

Dr. Samantha Reaume, Family Physician with the STAR Family Health Team Answers Some Frequently Asked Questions (FAQs) about the COVID-19 Virus and the COVID-19 Vaccines

1. Can you explain the omicron variant of the Covid-19 virus?

As noted with the “Delta variant”, Omicron is the most recent variation of the COVID-19 virus, first reported to the WHO November 24, 2021. New information is coming in every day, and it appears that it is overtaking the Delta variant as the key variant of concern. What we know already is that this variant is EXTREMELY contagious. It is doubling its number of cases every 2-3 days. If it continues to grow at this rate, everyone in the world will have been infected or exposed in the first 3 months of 2022. We also know that vaccines do not give as good a protection against omicron. Protection against severe illness (hospitalization and death) likely remains high, but protection against any illness (mild or moderate symptoms) is much lower with one or two doses. A third dose of COVID vaccine is expected to provide about 75% protection against symptomatic illness from the omicron variant.

There has been much discussion about omicron being a milder illness. This would certainly be a nicer turn of events if it was true. However, there is more study required on its impact here in North America and in Western Europe, as the current evidence is being based on the population in South Africa which is much younger (average age 27 years vs 40 years in Ontario) and has a much higher level of natural immunity (it is thought that as much as 80% of the South African population has already had COVID-19). Because of how much more contagious the omicron variant is, it would have to be tenfold less severe in order to not overwhelm our hospital system. It is simply too early to tell if this is true.

The best protection against the omicron variant remains vaccination. It is strongly encouraged that you get your 3rd dose of COVID vaccine as soon as you are eligible.

2. Are the vaccines effective against the variants and the new emerging variant, Omicron?

Studies have shown that the available vaccines have overall been highly effective in reducing COVID-19 infections caused by the variant strains. This has reduced hospitalizations, ICU admissions and even death. What appears to be emerging with the Omicron variant strain, is that the current vaccines do not give as good a protection against omicron. Protection against severe illness (hospitalization and death) likely remains high, but protection against any illness (mild or moderate symptoms) is much lower with one or two doses. Individuals not vaccinated show some of the highest rates of hospitalization and death from COVID-19 infection. The current research, is indicating that a third dose of COVID vaccine is expected to provide about 75% protection against symptomatic illness from the omicron variant.

3. With the emergence of cold/flu- like symptoms during this winter season, how do I know it's not a COVID-19 infection?

You really won't be able to tell the true difference unless you were to get tested to rule out a COVID-19 infection. A conclusive test to determine whether your symptoms are COVID-19 or

not is a PCR test that is arranged at a local testing/assessment center. These centers often have a physician on staff who can assess and treat you, in addition to you receiving a COVID swab?

To find a center in your area, check the following link:

<https://covid-19.ontario.ca/assessment-centre-locations>

4. I've heard that the mRNA vaccines can affect your heart. Are they safe?

Both mRNA vaccines PfizerBioNTech and Moderna have a **very rare** side effect that causes inflammation of the heart muscle (myocarditis) or the sac containing the heart (pericarditis). This is caused by the body's immune response and can occur within 28 days of the vaccine, and mostly after the 2nd dose. This is a side effect that seems to primarily affect teenage boys, ages 12-17 yrs. old and at a rate of 1 in 16,000 doses. The rate at which female youth have pericarditis/myocarditis after vaccination is no different than if they had received no vaccines.

Common symptoms include chest pain, shortness of breath, racing heart, and the feeling that the heart is beating abnormally (palpitations). The symptoms are usually very mild but the person is urged to seek immediate medical attention. Mild cases are often treated with monitoring and anti-inflammatories, such as ibuprofen. More severe cases would be treated in the hospital. **There have been no deaths caused by the mRNA vaccines.**

When vaccinating young people, who tend to be at lower risk overall from serious illness from COVID-19, it is important that any benefits of the vaccines far outweigh the risks associated with the vaccine and/or not getting vaccinated against COVID19 virus. To answer this question of risks versus benefit, the Center for Disease Control (CDC) did a review of all of the vaccines they had done in youth and compared it to unvaccinated youth. For every 1 million doses of mRNA vaccine administered to boys aged 12-17, it prevented 5700 cases of COVID, of which 215 would be hospitalized, 71 admitted to ICU and 2 would die. Of these 1 million doses, there would be 56-69 cases of pericarditis/myocarditis. In my interpretation, the benefit of the vaccine in preventing COVID-19 infections outweighs the harm.

5. When should I get my vaccine and which one should I get?

Now! Don't delay. The province of Ontario is committed to distributing COVID-19 vaccines to all eligible individuals 5yrs old+. It is available through local pharmacies, public health with their scheduled vaccine clinics. Check the website of your local public health unit or contact your pharmacy in your area for dates/times and details on registering for an appointment. Your family physician office may also have a supply of the vaccine; however, it is recommended to call their office first to make inquiries. We are lucky enough to have four **safe and effective** COVID-19 vaccines available to us in Canada. It is recommended that you take the first vaccine you are offered.

6. I'm not at risk of COVID-19, why should I get a vaccine?

We are all at risk for “catching” the COVID-19 virus. Some people will have no symptoms whereas others can experience mild, moderate to severe symptoms where a person could die from the disease. In all cases when you have the virus, you can spread it to other people, especially the most-at-risk for serious complications. COVID-19 vaccination will help protect you by creating an antibody (immune system) response without having to experience sickness, and will prevent you from spreading the virus to other people.

