



# Cardiac Screening for Pediatric Athlete with Suspected or Confirmed COVID-19 Infection

## Athletes and COVID-19 Care Assessment:

### ATHLETES UNDER 12 YEARS OF AGE

#### Asymptomatic/Mild Symptoms

(No fever and/or less than 3-5 days of symptoms)

- No exercise for 14 days from symptom onset or positive test; under parental/clinical observation
- Consider medical evaluation for any concerns prior to return to activity; if concerns obtain an ECG
- Gradual return to play while observing for cardiac symptoms\*

#### Moderate Symptoms

(Fever, and/or more than 5 days of symptoms, requiring bed rest)

- No exercise or sport until evaluated by physician
- Gradual return to play to observe for cardiac symptoms\*
- Consider ECG with any cardiac symptoms\*, physical exam findings OR if participates in sports more than two (2) days per week

#### Severe Symptoms

(Hospitalization, MIS-C, ongoing symptoms for more than 14 days)

- Evaluate by pediatric Cardiology prior to return to exercise, competition or sports participation
- Consider ECG, Echo, +/- Cardiac MRI
- Consider Holter Monitor/Exercise stress test
  - » If abnormal†, follow return to sport guidelines for myocarditis/pericarditis or abnormality present on work up
  - » If normal, gradual return to play while observing for cardiac symptoms\*

**Our knowledge of COVID-19 infections is rapidly changing and the effects in the pediatric population are largely unknown.**

In the adult population, COVID-19 infections appear to affect the heart at a higher rate than other viruses, while in the pediatric population, the virus can cause multi-system inflammatory syndrome (MIS-C) involving the heart.

Due to the lack of evidence for cardiac injury from COVID-19 infections in the pediatric population and the low number of pediatric cases, recommendations are made from expert opinion from the sports medicine, infectious disease and cardiology departments and are subject to change.

The process in the right column is intended for COVID-19 positive patients and those who have presumed positive infections. Growing athletes must be asymptomatic (no fever equal to or higher than 100.4 degrees for 24 hours without fever-reducing medications, resolution of symptoms such as cough, shortness of breath, sore throat, etc.); AND be at least 10 days since the initial onset of their symptoms; OR have been asymptomatic throughout the entire 14 days of quarantine.

*This article has been clinically reviewed by Brian Harvey, DO, Sports Medicine Physician; Dan Forsha, MD, MHS, Cardiology Physician; Amol Purandare, MD, Infectious Diseases Physician; Natalie Stork, MD, Sports Medicine Physician and Lindsey Malloy Walton, DO, MPH, Cardiology Physician.*

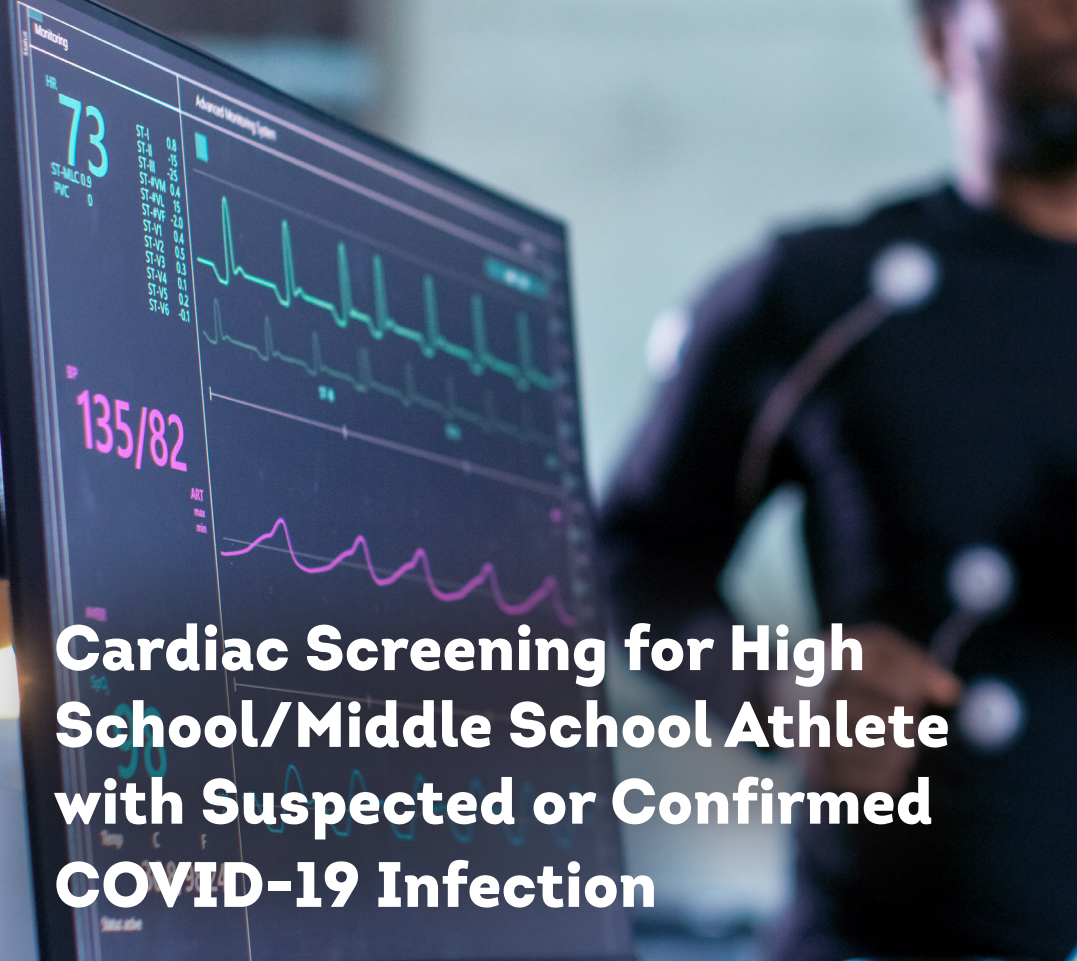
**References:** Drezner et al. Cardiopulmonary Considerations for High School –Athletes During the COVID-19 Pandemic: NFHS-AMSSM Guidance Statement. Sports Health. DOI: 10.1177/1941738120941490 Dean, Peter et al. Return to Play After Coronavirus Infection: Pediatric Cardiologists’ Perspective. American College of Cardiology July 14, 2020. Dores H, Cardim N. Return to play after COVID-19: a sport cardiologist’s view British Journal of Sports Medicine Published Online First: 07 May 2020. doi: 10.1136/bjsports-2020-102482. Phelan D, Kim JH, Chung EH. A Game Plan for the Resumption of Sport and Exercise After Coronavirus Disease 2019 (COVID-19) Infection. JAMA Cardiol. Published online May 13, 2020. doi:10.1001/jamacardio.2020.2136

