



**Canadian  
Cardiovascular  
Society**

**MYCOVACC**

The CCS National Active Surveillance Study of Myocarditis and/or Pericarditis following mRNA COVID-19 Vaccination (MYCOVACC) is a multi-centre, pan-Canadian study funded by the Public Health Agency of Canada.

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## **\$1.4M awarded to MYCOVACC to continue national study of COVID-19 and mRNA vaccines**

New funding from the Public Health Agency of Canada will enable top Canadian cardiology researchers and clinicians to continue this multi-year study on the impact of COVID-19 and mRNA vaccines. MYCOVACC will receive an additional \$1.4 million in funding for its third year, bringing the total investment to \$5 million. [Read the news release.](#)

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## **Read: Myocarditis and Pericarditis following mRNA COVID-19 Vaccination: 2024 Status and Management Update**

McDonald, M.A., Kafil, T.S, Khoury, M., Luk, A.C., Wright, M.K, & Hawkins, N. M. (2024). Myocarditis and pericarditis following mRNA COVID-19 vaccination: 2024 Status and Management Update. Canadian Journal of Cardiology. <https://doi.org/10.1016/j.cjca.2024.03.016>

This brief review summarizes new evidence about the epidemiology and outcomes of patients with mRNA COVID-19 post-vaccine myocarditis and pericarditis. It also provides consensus guidance for evaluation, management, and follow-up. Finally, persistent knowledge gaps are identified that inform the MYCOVACC study and areas for future research.

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## **New Patient and Healthcare Provider Resources**

The CCS updated its post-vaccine myocarditis and pericarditis resources in collaboration with the Centre for Evidence-Based Implementation at McMaster University. The [2024 Status and Management Update](#) in the Canadian Journal of Cardiology is the basis for these resources, which are available in English and French.

**Myocarditis and Pericarditis after mRNA COVID-19 Vaccination: Management Algorithm for Health Care Providers**

**Epidemiology**

- There are rare events reporting risk of myocarditis in 1.2/100,000 mRNA COVID-19 vaccine doses in Canada but overall risk is low compared to the risk of severe COVID-19 infection.
- The risk of COVID-19 associated myocarditis is 100 times greater than the risk of post-vaccine myocarditis. The benefit outweighs the risk when considering the risk of severe COVID-19 infection.
- Advise patients to report any chest pain or shortness of breath after mRNA COVID-19 vaccine.
- Post-vaccine myocarditis is more common after the second mRNA COVID-19 vaccine dose than the first.
- The incidence of post-vaccine myocarditis and pericarditis following vaccine doses is expected.

**Patient with clinically suspected myocarditis/pericarditis presents to primary care or ED**

**Consult specialist care (i.e., cardiology or internal medicine, as available)**

**Examine & manage based on risk profile**

Risk Profile	Low Risk (Lowest Risk)	Medium Risk	High Risk (Highest Risk)
<b>Age</b>	< 30 years	30-40 years	> 40 years
<b>Sex</b>	Female	Male	Male
<b>Medical History</b>	No significant medical history	Significant medical history	Significant medical history
<b>Family History</b>	No family history of cardiac disease	Family history of cardiac disease	Family history of cardiac disease
<b>ECG</b>	Normal ECG	ECG suggestive of myocarditis/pericarditis	ECG suggestive of myocarditis/pericarditis
<b>Imaging</b>	Normal echocardiogram	Echocardiogram suggestive of myocarditis/pericarditis	Echocardiogram suggestive of myocarditis/pericarditis
<b>Diagnosis</b>	Low risk	Medium risk	High risk
<b>Management</b>	Observation	Observation with follow-up	Observation with follow-up

**Follow-up with specialist & complete AHA reporting (all risk profiles)**

Management Algorithm for Health Care Providers

**INFORMATION FOR PATIENTS: Myocarditis and Pericarditis after mRNA COVID-19 Vaccination**

**About Post-Vaccine Myocarditis & Pericarditis**

- Myocarditis is inflammation of the heart muscle.
- Pericarditis is inflammation of the outer lining of the heart.
- There are many different causes of myocarditis and pericarditis including COVID-19 infection.
- In rare instances, myocarditis and pericarditis may occur after mRNA COVID-19 vaccination, mainly in adolescent males and young men.
- The risk of post-vaccine myocarditis is much lower than the risk of myocarditis due to COVID-19 and the symptoms are usually less severe.
- Most people with post-vaccine myocarditis or pericarditis respond well to treatment and feel better quickly.

**Common Symptoms: When & Where to Seek Care**

**Go to an Emergency Department immediately if you experience any of the following symptoms:**

- Chest pain
- Shortness of breath or difficulty breathing
- Irregular heartbeat
- Unconsciousness/fainting
- New and unexplained swelling in parts of your body (especially legs)

**Treatment & Follow-up Care**

- Medications and care plans depend on your symptoms and test results.
- You may require observation and treatment in hospital or follow a treatment plan at home.
- If myocarditis and/or pericarditis is suspected, you should have follow-up appointments with a specialist (cardiologist or internist) as soon as possible.

**Diagnostic Testing**

These tests may be done to help doctors determine a diagnosis and plan next steps for your care:

- Nasal swab
- Blood test
- Chest X-ray
- Echocardiogram
- Electrocardiogram
- Cardiac magnetic resonance imaging
- Holder monitor
- Other relevant testing

**Recommendations**

- Normally you should limit exercise for at least 3 to 6 months.
- Avoid receiving another mRNA COVID-19 vaccine until more information is available.
- Speak to your family doctor (or visit a walk-in clinic) if you are worried about new or ongoing symptoms and are no longer seeing a specialist.

Information for Patients

## Watch: Myocarditis and Pericarditis after mRNA COVID-19 Vaccination: Status and Management Update (2024)

**RECORDING**

**MYOCARDITIS AND PERICARDITIS AFTER mRNA COVID-19 VACCINATION: Status and Management Update**

**Register to Watch**

Program Chair: Anil Gupta MD  
 Daisy de la Cruz Davalos MD  
 Nat Hawkins MD, MSc, MCh  
 Tahir Kafil MD  
 Alexander Singer MD  
 Tonja Stothart MD

This CCS continuing professional development webinar provides an update on post-vaccine myocarditis and pericarditis from public health, cardiology, and family medicine perspectives. Dr. Anil Gupta chairs the session. The panelists are Dr. Tonja Stothart, Dr. Daisy De la Cruz Davalos, Dr. Nat Hawkins, Dr. Tahir Kafil, and Dr. Alexander Singer.

## Visit: Updated MYCOVACC Webpage

New resources described in this newsletter are available on the updated MYCOVACC webpage. Visit the updated webpage [here](#).

## Site Recruitment Update

MYCOVACC has recruited more than 30 study sites across Canada with the assistance of key research partner networks.

The CCS continues to actively recruit cardiac care centres, cardiology clinics and cardiologists from across Canada to contribute to the study. [Learn more.](#)

## Related Research

Shenton, P., Schrader, S., Smith, J., Alafaci, A., Cox, N., Taylor, A., Hare, J., Jones, B., Crawford, N. W., Buttery, J. P., Cheng, D. R., & SAEFVIC VicSIS investigators (2024). Long term follow up and outcomes of Covid-19 vaccine associated myocarditis in Victoria, Australia: A clinical surveillance study. *Vaccine*, 42(3), 522-528.  
<https://doi.org/10.1016/j.vaccine.2023.12.070>

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