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**Health Advisory: Myocarditis and Pericarditis after Receipt of mRNA COVID-19 Vaccines
Among Adolescents and Young Adults
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- CDC is investigating recent reports of myocarditis and pericarditis in young adults and adolescents shortly after receipt of mRNA COVID-19 vaccines.
- COVID-19 immunization is still recommended for persons 12 years of age and older.
- All cases of myocarditis following receipt of COVID-19 vaccine, as well as other adverse events following vaccination, should be reported promptly to the [CDC/FDA Vaccine Adverse Event Reporting System \(VAERS\)](#).

CDC has posted the following [Clinical Considerations: Myocarditis and Pericarditis after Receipt of mRNA COVID-19 Vaccines Among Adolescents and Young Adults](#)

Since April 2021, cases of myocarditis and pericarditis have been reported in the United States after mRNA COVID-19 vaccination (Pfizer-BioNTech and Moderna), particularly in adolescents and young adults. There has not been a similar reporting pattern observed after receipt of the Johnson & Johnson COVID-19 vaccine.

In most cases, patients who presented for medical care have responded well to medications and rest and had prompt improvement of symptoms. Reported cases have occurred predominantly in male adolescents and young adults 16 years of age and older. Onset was typically within several days after mRNA COVID-19 vaccination, and cases have occurred more often after the second dose than the first dose. CDC and its partners are investigating these reports of myocarditis and pericarditis following COVID-19 mRNA vaccination.

CDC continues to recommend [COVID-19 vaccination](#) for everyone 12 years and older given the risk of COVID-19 illness and related, possibly severe complications, such as long-term health problems, hospitalization, and even death.

Background

Myocarditis is inflammation of the heart muscle, and pericarditis is inflammation of the lining outside the heart. In both cases, the body's immune system is causing inflammation in response to an infection or some other trigger. Symptoms can include chest pain, shortness of breath, or palpitations.

The severity of cases of myocarditis and pericarditis can vary. For the cases reported after mRNA COVID-19 vaccination, most who presented to medical care have responded well to medications and rest.



The Advisory Committee on Immunization Practices (ACIP) COVID-19 Vaccine Safety Technical (VaST) Work Group reviews post-authorization COVID-19 vaccine safety data on a weekly basis and posts its [updates](#) periodically.

Recommendations for Clinicians

CDC continues to recommend [COVID-19 vaccination](#) for everyone 12 years and older given the greater risk of other serious complications related to COVID-19, such as hospitalization, multisystem inflammatory syndrome in children (MIS-C), or death.

[Report all cases of myocarditis and pericarditis post COVID-19 vaccination to VAERS.](#)

Consider myocarditis and pericarditis in adolescents or young adults with acute chest pain, shortness of breath, or palpitations. In this younger population, coronary ischemic events are less likely to be a source of these symptoms.

Ask about prior COVID-19 vaccination if you identify these symptoms, as well as relevant other medical, travel, and social history.

For initial evaluation, consider an ECG, troponin level, and inflammatory markers such as C-reactive protein and erythrocyte sedimentation rate. In the setting of normal ECG, troponin, and inflammatory markers, myocarditis or pericarditis are unlikely.

For suspected cases, consider consultation with cardiology for assistance with cardiac evaluation and management. Evaluation and management may vary depending on the patient age, clinical presentation, potential causes, or practice preference of the provider.

For follow-up of patients with myocarditis, consult the recommendations from the [American Heart Association and the American College of Cardiology](#).

It is important to rule out other potential causes of myocarditis and pericarditis. Consider consultation with infectious disease and/or rheumatology to assist in this evaluation.

Where available, evaluate for potential etiologies of myocarditis and pericarditis, particularly acute COVID-19 infection (e.g., PCR testing), prior SARS-CoV-2 infection (e.g., detection of SARS-CoV-2 nucleocapsid antibodies), and other viral etiologies (e.g., enterovirus PCR and comprehensive respiratory viral pathogen testing).

For more information

CDC: For the public: [Myocarditis and Pericarditis Following mRNA COVID-19 Vaccination](#)

NIH: Materials on [myocarditis and pericarditis](#)

HHS: [VAERS – FAQs](#) about COVID-19 vaccines

HHS: How to report to [VAERS](#)

CDC: [Interim Clinical Considerations for Use of COVID-19 Vaccines](#)