

Here are some common questions related to vaccination. If you have any hesitancy towards the vaccine, please review these concerns so that when the time comes for you to receive it, you feel well informed and hopefully do not hesitate.

### **1. Did scientists and the government skip steps to rush vaccine production and approval?**

- No steps were skipped in the process of developing, testing, approving, and producing the vaccine.
- 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, vaccine clinical trials need 6000-8000 people for the approval process. The Pfizer-BioNTech trial had over 45,000 people and the Moderna trial over 30,000.
- Unlike with other vaccines that go one step at a time and then plan the next step, for the COVID-19 vaccines, governments invested in having companies plan all the steps at the beginning and build up their manufacturing capacity right away.

#### *References:*

- *COVID-19 vaccine approval process and safety (MOH, Dec 12, 2020)*
- *Pfizer-BioNTech COVID-19 vaccine: Authorization information (Health Canada, Dec 11, 2020)*

### **2. How can the vaccine have been developed so quickly?**

- The use of mRNA for vaccines and treatment of disease has been around for a while – that's one of the reasons why these vaccines could be developed so quickly. mRNA vaccines have been used in animal models for influenza, Zika, Rabies, CMV and others, and in humans for cancer treatment and cancer vaccine clinical trials.
- mRNA vaccines are like CD players that can play any kind of CD- classical music, rap or pop. The scientists had the CD player before COVID-19 hit. Once they figured out the Coronavirus CD, they could place it into the player and make the vaccine a lot faster than before, since they used what was known and built on it.

#### *References:*

- *mRNA vaccines — a new era in vaccinology (Nat Rev Drug Discov, 2018)*
- *Safety and Efficacy of the BNT162b2 mRNA COVID-19 vaccine (NEJM, Dec 10, 2020)*
- *Promising Interim Results from Clinical Trial of NIH-Moderna COVID-19 vaccine (NIH, Nov 16, 2020)*

### **3. I don't need a vaccine. I am not at risk/COVID-19 isn't that bad.**

- COVID-19 is much more serious than the flu. In Canada, the flu kills roughly 3,500 patients per year. In less than a year, COVID-19 has killed 4 times that many.
- Even if you do not develop severe COVID-19 infection, you may still pass on the virus to someone who will. If you are vaccinated, you're helping protect the people around you.

#### *References:*

- *Flu facts. (Gov of Ontario, 2020)*
- *Long-Term Sequelae and COVID-19 – What We Know So Far (PHO, July 10, 2020)*
- *Emerging evidence: Prolonged symptoms of COVID-19 (CEP, 2020)*

### **4. I will wait to get the vaccine. There are not enough vaccines to go around/I want to see what happens to others who have received it.**

- The pandemic, the lockdowns, and public health measures will not end until the majority of Canadians are vaccinated. To ensure we can vaccinate everyone as quickly as possible, it is important that people access the vaccine the first time it is offered to them.
- Canada has ordered more than enough vaccines - supposedly, we have purchased more shots per person than any other country in the world. We will be getting those vaccines delivered over time. The implementation plan of those vaccines is designed to most efficiently end this pandemic. You can feel confident that when you are

offered one, it is because it is the right time for you to get it. This is your chance to do your part to end the pandemic and get back to normalcy quickly.

- If you wait to get vaccinated and get infected in the meantime, you may end up in hospital – which would put more strain on the system than getting the vaccine.
- If Canadians wait to get the vaccine, more people will die.

*References:*

- *Vaccine Availability and Rollout (MOH, December 12, 2020)*

## **5. How do mRNA vaccines work?**

- The purpose of any vaccine is to mimic the infection, get the body to build immunity to the virus but not cause the illness. The vaccine will train the immune system to recognize COVID-19 and respond quickly if you are ever exposed to the actual COVID-19 virus.
- mRNA is something we already rely on in our bodies. On a regular basis, mRNA (messenger RNA) carries genetic messages from the DNA to the ribosomes - the “kitchen” of each cell, where the proteins we need for everyday life are made. mRNA is the recipe that carries information for protein production. Our immune system “reads” our proteins to develop antibodies.
- A COVID-19 mRNA vaccine contains the genetic material to make the “spike protein” that instructs the immune system to develop antibodies against COVID-19. This spike protein does not cause disease: rather, once our immune system sees the spike protein made, it builds antibodies to it. The vaccine does not stay in your body and does not change your own body in any way. After the protein is made, the cell breaks down the recipe instructions (mRNA).

