

## **COVID-19 Vaccine Q&A For Olympic and Paralympic Teams (March 2021)**

### **Who should get the vaccine?**

In terms of who should get the vaccine the easy answer is that all Canadians should get the vaccine. In respect to the Olympic and Paralympic teams the plan should be for all members of the team to get immunized and should follow the outline as per provincial plans with age, high risk because of occupation (ie medical) or health risks (diabetes, lung disease etc). This will mean that some athletes and staff such as some Paralympians would receive the vaccine earlier than others. At this stage we are anticipating that Canadian team members will be able to be vaccinated with at least 1 dose through the Canadian program prior to the Games.

### **Which vaccine should I get, are they all WADA / ITA compliant?**

At present there are 79 vaccines in clinical development worldwide but 4 vaccines (Pfizer, Moderna, AstraZeneca and Johnson & Johnson) are approved in Canada and the delivery of these is ongoing. Although vaccines are purchased by the federal government, the vaccine distribution and administration is by the provinces and ultimately the local health authorities. This means that timing for specific populations may differ from one region to another depending on the local strategy.

At present there is no data suggesting any of the approved vaccines has any benefit over one or the other and thus no strong case can be made for any specific one. There is also no data to suggest that all team members would need the same vaccine but it is suggested that if you start the course with one vaccine that your second dose should be the same vaccine.

The recommendations on specific vaccines being given to specific populations is ongoing but at present largest group that we may have to deal with is the under 18 age group as there is very limited data available in this group.

At this stage all Vaccines available in Canada are WADA (and thus CCES) compliant.

Vaccines Presently Approved in Canada



## COVID-19 vaccine candidates in phase III or phase IV trials

16 CANDIDATES - VACCINES IN PHASE III CLINICAL EVALUATION	Vaccine platform	WHO EUL	Already in use
Pfizer/BioNTech + Fosun Pharma* ★	RNA based vaccine	X	X
Moderna + National Institute of Allergy and Infectious Diseases (NIAID)* ★	RNA based vaccine		X
CureVac AG ★	RNA based vaccine		
AstraZeneca + University of Oxford* ★	Viral vector (Non-replicating)	X	X
CanSino Biological Inc./Beijing Institute of Biotechnology	Viral vector (Non-replicating)		
Gamaleya Research Institute ; Health Ministry of the Russian Federation ★	Viral vector (Non-replicating)		X
Janssen Pharmaceutical ★	Viral vector (Non-replicating)		X
Sinovac Research and Development Co., Ltd	Inactivated virus		X
Sinopharm + China National Biotec Group Co + Wuhan Institute of Biological Products	Inactivated virus		X
Sinopharm + China National Biotec Group Co + Beijing Institute of Biological Products	Inactivated virus		X
Institute of Medical Biology + Chinese Academy of Medical Sciences	Inactivated virus		
Research Institute for Biological Safety Problems, Rep of Kazakhstan	Inactivated virus		
Bharat Biotech International Limited	Inactivated virus		X
Novavax	Protein subunit		
Anhui Zhifei Longcom Biopharmaceutical + Institute of Microbiology, Chinese Academy of Sciences	Protein subunit		
Zydus Cadila	DNA based vaccine		

### **What if I am overseas, can I get vaccine there?**

Some athletes may be playing professionally or training overseas and are offered one of the vaccines from their club or part of the vaccine process in the country they are in. The above table lists some of the vaccines in use. Please consult with your team physician about vaccine. Another option may be to get the vaccine through the Canadian embassy in the country you are in.

### **What if I cannot complete the full Vaccination Course before the Games?**

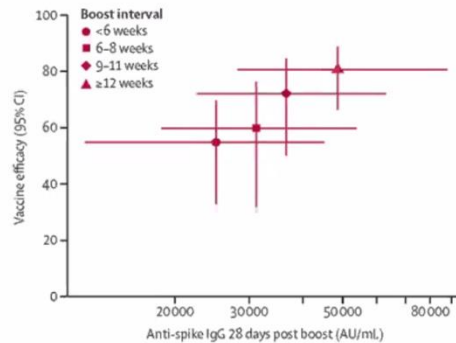
Recent information from WHO out of Israel showed that two doses of the Pfizer vaccine prevented 94% of symptomatic cases, 87% of hospitalizations and 92% of severe disease. The vaccines given now are two dose vaccines with some response starting as soon as 6-8 days after the first dose. After 4 weeks dramatic decreases in hospitalizations fell by 85-95 % in studies in the UK. The second dose shows even higher results in reduction of infections, symptomatic disease and severe disease after 7 days post second dose. Using this information, it would be ideal that the Olympic team be given their second dose at the latest by first of July and the Paralympic team by first of August.

There is emerging data that even after one dose of Vaccine there is approximately 70% protection after 2 weeks. There is also evidence that spacing the vaccine second dose further out (2-4 months) may actually induce better long-term immunity.

## Most COVID-19 vaccines are designed for a two-dose schedule

- Two dose vaccination (prime-boost) works by mimicking natural immunity. The first dose primes immunological memory and the second dose solidifies it
- After a first vaccine dose, the immune system needs time to generate a response and to create memory cells that will recognize the pathogen if it is encountered again
- A larger time interval between the first and second dose may induce a stronger immune response compared to a short interval\*
  - preliminary data from Astra Zeneca's COVID-19 vaccine trials show that a 12-week prime-boost interval may result in improved vaccine efficacy<sup>1,2</sup>

Fig: Larger time interval between doses improves vaccine efficacy



Relationship between neutralizing antibody binding 28 days after second dose, and vaccine efficacy against symptomatic COVID-19 of ChAdOx1 nCoV-19<sup>1</sup> (AstraZeneca COVID-19 vaccine)

1. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)00432-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00432-3/fulltext)
2. [https://www.who.int/publications-detail-redirect/WHO-2019-nCoV-vaccines-SAGE\\_recommendation-AZD1222-2021.1](https://www.who.int/publications-detail-redirect/WHO-2019-nCoV-vaccines-SAGE_recommendation-AZD1222-2021.1)

\*An interval of 21-28 days between the doses is recommended for the mRNA vaccines (Pfizer-BioNTech and Moderna)

### Will we need a vaccine passport?

At this stage a vaccine passport will not be required for entry into Japan and the Games. A number of countries and airlines are discussing the potential for the use of Vaccine Passports but nothing has been made official at this date.

### What does getting the vaccine mean for training, travel and risk?

The vaccines have been proven to reduce the severity of infection and likely the time you may transmit the virus by a rapid immune response but do not prevent you from actually getting infected or potentially transmitting the virus when infected.

It is important to understand that even when vaccinated the standard prevention measures (mask, physical distancing and hygiene, etc.) must still be followed.

### What are the side effects of vaccine?

It should be noted that there is often local tenderness and with the second injection some mild systemic symptoms for 48-72 hours post injection. Most of the side effects are due to the induced immune response. Allergic reactions to some of the Vaccine components have been reported. Even the viral vector vaccines (Astra Zeneca and Johnson & Johnson) may be used in immune-compromised individuals. If possible, earlier vaccination would allow for planning and rest post immunization.