\* Cardiac symptoms include: shortness of breath, shortness of breath with activity, chest pain, palpitations, fatigue, decreased exercise performance or tolerance

† ECG Changes include: Diffuse ST elevation, ST depression, T wave inversion, pathologic Q waves and PR depression







# Cardiac Screening for High School/Middle School Athlete with Suspected or Confirmed COVID-19 Infection

**Our knowledge of COVID-19 infections is rapidly changing and the effects in the pediatric population are largely unknown.**

In the adult population, COVID-19 infections appear to affect the heart at a higher rate than other viruses, while in the pediatric population, the virus can cause multi-system inflammatory syndrome (MIS-C) involving the heart.

Due to the lack of evidence for cardiac injury from COVID-19 infections in the pediatric population and the low number of pediatric cases, recommendations are made from expert opinion from the sports medicine, infectious disease and cardiology departments and are subject to change.

The process in the right column is intended for COVID-19 positive patients and those who have presumed positive infections. Growing athletes must be asymptomatic (*no fever equal to or higher than 100.4 degrees for 24 hours without fever-reducing medications, resolution of symptoms such as cough, shortness of breath, sore throat, etc.*); AND be at least 10 days since the initial onset of their symptoms; OR have been asymptomatic throughout the entire 14 days of quarantine.

*This article has been clinically reviewed by Brian Harvey, DO, Sports Medicine Physician; Dan Forsha, MD, MHS, Cardiology Physician; Amol Purandare, MD, Infectious Diseases Physician; Natalie Stork, MD, Sports Medicine Physician and Lindsey Malloy Walton, DO, MPH, Cardiology Physician.*

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## Athletes and COVID-19 Care Assessment:

### ATHLETES OVER 12 YEARS OF AGE

#### Asymptomatic

*(Zero symptoms)*

- Cleared to do light exercise, while monitoring for cardiac signs and symptoms during the quarantine period under parental/clinical observation for cardiac symptoms\*
- Consider ECG with any cardiac symptoms\* or physical exam finding.
- Gradual return to play, while observing for cardiac symptoms\*

#### Mild Symptoms

*(Less than 3-5 days of symptoms and/or no fever)*

- Evaluate by physician prior to return to exercise, practice or sport participation
- Gradual return to play while observing for cardiac symptoms\*
- Consider ECG IF:
  1. High School aged athlete OR
  2. Clinical concerns of cardiac symptoms\*
    - » If normal: Gradual return to play while observing for cardiac symptoms\*
    - » If abnormal†: Refer to pediatric cardiology

#### Moderate Symptoms

*(Fever and/or more than 5 days of symptoms; requiring bed rest)*

- Evaluate by physician prior to the return to exercise, practice or sport participation
- ECG
  - » If normal: Gradual return to play, to observe for cardiac symptoms\*
  - » If abnormal†: Refer to pediatric cardiology

#### Severe Symptoms

*(Hospitalization, MIS-C, ongoing symptoms for more than 14 days, any initiation of anti-platelet medication such as Aspirin or Plavix)*

- Evaluate by pediatric Cardiology
- ECG, Echo, +/- Cardiac MRI
  - » If abnormal†: Follow return to sport guidelines for myocarditis/pericarditis or abnormality present on work up.
  - » Consider exercise stress test, Holter monitor prior to return to sport.
  - » If normal: Gradual return to play to observe for cardiac symptoms and clearance by pediatric cardiology recommended.
- Confirmed cases of myocarditis, pericarditis or any other cardiopulmonary condition should be managed and return to sport with medical guidance and clearance.

\* Cardiac symptoms include: shortness of breath, shortness of breath with activity, chest pain, palpitations, fatigue, decreased exercise performance or tolerance

† ECG Changes include: Diffuse ST elevation, ST depression, T wave inversion, pathologic Q waves and PR depression