COVID-19 Vaccine

Update #3 for health care providers
5 March 2021

The vaccines are highly efficacious, in the short-term against symptomatic COVID-19 disease. However, there is insufficient data to demonstrate prevention of transmission to others.

Characteristics of the three COVID-19 Vaccines approved for use in Canada

Manufacturer	Pfizer-BioNTech	Moderna	AstraZeneca
Authorized in Canada	December 9, 2020	December 23, 2020	February 26, 2021
Vaccine platform	Messenger RNA	mRNA	Non-replicating viral vector
Indications for use	16 years and older	18 years and older	18 to 64 years old
Efficacy after 2-doses	95%	94%	62%
Dosage	0.3mL	0.5mL	0.5mL
IM injection	Yes	Yes	Yes
2 Dose Schedule	Yes	Yes	Yes
Vaccine storage	-80° to -60°C	-25° to -15°C	2° to 8°C
Usage at room temp 2° to 25°C	use within 6 hours after dilution	use within 6 hours after vial is punctured	use within 6 hours, or within 48 hours at 2 to 8°C
Diluent	0.9% sterile	No dilution is required	No dilution is required
Preservative	No	No	No
Multi-dose vial	5 to 6 doses	10 doses	8 & 10 doses
Contraindications: 1. allergies to any COVID-19 vaccine ingredients 2. severe reactions to their first dose of COVID-19 vaccine	#1 including allergies to PEG #2	#1 including allergies t PEG, or tromethamine #2	#1 including allergies to polysorbate #2

Common side effects include pain at the injection site, fatigue, headache, muscle pain, chills, joint pain, and fever. Some side effects, including fever, are more frequent after the second dose of mRNA vaccines; but not with the AstraZeneca COVID-19 vaccine.

About the COVID-19 Vaccines
Pfizer-BioNTech & Moderna vaccines uses a lipid-encapsulated messenger RNA. The mRNA provides instructions to the cell to produce spike proteins that are specific to the coronavirus (SARS-CoV-2). The immune system is engaged by the spike protein. The mRNA and spike protein are degraded and excreted

within days to weeks from the time of immunization. The mRNA does not enter the nucleus of the cell and does not interact with the DNA. The vaccine does not contain live virus and cannot cause infection to the patient.

AstraZeneca is a viral vector vaccine which uses a weakened adenovirus as a carrier to deliver the genetic sequence for the SARS-CoV-2 spike protein. Once it has delivered the SARS-CoV-2 spike protein genetic code, the adenovirus is destroyed by the body. This then stimulates the immune system which reacts by producing antibodies and memory cells to the SARS-CoV-2 virus without causing disease.

COVID-19 Vaccine Ingredients

Pfizer-BioNTech	Moderna	AstraZeneca
active ingredient: mRNA	active ingredient: mRNA	ChAdOx1-S recombinant
lipids, cholesterol polyethylene glycol [PEG]	lipids, cholesterol polyethylene glycol [PEG]	amino acid: L-Histidine, L-Histidine hydrochloride monohydrate emulsifier: polysorbate 80
salts: potassium chloride, monobasic potassium phosphate, sodium chloride, dibasic sodium phosphate dehydrate sugars: sucrose	salts: acetic acid, sodium acetate, sugars: sucrose buffers: tromethamin, tromethamin hydrocholoride	salts: sodium chloride, disodium edetate dihydrate (EDTA), magnesium chloride hexahydrate sugars: sucrose alcohol: ethanol

Abbreviation: ChAd = chimpanzee adenovirus

Patients may seek your guidance before vaccination

Some patients may seek guidance from their health care provider on the benefits and risks of vaccinating based on their situation. For example, patients who are/with:

- pregnant, could be pregnant or is breastfeeding
- immunosuppression due to illness or treatment; or an autoimmune disorder
- bleeding disorder (e.g. hemophilia)
- localized allergic reaction within 4 hours after receiving a COVID-19 vaccine (seek allergist referral prior to re-immunization)

Guidance to support discussions with your patients:

1. NACI Recommendations on the use of COVID-19 vaccines
2. Understanding severe allergic reactions to COVID-19 vaccines
3. Providing informed consent for immunocompromised patients
4. Confirmation form for patients, to assist with informed decision
5. Frequently asked questions for essential workers