiple drug companies could focus on leveraging their decades of existing research to go straight into development, without worrying about financial risk.

Why did the vaccines get approved through an Interim Order instead of the regular process?

During an emergency, [Interim Orders](#) give the flexibility to adjust the usual sequence of steps that companies usually follow to get approval from regulators. It does not change the requirement for companies to prove that their products are safe and effective.

Usually, companies don't enter the authorisation process until a product has an established advantage over others and will be profitable. The Interim Order authorisation process means that companies simply submit all of their available supporting material about the safety and effectiveness of a product from clinical trials. They can submit additional data as it becomes available, rather than being locked into a fixed review schedule. They can also begin manufacturing and pre-positioning medication for delivery in anticipation of approval, instead of waiting for the official sign off. If the drug has already been approved in another country, the analysis and verification that was already done by the other regulator can be taken into account.

All of the research and safeguards of a clinical trial, including confirmation of safety and of effectiveness, happen regardless of whether a drug is approved by Interim Order or the usual process.

Why can't we wait for longer term (e.g. 1 year) data before vaccinating the CAF? Why should we receive the first-available vaccines when there are several other vaccines in trials?

The impacts of COVID-19 are already degrading the CAF's ability to train and employ our personnel. Broad vaccination – as soon as possible – is the best chance we have to maintain operational readiness, resume normal activities and prevent further infection, including the rise of viral variants. Vaccinated people will be protecting themselves, as well as their families and all the people they interact with. Evaluation of the first-available vaccines will continue, so they will have the most available data around effectiveness and safety. The release of other vaccines cannot be fully predicted, so people who are offered the first-available vaccines are highly encouraged to receive it.

Vaccine and Public Health Measures

Why do we have to continue public health measures after getting vaccinated?

Even with proven real-world effectiveness, there is still the real possibility of developing COVID-19 if exposed to the virus. Because there are still so many active cases, including ones without symptoms who don't know they are infected, there will still be virus spreading in our communities and units. And as long as virus is circulating, variants will continue to develop and potentially become resistant to vaccines and other treatments.

We are also still learning how well vaccines prevent transmission of virus from one person to another – until we know for sure, you could still infect others even if you are vaccinated.

Public health measures must continue until enough people are immune to stop the pandemic. Modelling shows that vaccination alone makes a huge difference and will save lives, but will not be enough to stop the virus from spreading. Both vaccination and continued public health measures, like distancing, activity restrictions, hand washing and masking, are needed to drive down infection rates.

When will public health measures be lifted?

We can't put a definite timeline on this yet. It depends on how quickly transmission of the virus stops. If enough of the population becomes immune – herd immunity – and the virus is no longer broadly circulating, public health measures will be lifted.

Health Canada modelling based on vaccine rollout plans in March predict that enough of the Canadian adult population could be immunised by mid-summer 2021 to start to relax control measures without causing a resurgence in cases. It is likely that they will be lifted gradually throughout 2021, not all at once, as population level immunity is confirmed and the risk of overwhelming the health care system drops. For example, we know that in jurisdictions like Israel and the UK, "[the success of the vaccination rollout, alongside falling infections and hospitalisations, is paving the way for the safe and gradual lifting of restrictions.](#)"

In general, public health measures across the CAF will continue to reflect those of the general population. Restrictions on activities will probably be the first to be relaxed. Some public

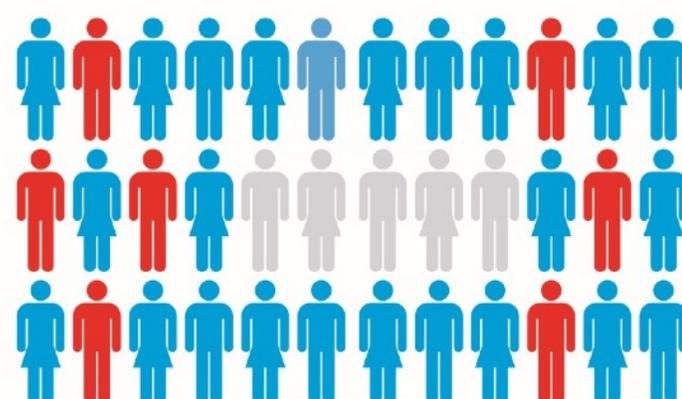
gatherings and travel would be permitted, though with some continued mitigation requirements like evidence of immunity, shortened quarantines and testing. The simplest measures, such as hand washing, masking when having symptoms and staying home when sick, should be expected to continue long term.

