

## Myocarditis and/or Pericarditis following COVID-19 Vaccines

### What do we know about possible heart inflammation after COVID-19 vaccination?

- Rare cases of myocarditis (swelling or inflammation of the heart muscle) and pericarditis (inflammation of the lining around the heart) following COVID-19 vaccination have been reported in Canada and internationally, including in Israel, the United States and Europe.
- Based on cases reported, available information shows:
  - The risk of developing myocarditis and/or pericarditis after a COVID-19 vaccine is rare.
  - Cases happened more frequently following the second dose of an mRNA vaccine (i.e., Pfizer or Moderna).
  - The risk of myocarditis and/or pericarditis associated with Moderna is slightly higher than that with Pfizer but the occurrence of myocarditis and/or pericarditis is rare for both vaccines. Additional analyses are ongoing.
  - Cases were reported more often in adolescents and younger adults under 30 years of age than older individuals, and more often in males than females.
  - Usually, symptoms started within one week after vaccination (4-7 days).
  - Most cases reported to date had mild illness, responded well to medical treatment and rest, and their symptoms improved quickly.

### Cases of myocarditis and/or pericarditis in Canada, including Alberta

- In Canada, as of September 24, 2021, 812 cases of myocarditis and/or pericarditis have been reported out of over 56 million doses of COVID-19 vaccines administered.
- In Alberta, as of September 23, there have been 24 confirmed cases and 2 cases currently under investigation of myocarditis after COVID-19 immunization out of over 6 million doses of vaccine administered. It should be note that over 4 million of these doses have been completed with the Pfizer vaccine.
  - Of the confirmed cases, one case followed a first dose of AstraZeneca, 16 cases followed after doses with Pfizer (2 cases after first dose, 14 cases after second dose) and 7 cases followed doses with Moderna (2 cases after first dose, 5 cases after second dose). 22 of the 24 confirmed cases were males, and 17 of these cases were between the ages of 15 and 29.

### Should Albertans still get COVID-19 vaccine?

- Alberta continues to recommend COVID-19 vaccination for all Albertans 12+, as the benefits of COVID-19 vaccines outweigh the potential risks, including the risk of myocarditis and/or pericarditis.
- Both the Alberta Advisory Committee on Immunization and Canada's National Advisory Committee on Immunization have reviewed all available evidence and concluded that mRNA vaccines should continue to be offered to all eligible individuals.
- The risk of cardiac complications, including myocarditis, has been shown to be substantially increased following COVID-19 infection, and it is higher following infection than after vaccination.
- On September 29, out of an abundance of caution, Ontario issued a preferential recommendation of the use of Pfizer-BioNTech vaccine for individuals aged 18-24 years old on the current available analysis from Ontario's AEFI surveillance system.
- Current data from Alberta's AEFI surveillance system does not support the need for a similar shift, and at this time younger Albertans can get either the Pfizer vaccine or the Moderna vaccine with informed

consent. Those receiving a Moderna vaccine should be informed of the potentially higher but still rare risk of myocarditis and pericarditis with the Moderna COVID-19 vaccine.

- Vaccine experts in Israel, the US and Europe also indicate, based on evidence they have reviewed, that the benefits of COVID-19 vaccines continue to outweigh their risks and the risks of myocarditis and/or pericarditis are minor compared to those of COVID-19 disease.
- Getting vaccinated is the best way to help protect yourself and your family from COVID-19.
- Alberta is closely monitoring this issue. More information will be shared as it becomes available.

### **Symptoms of Myocarditis and/or Pericarditis to watch for after COVID-19 Vaccination**

- Watch for the following symptoms: chest pain, shortness of breath, feelings of having a fast-beating, fluttering or pounding heart.
- Seek medical care if you have any of these symptoms within a week after COVID-19 vaccination. Tell the healthcare provider about your recent COVID-19 vaccination.
- Myocarditis and/or pericarditis are not uncommon conditions and there are many potential causes such as a viral infection, including the virus that causes COVID-19.

### **Is a person with a history of previous myocarditis, pericarditis or other heart problems at a higher risk of myocarditis and/or pericarditis following COVID-19 vaccine?**

- It is not yet known if people with a history of previous myocarditis, pericarditis or other heart problems are at higher risk of vaccine associated myocarditis and/or pericarditis. Investigation into this continues in Canada and internationally.
- Generally, delaying or declining COVID-19 immunization is unnecessary for those with a prior history of myocarditis and/or pericarditis that is unrelated to a COVID-19 vaccine. People with a history of previous myocarditis, pericarditis or other heart problems can discuss decisions about COVID-19 vaccination with their healthcare provider.

### **If a person experiences myocarditis and/or pericarditis after a first dose of an mRNA vaccine, what should they do about the second dose?**

- It is still unclear if these people may be at increased risk of heart related reactions after a second dose of the vaccine. Investigation into this continues in Canada and internationally.
- A person who had myocarditis and/or pericarditis after a first dose of an mRNA COVID-19 vaccine should discuss decisions around the second dose, including timing, with their healthcare provider.
- As a precaution, it is recommended that most individuals who experienced myocarditis and/or pericarditis after a first dose of an mRNA vaccine should wait to get their second dose until more information is available. However, for some individuals with specific health issues, it may be better not to wait to get the second dose. That is why it is important to talk to your healthcare provider to see what is best for you.

### **Should myocarditis and/or pericarditis after COVID-19 vaccination be reported?**

- Yes. If you experience a serious or unusual health problems following vaccination you need to call Health Link at 811 to report it or contact your healthcare provider.
- In Alberta, healthcare providers who become aware of an adverse event following any immunization (AEFI) must report it to the health system.
- Reports of AEFIs, and the safety of all vaccines, including COVID-19 vaccines are closely monitored in Canada. If safety issues arise, response happens quickly and the public is informed of any potential risks.
- Reported side effects following COVID-19 vaccination in Alberta are listed [here](#).

## Where to get more information on the rare possibility of myocarditis and/or pericarditis following COVID-19 vaccination

- National Advisory Committee on Immunization (NACI)  
<https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci/recommendations-use-covid-19-vaccines.html>
- Health Canada also publishes information and counts of all Adverse Events Following Immunizations (AEFI) at <https://health-infobase.canada.ca/covid-19/vaccine-safety/#a1>
- USA: Centres for Disease Control and Prevention:  
<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/myocarditis.html>

For more information about Alberta's COVID-19 immunization program or to book a vaccine appointment, go to [www.Alberta.ca/vaccine](http://www.Alberta.ca/vaccine).