*References:*

- *SARS-CoV-2 mRNA vaccine design enabled by prototype pathogen preparedness (Nature, Aug 5, 2020)*
- *Understanding mRNA COVID-19 Vaccines (CDC, Nov 23, 2020)*
- *Can mRNA vaccines mess with genes or change DNA?*
- *mRNA vaccines do not change your DNA. Human beings do not have the enzymes to convert RNA into DNA. In fact, our cells have enzymes that destroy the mRNA after the protein is made – which is why the vaccine doesn't stay in your body for long.*

*References:*

- *COVID-19 and mRNA Vaccines—First Large Test for a New Approach (JAMA Sept 3, 2020)*
- *Understanding mRNA COVID-19 vaccines (CDC, Nov 23, 2020)*
- *Unlocking the potential of vaccines built on messenger RNA (Nature Outlook, Oct 16, 2019)*

## **6. Can mRNA vaccines cause COVID-19?**

- No. The vaccine cannot give you COVID-19 or any other infectious disease. None of the licensed vaccines so far use the live virus that causes COVID-19.
- It is still possible to contract COVID-19 after you have been vaccinated. Like with other vaccinations, it takes a few weeks for the body to build immunity after vaccination. Someone could be infected with the virus just before or just after vaccination and get sick, because the vaccine didn't have enough time to provide protection.

*References:*

- *Pfizer-BioNTech COVID-19 Vaccine Info Sheet (MOH, December 13, 2020)*
- *Pfizer-BioNTech COVID-19 Vaccine Patient Medication Information Handout*

## **7. Why do we need two shots (Pfizer and Moderna Vaccines), and when can we consider ourselves protected?**

The level of immune response begins to show 10-14 days after the first dose, but clinical trials show that to receive the best response and optimal immunity, two doses are required 21 -28 days apart (depending on which vaccine).

### **8. What will I feel like after the vaccine? What are the side effects?**

You can expect to feel similar to what you feel after receiving the flu vaccine. In the short-term, you may experience minor symptoms such as localized swelling or pain at the injection site. You can also feel unwell or get a headache or fever that lasts a few days.

### **9. I have heard that people who have experienced anaphylaxis or allergies should not take the vaccine? Who else should not take the vaccine?**

- Health Canada recommends those who have experienced anaphylaxis should avoid the vaccine only if they've had an allergic reaction to the first dose of the two-dose regime, or those allergic to one of the components. The National Advisory Committee on Immunization recommends women who are pregnant or breastfeeding should also avoid the vaccine. If you have specific questions regarding your eligibility, ask your doctor.

### **10. How long will this vaccine protect us? Will we need to get it annually like the flu shot? How is the COVID-19 vaccine different from the flu vaccine?**

We do not know yet how long it will protect us, but the vaccine will continue to be studied to understand if we require annual vaccines, as we do with the flu shot. The flu vaccine triggers an immune response with a weakened or inactivated virus, whereas the COVID-19 vaccine allows our cells to make a protein that triggers an immune response and produce antibodies that protects us from getting infected.

### **11. Why are children not eligible for this vaccine? How will we achieve herd immunity if we cannot vaccinate children for another year?**

The vaccine is approved for people 16 years of age and older. Clinical trials are underway for those aged 12 to 15, and under 12. It is likely children will be involved in Phase Three of the vaccine distribution (later this year) as further studies are completed.

### **12. How soon after getting the vaccine can we return to life before COVID-19?**

It may take months or even years to see a dramatic decline in cases following the vaccine. This is why it's important to get it when your time arrives. Until we see a significant impact on the pandemic, public health and all levels of government will continue to mandate COVID-19 precautions such as physical distancing, wearing masks, and frequent hand washing.

If you have any further questions regarding COVID vaccination, please contact your healthcare provider at Etobicoke Medical Centre.

Etobicoke Medical Centre Family Health Team