All of this depends on getting as many people as possible vaccinated, and soon – within the CAF, and Canada generally. The longer it takes to stop transmission, the more likely we will continue to face new variants and require continued activity restrictions and public health measures to maintain control.

When enough of the population is immune, the spread of the virus is limited and those without immunity are better protected.



Immune Infected Vulnerable



Canada.ca/Defence


Image: CAF. When enough people in a population are immune, the spread of virus is limited.

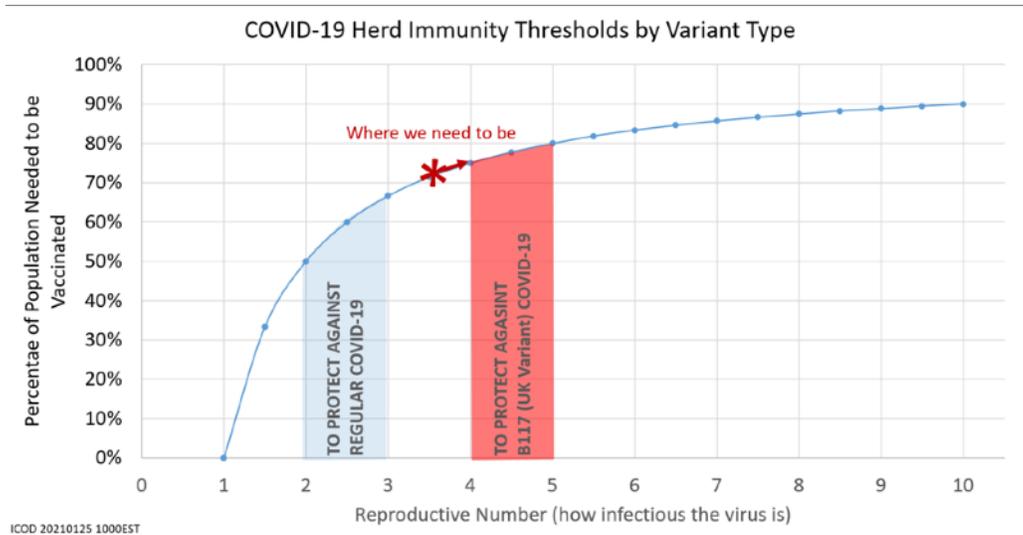


Image: CDLS(W) H Svcs attaché, LCol C Rossi. The number of new infections caused by each case, determines how much of the population needs to be immune to prevent further spread

Vaccine and the CAF

Why do generally-healthy military members need to get the vaccine?

Although the vast majority of COVID-19 in the CAF have been mild and resolved after 10 days, about [10 percent of cases](#) will have persistent symptoms lasting weeks to months. Many young and otherwise healthy individuals will require [prolonged rehabilitation after infection](#). COVID-19 could lead to medical employment limitations that will impact your fitness to serve, either temporarily or long-term. While there have been no deaths in the CAF, our allied forces such as the US have lost members due to COVID-19.

We don't operate in isolation either. CAF members have been part of transmission chains leading to further infections within their units and their communities: two-thirds of infections in the CAF have confirmed connections with other cases. Many of these are with our own families. Vaccination will help protect ourselves, our units and our loved ones.

Outbreaks, or even just the threat of an outbreak, have had operational impacts. Entire deployed sections have had to isolate/quarantine, camps have been locked down, and deployments and taskings have been cancelled. It's not just the cases: it's also all the people who need to be quarantined because they might have gotten infected. Broad vaccination – as soon as possible – is the best chance we have to maintain operational readiness, resume normal activities and prevent further infection, including the rise of viral variants.

Did you know?

For every case of COVID-19 in a unit, there are on average 12 people who have to quarantine as close contacts.



