

Table 2. Cardiopulmonary Evaluation in Athletes with Prior COVID-19 Infection¹

Clinical Scenario	Recommended Assessment	Comments
Athletes with prior asymptomatic infection as confirmed antibody to SARS-Coronavirus-2	<p>Focused Medical History and Physical Examination to screen for findings newly emergent in the COVID-19 era.</p> <p>Consider 12-lead ECG²</p>	<ul style="list-style-type: none"> · Myopericarditis related to COVID-19 should be considered in patients with a history of new onset chest pain, pressure, or both (even in the absence of fever and respiratory symptoms), palpitations, or exercise intolerance. · Comprehensive clinical evaluation, regardless of ECG findings, is indicated in athletes with new onset cardiovascular symptoms or exercise intolerance. · If ECG is abnormal or shows new repolarization changes compared to a prior ECG, then additional evaluation with at minimum an echocardiogram and exercise test is warranted in conjunction with a sports cardiologist.
Athletes with a history of mild illness (non-hospitalized) related to confirmed or suspected COVID-19	<p>Focused Medical History and Physical Examination to screen for persistent or new post-infectious findings following COVID-19 infection.</p> <p>Perform 12-lead ECG²</p>	<ul style="list-style-type: none"> · ECG findings that may indicate viral-induced myocardial injury include pathological Q waves, ST segment depression, (new) diffuse ST segment elevation, and T-wave inversion. · Comprehensive clinical evaluation, regardless of ECG findings, is indicated in athletes with new onset cardiovascular symptoms or exercise intolerance. · If ECG is abnormal or shows new repolarization changes compared to a prior ECG, then additional individualized evaluation is warranted, including at minimum echocardiography and exercise testing, in conjunction with a cardiologist.

Athletes with a **history of moderate to severe illness (hospitalized)** related to confirmed or suspected COVID-19

Comprehensive evaluation prior to return to sport, in conjunction with a cardiologist, to include blood biomarker assessment (i.e. Tn, NP), 12-lead ECG, echocardiography, exercise testing, and ambulatory rhythm monitoring. Additional recommendations include chest radiograph, spirometry, pulmonary function testing, chest CT.

- **Myocardial injury is more likely in patients with a more severe disease** course, and normal cardiac function and exercise tolerance should be established prior to a return to exercise.
- Cardiac MRI may be considered based on clinical suspicion of myocardial injury.³

Athletes with a **history of COVID-19 infection (regardless of severity) AND documented myocardial injury** as indicated by one or more of the following: in-hospital ECG changes, HS-Tn or NP elevation, arrhythmia, or impaired cardiac function.

Comprehensive evaluation prior to return to sport, in conjunction with a sports cardiologist, to include blood biomarker assessment (i.e. Tn, NP), 12-lead ECG, echocardiography, exercise testing, ambulatory rhythm monitoring, and cardiac MRI.²

- Return to training should be gradual and under the supervision of a cardiologist.
- Longitudinal follow-up including serial cardiac imaging may be required in athletes with initially abnormal cardiac function.

Tn = cardiac troponin, NP = natriuretic peptide; ECG = electrocardiogram; MRI = magnetic resonance imaging

¹Table modified from Drezner, et al.²⁶

²ECG as a screening test to exclude myocarditis is limited. ECG in patients with myocarditis may be normal or show nonspecific abnormalities. Additional evaluation may be warranted based on clinical suspicion.

³Cardiac MRI should be performed with gadolinium to assess for myocardial scar and late gadolinium enhancement (LGE). The presence of LGE is associated with a higher risk of major adverse cardiovascular events.