7. I’ve already had COVID-19, should I still get the vaccine?

Yes, you should be vaccinated regardless of whether you already had COVID-19. That’s because experts do not yet know how long you are protected from getting sick again after recovering from COVID-19. Even if you have already recovered from COVID-19, it is possible—although rare—that you could be infected with the virus that causes COVID-19 again.

8. I don’t want to be a guinea pig. I’d rather wait....

While more COVID-19 vaccines are being developed as quickly as possible, routine processes and procedures remain in place. In the development of these vaccines no steps were skipped in the process of developing, testing, approving and producing the vaccines. Canada’s best independent scientists have thoroughly reviewed all the data before approving the vaccine as safe and effective for Canadians. The vaccines were produced faster than before not because of skipped steps but because of never-before-seen levels of collaboration and funding around the world invested in this effort. Normally, to test if a vaccine is safe, clinical trials need between 6,000-8,000 people to test the vaccine. Pfizer-BioNTech trial had over 45,000 people, Moderna trial had over 30,000 people and the AstraZeneca-Oxford trial over 11,000 people. The steps in all the vaccines that have been developed to fight the COVID-19 virus have been carefully developed and meet all standards of safety to protect you and your family.

9. What about the long-term data?

As we all live through this pandemic caused by the COVID-19 virus, there are still unknowns that scientists are closely monitoring, where there is a need for long-term data. For example, how long a person is protected from getting the virus once they have received their vaccine? Scientists around the world are monitoring this and many other outcomes as more and more people are vaccinated.

10. Will the mRNA alter my DNA?

No, mRNA will not change your DNA. mRNA vaccines like the ones made by Pfizer-BioNTech and Moderna are molecules that carry specific instructions for making proteins. The protein it is instructed to make is the spike protein that is on the outside of the COVID-19 virus. Once the

protein is made, your immune system will recognize that this protein is different from other proteins in the body and will respond, defending the body by making antibodies to it. Just as it would if you were infected with the COVID-19 virus naturally. Once the mRNA does its job of making the spike protein to help your body create an immunity to the COVID-19 virus it quickly degrades, never entering the nucleus of the cell that contains your DNA.

11. Will I still have to wear a mask after I am vaccinated?

Yes, you will have to continue to wear a mask even after you are vaccinated, unless told otherwise by public health authorities. Vaccines can protect, but what we haven't had enough time to really understand is -Does it protect from spreading? Even though we have received the vaccine, in most cases we are protected from coming down with the symptoms of COVID-19. There is some emerging evidence in which some fully vaccinated people have come down with very mild symptoms of COVID19. These people have shown to be able to spread the virus through talking, sneezing, coughing etc., because it can still live in our respiratory tract spreading it to vulnerable people. Therefore, wearing a mask, prevents us from spreading the virus. Until everyone is vaccinated and we see low levels of Coronavirus infection in our communities we still must practice public health measures like wearing a mask, social distancing etc. to keep other people safe.

12. Are the side effects worse after the second dose and third dose?

In some instances, people can have more side effects after receiving the second or third dose of the COVID-19 vaccine this is because after the first dose, it is the first time for your body to see the spike protein that the COVID-19 vaccine produces and your body begins to develop an immune response. This happens slowly. When a person comes back for a second dose, your body is ready to attack it, making more spike proteins and more antibodies against that spike protein to rev up your immune system and give you protection from the COVID-19 virus. This increased immune response to receiving this second dose may cause more side effects to appear, which are usually harmless and resolve within 72 hours after receiving the COVID-19 vaccine.

13. What is the deal with the AstraZeneca-Oxford vaccine?

The AstraZeneca-Oxford vaccine is one of the four approved COVID-19 vaccines in Canada. It has 59.5% efficacy in preventing ANY COVID-19 symptoms and 100% efficacy in preventing COVID-related hospitalization and death in clinical trials. It has been widely distributed throughout the world, with tens of millions of people having received doses of this vaccine. There have been reports of a very rare type of blood clot in the brain (venous sinus thrombosis) associated with very low platelet count in people who have received the Astrazeneca-Oxford COVID-19 vaccine. As of today (April 7, 2021), it has not been conclusively shown that this is connected to the Astrazeneca-Oxford vaccine, but regulatory authorities are saying there may be a link. As a result, use of the Astrazeneca-Oxford vaccine has been limited in Canada to those

who are 55 years and older. This is because all of the reported cases of this rare condition have been in those 60 years and younger. If connected to the Astrazeneca vaccine, this rare side effect would happen in approximately 10 people for every 1 million doses administered. The science is constantly evolving, and scientists are making decisions with the best available and most recent evidence. This type of very rare side effect is usually not captured in clinical trials, and this is why we have ongoing safety monitoring.

It is important to keep in mind that the risk of blood clots associated with COVID-19 is much higher than with the Astrazeneca-Oxford vaccine. In all, 9-14 people have died from this rare condition out of the tens of millions of Astrazeneca-Oxford doses administered. This is in comparison to the 2.8 million deaths globally from 132 million COVID-19 infections (and with >23 000 deaths from >1 million infections in Canada). With our current rapidly rising case counts of COVID-19 in our province, it is important that all eligible Ontarians roll up their sleeves and get vaccinated as soon as possible - with the first vaccine that is offered to them.