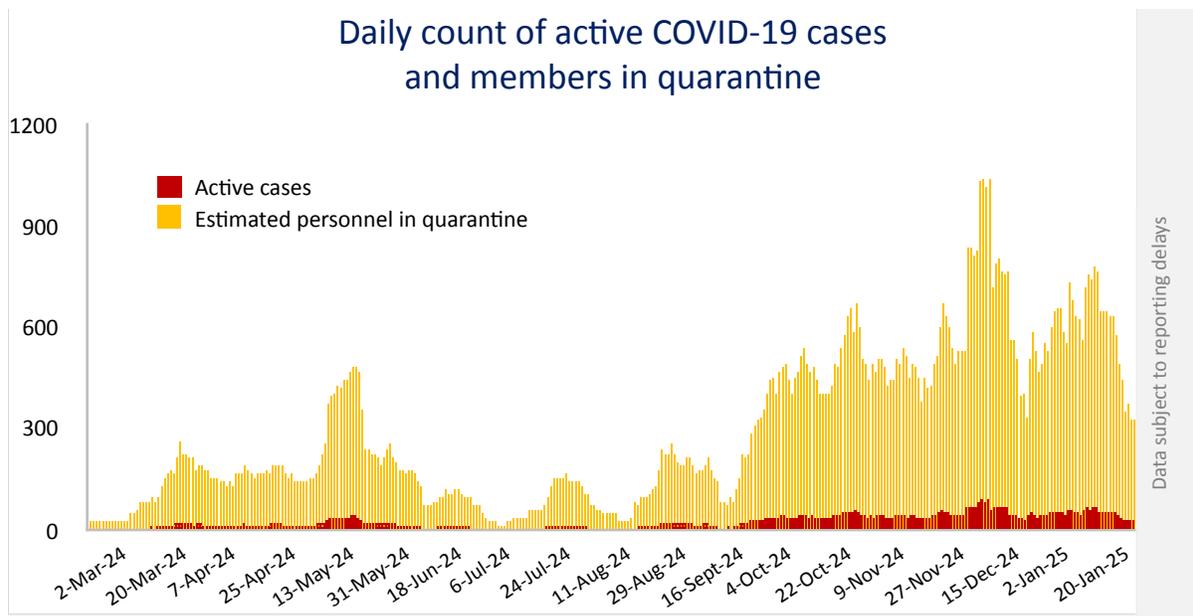


Image: DFHP Epidemiology. For every confirmed case, there are on average 12 additional persons under quarantine as close contacts

If an entire unit is vaccinated, can that unit relax its public health measures?

In general, the CAF will adjust public health measures in coordination with the surrounding civilian community. It is more likely that public health measures will be adjusted according to uptake across an entire base or wing rather than a specific unit, because individuals are expected to mix across units in any given location. Public health measures within specific CAF units could be adjusted based on vaccination uptake within a unit, the chance of continued transmission between the unit and the surrounding community, the operational context, other mitigating factors like pre-activity quarantine and testing, and the advice of the supporting medical advisor.

Will the vaccine be mandatory in the CAF?

The authority to make a vaccination mandatory in the CAF belongs to the [CDS alone](#). There are no such mandatory vaccines and none are anticipated by H Svcs. It is the CDS' intent that the authority to make a vaccine broadly mandatory across the general CAF population be retained at the L0 level.

While not mandatory, the vaccine can be recommended. Where and when there is a risk to the force that can be meaningfully prevented through immunisation, Directorate Force Health Protection will recommend vaccination on the basis of relevant medical evidence and best practice. The process of making such vaccines a criterion for readiness is discussed in [DAOD 5009-1 Personnel Readiness Verification Screening](#).

In the case of annual personnel readiness verifications (APRV), the standard series of recommended vaccines is described in D FHP Advisory [6643-12](#), and broadly matches vaccine

recommendations for the [general Canadian adult population](#). While the COVID-19 vaccine is [recommended for the general CAF population](#), it is not yet included in the standard series defined in 6643-12 because we don't know yet if or how often it might be needed after the pandemic is over. Therefore, COVID-19 vaccination is not currently assessed in an APRV.

