



## Introduction

The Safe Sports Network provides the following return to sport/physical activity guidance for pediatric patients without significant cardiac disease who have contracted COVID-19.

Although COVID-19 typically affects pediatric patients less severely than adults, some children may experience additional systemic complications following infection, such as myocarditis. Myocarditis preceded by a viral infection is one of the leading causes of sudden cardiac death in sport<sup>1</sup>. Although data on which to base the return to exercise guidance is limited, several organizations have published recommendations. The following Safe Sports Network return to play guidelines are consistent with guidance published from the American College of Cardiology, American Academy of Pediatrics, the National Federation of State High School Associations, the American Medical Society for Sports Medicine, guidelines for Graduated Return to Play as set forth in the British Journal of Sports medicine, and through consultation with the Safe Sports Network Medical Director and team. It is important to note these guidelines are based on expert opinion and should not supersede best individual clinician judgment.

## Guidelines

- Patients who have tested positive for COVID-19 shall remain in isolation for the minimum required time identified by the State Health Department and School District, and follow all instructions given to them by the State Health Department and School District.
- All patients who test positive for COVID-19 should not exercise while in isolation<sup>2</sup>.
- Following COVID-19 infection, asymptomatic and mildly symptomatic patients should complete a health screening to determine readiness for physical activity administered by a Safe Sports Network athletic trainer or their primary care provider prior to returning to physical activity<sup>3-6</sup>.
  - Patients who complete the screening with their primary care provider must provide written documentation of the health screening to the Safe Sports Network Athletic Trainer prior to beginning the graduated return to play (GRtP).
- Moderately and severely symptomatic patients will be referred to their primary care provider for evaluation and clearance to begin a (GRtP).
- The GRtP can be started following the required isolation period, if the patient has been afebrile for at least 24 hours<sup>3-5</sup> and successfully completed the health screening to determine readiness for physical activity without endorsing any red flags.
  - The GRtP will take a minimum of two days of non-competition activity to complete for asymptomatic and mildly symptomatic patients as defined by the American Academy of Pediatrics<sup>2</sup>.
  - Moderately symptomatic patients as defined by the American Academy of Pediatrics may require an extended return to sport/activity progression<sup>2</sup>.
  - Patients may complete a maximum of one phase per day and progress to the next phase if no development of symptoms (e.g., excessive fatigue, dyspnea, chest pain/tightness, palpitations, etc.)<sup>6</sup>.
  - The supervising clinician (e.g., SSN AT) should monitor for the development of chest

pain/tightness, palpitations, lightheadedness, significant exertional dyspnea, pre-syncope, or syncope during each phase<sup>4</sup>.

- Patients with persistent symptoms or development of new symptoms should be referred to undergo further evaluation.
- Continue to monitor pediatric patients for signs or symptoms of systemic complications even after full return to play<sup>3,5</sup>. Signs and symptoms may include<sup>8</sup>:
  - Persistent fever
  - Abdominal pain
  - Vomiting or diarrhea
  - Skin rash
  - Hypotension or shock

### **Graduated Return to Play (GRtP) Progression**

- Phase 1:
  - **1 Day of Sport Specific Training**
    - 60 Mins (<80% Max HR, ~160 bpm).
    - Sport specific training.
    - Goal: Restore confidence and assess functional skills
- Phase 2:
  - **1 Day – Full activity in non-competitive setting (i.e., practice).**
- Phase 3:
  - **Full, unrestricted participation.**

## References

1. Maron BJ, Doerer JJ, Haas TS, Tierney DM, Mueller FO. Sudden Deaths in Young Competitive Athletes: Analysis of 1866 Deaths in the United States, 1980–2006. *Circulation*. 2009;119(8):1085-1092. doi:10.1161/CIRCULATIONAHA.108.804617
2. American Academy of Pediatrics. COVID-19 Interim Guidance: Return to Sports. Last updated Jan 27, 2022. <https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-interim-guidance-return-to-sports/>
3. Kim JH, Levine BD, Phelan D, et al. Coronavirus Disease 2019 and the Athletic Heart: Emerging Perspectives on Pathology, Risks, and Return to Play. *JAMA Cardiol*. Published online October 26, 2020. doi:10.1001/jamacardio.2020.5890
4. 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*. 2020;5(10):1085. doi:10.1001/jamacardio.2020.2136
5. Drezner JA, Heinz WM, Asif IM, et al. Cardiopulmonary Considerations for High School Student- Athletes During the COVID-19 Pandemic: NFHS-AMSSM Guidance Statement. Update January 2022.
6. Elliott N, Martin R, Heron N, Elliott J, Grimstead D, Biswas A. Infographic. Graduated return to play guidance following COVID-19 infection. *Br J Sports Med*. 2020;54(19):1174-1175. doi:10.1136/bjsports-2020-102637
7. CDC. Communities, Schools, Workplaces, & Events. Centers for Disease Control and Prevention. Last updated Aug 24, 2021.
8. CDC. Multisystem Inflammatory Syndrome in Children (MIS-C). Centers for Disease Control and Prevention. Last reviewed September 20, 2021.
9. Children’s Hospital at Dartmouth-Hitchcock (CHaD). Return to Exercise Guidance After COVID-19 Infection. Last updated January 2022.
10. Drezner, J. A., Heinz, W. M., Asif, I. M., Batten, C. G., Fields, K. B., Raukar, N. P., ... Baggish, A.(2021, August). Cardiopulmonary Considerations for High School Student-Athletes During the COVID-19 Pandemic: Update to the NFHS-AMSSM Guidance Statement. Retrieved from <https://www.nfhs.org/media/4860120/updated-2021-nfhs-amssm-guidance-statement-on-cardiac-considerations-with-covid-19-final-8-17-21.pdf>
11. Gagel AC, et. al. “COVID-19, Myocarditis, and Cardiac MRI in Athletes: Distinguishing Signal from Noise.” American College of Cardiology, September 28, 2021. <https://www.acc.org/latest-incardiology/articles/2021/09/28/18/07/covid-19-myocarditis-and-cardiac-mri-in-athletes>