In the case of DAGs for individuals selected for deployments or taskings outside their usual work location, recommended vaccines will vary according to context and will generally be promulgated in orders. The COVID-19 vaccine is [strongly recommended in many operational contexts](#). Either force generators or force employers will determine if the COVID-19 vaccine is a readiness requirement, with consultation with their respective medical advisor to ensure it is reasonably justified. Not taking the COVID-19 vaccine might interfere with DAG status, and thus whether a member can be tasked or trained, including deployments.

Will it be required for deployments?

Either force generators or force employers will determine if the COVID-19 vaccine is a readiness requirement, with consultation with their respective medical advisor to ensure it is reasonably justified. Factors to consider include individual and force health risks, the risk of infection impacting the mission – including outbreaks and the need to quarantine large numbers of people who might be infected – and the ability to mitigate these risks. Because of factors such as shared accommodation, limited access to medical facilities and military operational imperatives, the COVID-19 vaccine is [strongly recommended in many operational contexts](#).

How is my decision to refuse a vaccination going to be kept private and respected?

Personal information including decisions made during a medical visit are kept private and confidential. Medical personnel are professionally and legally obligated to respect your right to make informed decisions about your own health, and to not disclose personal health information to anyone without your consent or lawful authority. If a vaccination is a DAG requirement, the status of a member will be conveyed only by the defined colour codes in [DAOD 5009-1 Personnel Readiness Verification Screening](#), e.g.:

- Green – checklist item is current and the CAF member meets the requirement;
- Yellow – checklist item is expired and the CAF member does not meet the requirement but the item may be completed within 30 days;
- Red – checklist item is expired, the CAF member does not meet the requirement and item cannot be completed within 30 days;
- Grey – checklist item is not applicable or does not impact the readiness of the CAF member

Only the colour code is provided to the chain of command. The reasons leading to the assigned code disclosed to a medical provider are considered confidential medical information, whether it is refusal, an underlying medical condition preventing vaccination, etc.

Leadership

How should I encourage my troops to get the vaccine? What is the best messaging?

The best messaging is to appeal to what motivates them. Some members will be driven by a sense of duty and common responsibility, and will accept the vaccine as a way to ensure the health and safety of their colleagues and their community. Some are focused on being part of the CAF and ensuring mission success, and will accept the vaccine to enable the resumption of military operations and training. Others are motivated out of self-interest, and will accept the vaccine to protect their own health, avoid the potential long-term consequences of COVID-19, and regain some freedoms like to have social gatherings or travel. Others still might be focused on what they don't know, like how safe the vaccines are or what the effects might be. Most people have a bit of all of these. Your supporting medical advisor can assist with providing information, briefings and opportunities to address questions from your members.

Can I choose to have my vaccine done in front of my troops, with my RSM (if also a volunteer) as a way of setting the example?

Yes, that is an excellent way to demonstrate your confidence in the vaccine and its importance in assuring mission success, operational readiness, and of course the health of your members.

How do I encourage my members to get vaccinated and yet not pressure them, or seem to be pressuring them to get vaccinated?

Leading by example and leveraging natural leaders amongst your members is important. Being seen getting vaccinated and taking COVID-19 seriously is a start. Transparent and truthful explanations, like the operational impact of COVID-19 when an outbreak occurs – on average, every case leads to 12 contacts who must be quarantined, which degrades unit readiness – can motivate those who are driven by their identity as military professionals. Educating members on the potential long term consequences of COVID-19 – 10 percent of cases may develop chronic illness leading to temporary or permanent medical limitations – can also drive acceptance. Your supporting medical advisor can assist with providing information, briefings and opportunities to address questions from your members.

Dependents

When can I expect a vaccine for my dependents aged 16 and under?

Based on development timelines, vaccine might be approved for children by the end of 2021. No COVID-19 vaccine has been approved by any regulator for children as of yet. Moderna, AstraZeneca and Janssen are approved only for persons 18 and over, while Pfizer is approved for those 16 and over. Clinical trials often focus exclusively on adults to ensure that efficacy and safety monitoring are as streamlined as possible for approval purposes. For the vaccines approved in Canada, studies are now underway for persons [6 months to 12](#) and [12-18](#) (Moderna), [under 12](#) and [12-15](#) (Pfizer), and [11-16](#) (AstraZeneca).

Why should I get vaccinated if my dependents won't be vaccinated (e.g. my spouse may not get it at the same time as the CAF member or the children not at all)?

The vaccine will protect you from developing COVID-19, particularly if other members of your household are still vulnerable to becoming infected and transmitting the virus. It is also expected that being vaccinated will prevent you from becoming infected and transmitting it to them. In a [British study](#), having just one person vaccinated in a household reduces the likelihood of transmission in all households by 30 percent overall.

OUTCAN

Are the same vaccines provided in Canada going to be offered OUTCAN?

Every eligible person will be offered a Health Canada-approved vaccine. In some locations, Health Services has arranged for some host nation and allied medical services to offer Health Canada-approved vaccines from their own national allocations. In others, plans are underway to bring vaccines to eligible persons.

What if I am offered a vaccine by the host nation that is not approved by Health Canada?

While there are many effective vaccines that have not yet been approved by Health Canada, they might not meet the same effectiveness and safety standards of those used in Canada.

If a vaccine that is not approved by Health Canada is being offered, you should provide the details to your supporting medical advisor. Force Health Protection specialists and the Deputy Surgeon General will review against reliable sources. Only the Surgeon General can recommend a vaccine that is not approved in Canada.

If you choose to receive a vaccine not approved by Health Canada or recommended by the Surgeon General, you must understand the advantages and limitations. Your healthcare provider will be able to provide some guidance. While the key possible advantages are protection from COVID-19, and whatever associated privileges that apply in the host nation, it is at your own risk and expense. There could be career implications if you have a reaction to an unproven or unapproved vaccine. Future postings or deployments may require vaccination with an approved COVID-19 vaccine to assure an adequate level of immunity. Additional information relating to vaccines not approved by Health Canada is expected from higher authorities.

What about herd immunity internationally? What if I am vaccinated but there is yet no vaccination available for the local population?

Like all locations around the world, public health measures will continue until the spread of virus is no longer a threat. If you are vaccinated, you will be protected from developing COVID-19 if you are exposed to the virus. It is also expected that being vaccinated will prevent you from becoming infected and transmitting it to them. Every individual who is vaccinated brings the community closer to stopping viral spread.

Where can I get reliable information on vaccines that are being administered at my OUTCAN post?

This will vary by post and should be directed to your supporting medical advisor. Generally, the manufacturer's monograph as approved by a regulator is the best source for validated information. If the vaccine is approved by Health Canada it will be [readily available on their website](#) in English and French.

I am OUTCAN and being offered AstraZeneca by the host nation, but I heard about a possible link with AZ and a blot clot problem.

In the OUTCAN context where medical care is limited and the operational impact of COVID-19 infection is high, the individual benefit of AstraZeneca to prevent COVID-19 generally outweighs the risks. Those who have already received 1 dose of AZ without problems should receive their 2nd dose to complete the series.

AZ is effective against COVID-19. COVID-19 and its complications continue to be a global threat and a hazard to operations. The individual risk of COVID-19 may be even higher in remote or isolated locations, depending on how much virus is in the community and whether or not hospital level care is available or reliable.

What is the issue with AstraZeneca vaccine?

After reports of a blood clot disorder possibly associated with AstraZeneca vaccine, regulators in the [UK](#), [Europe](#) and [Canada](#) completed a thorough review of the millions of individuals who received it. They determined that, overall, the benefits outweigh the risks.

This problem, called [VIPIT](#) or VIIT, is extremely rare, and it is [treatable](#). European data suggests it could happen in between 1 per 250,000 to 1 per 1,000,000 people who receive the vaccine. This problem has occurred only in Europe, and only after the first dose. No such problems have occurred in Canada or amongst CAF members. There are no confirmed risk factors for it. It is an entirely different kind of clotting problem than other clotting disorders: a past history of other clotting problems does not increase the risk of VIPIT.

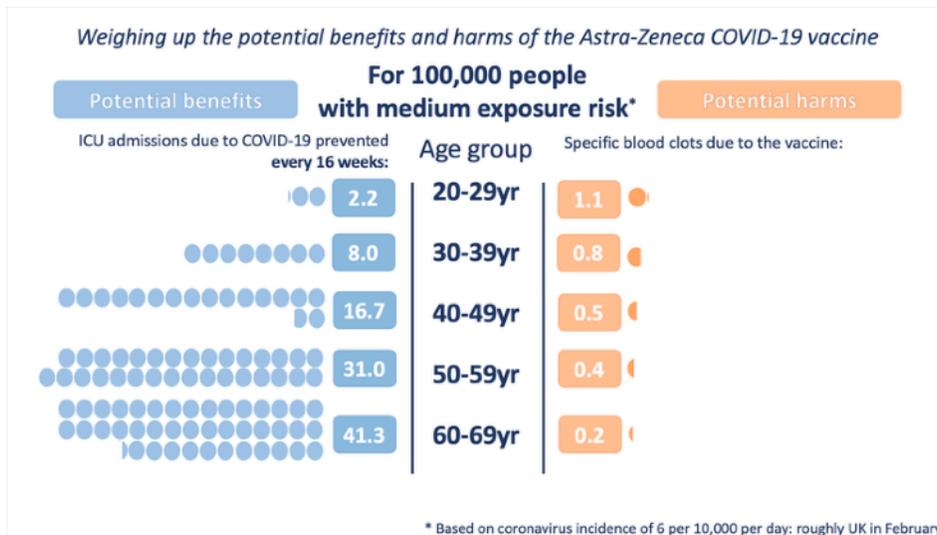
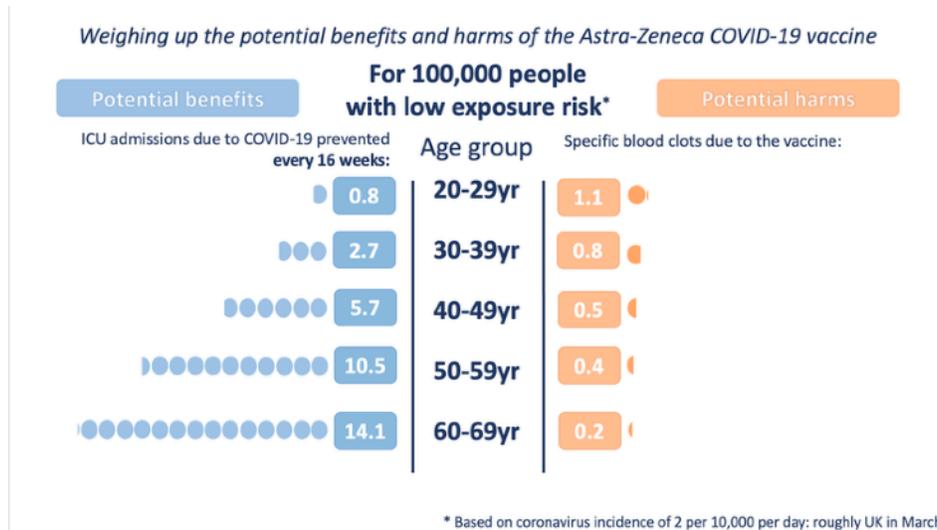
What is the risk of VIPIT compared to the risk of blood clots from other causes?

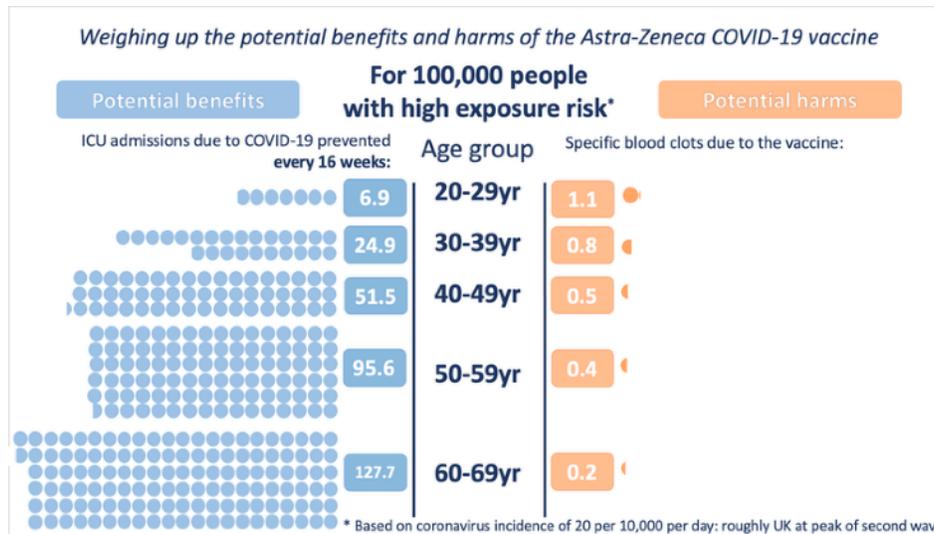
Overall, blood clot problems and other medical complications occur much less often in people who have received vaccine as compared to those who have not. For comparison, the risk of a [blood clot from the birth control pill](#) is about 50 per 100,000 per year. Blood clots also happen after COVID-19 itself: [up to half of all patients with severe COVID-19](#) can develop them.

What is the risk of VIPIT compared to the risk of COVID-19 and complications?

According to [analysis from the University of Cambridge](#), the potential benefits (e.g. prevention of COVID-19 requiring ICU care) outweigh the potential harms in all age groups, except for those

20-29 and only when the risk of exposure to COVID-19 is low. Besides blood clots, about [10 percent](#) of all people who develop COVID-19 have medium to long term health problems. Many young and otherwise healthy individuals will require [prolonged rehabilitation after infection](#).





Images: University of Cambridge. The potential benefits of AZ are greater than the potential harms in all age groups, but balance out in those under 30 with low exposure risk. Low exposure risk = [prevalence](#) of about 1%; Medium exposure risk = [prevalence](#) of about 2%; High exposure risk = [prevalence](#) of about 3-4%

I (or my dependents) have had my first dose of AZ, what should/can I do now?

In the 20 days after vaccination, you should seek immediate medical attention in the unlikely event that you develop symptoms such as

- shortness of breath
- chest pain
- leg swelling
- persistent abdominal pain
- sudden onset of severe or persistent worsening headaches
- blurred vision
- skin bruising (other than at the site of vaccination)

If you did not have any of the above problems, you should get the 2nd dose of AZ. VIPIT does not happen with the 2nd dose.

If you are considering deferring the 2nd dose of AZ, to try to get a different vaccine:

- This is not recommended. VIPIT does not happen with the 2nd dose
- If another vaccine becomes available, you should wait at least 28 days after the first AZ vaccine as per [NACI recommendations on vaccine spacing](#) (so if the switch happens when you are scheduled for your 2nd dose, this should be fine)
- You are not considered fully immunised until you have completed the indicated series for a particular product (i.e. you will now need the 2nd dose of the other product to be considered complete)
- There is no indication of any harm in receiving vaccines of different types, however [clinical trials examining this specifically](#) have not yet been completed. We are reassured

though that there is no real-world safety indications suggesting that such trials should be ended early/cancelled

There are no other vaccines available for me and my dependents, and we haven't received any shots so far. What should we do?

Based on the data, the benefits of AZ far outweigh the risks overall. Only in those 20-29, and in areas where COVID-19 is low, does the possible risk of VIPIT exceed that of COVID-19.

If you accept AZ: in the 20 days after vaccination, you should seek immediate medical attention in the unlikely event that you develop symptoms such as

- shortness of breath
- chest pain
- leg swelling
- persistent abdominal pain
- sudden onset of severe or persistent worsening headaches
- blurred vision
- skin bruising (other than at the site of vaccination)

If you defer AZ:

- There is no guarantee that an alternative vaccine will be available in future
- You will be at risk of COVID-19 in the meantime and not eligible for any lifting of control measures extended to vaccinated people
- Adherence to public health measures must continue as your only defence against COVID-19

Useful references

- Health Canada, [Vaccines for COVID-19](#)
- US Centers for Disease Control and Prevention, and the Infectious Disease Society of America, [Vaccines FAQ](#)

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