Recommendations for Primary Care Providers Regarding Post-COVID-19 Return-to-Play (RTP) for Pediatric Athletes & Patients

Background:
- This document was prepared as a practical reference for primary care providers by a consortium from University of Michigan faculty at C.S. Mott Children’s Hospital and Central Michigan University faculty at Children’s Hospital of Michigan.
- Recommendations for return-to-play (RTP) for young athletes are evolving based on observation of RTP in COVID-19 positive athletes. These recommendations are based on current expert opinion of leading sports cardiologists and are subject to change as more data become available.
- An athlete is considered here as one participating in organized sports at any level. However, these recommendations can also be applied to patients participating in regular high-intensity activities.
- Most young athletes experience asymptomatic or only mildly-symptomatic COVID-19 infections.
- The protocol for return-to- activities will vary based on severity of infection, time from exercise/activities, pre-COVID-19 level of activity and whether there is a pre-existing medical condition.
- Similar to RTP after concussion or mono, amount, type and intensity of activity should be gradually increased. In regards to COVID-19, this gradual RTP should be over at least 7 days and ideally be under direct supervision, if able. One can consider this like an orthopedic injury: Rest, recover and gradual RTP.
- Given possible restrictions to in-person office visits, it is reasonable to consider a virtual visit. Follow up visits should focus on assessing the severity of COVID-19 infection, confirming cessation of symptoms, and screening for cardiovascular symptoms. Additionally, gradual RTP guidance should be covered as well as anticipatory guidance with specific focus on red flag/cardiovascular symptoms (see Red Flag section below).

Isolation recommendations:
1. **Isolation**: Isolation is 10-days from positive-test date. (Considered from test date, as some athletes may adjust start date of symptoms to return to play sooner.) During isolation those with COVID-19 should not participate in exercise.
2. **After Isolation**: Similar to recommendations for other viral infections, RTP should be gradual. Current guidance for RTP clearance after COVID-19 includes following the CDC recommendations for isolation followed by gradual return-to-exercise based on recommendations below.

NOTE: The CDC defines isolation as separating someone who has been infected away from others and quarantine as separating a potentially exposed person away from others to see if they become sick (referenced here).

Definition of COVID-19 infection severity:
- **Asymptomatic illness**: Positive COVID-19 test with no symptoms.
- **Mild COVID-19 illness**: Symptoms can include fever (oral $\geq 100.4$F) for 3 days or less, fatigue, loss of smell/taste, nausea, vomiting, diarrhea, headache, cough, congestion, sore throat.
- **Moderate COVID-19 illness**: Symptoms can include persistent fever (oral $\geq 100.4$F) for more than 3 days, chills, body aches, loss of smell/taste, significant lethargy/fatigue, cough, hypoxia, pneumonia, shortness of breath, chest pain, chest tightness.
- **Severe COVID-19 illness**: Those who required hospitalization, or had abnormal cardiac testing during the acute infection, or had multisystem inflammatory syndrome in children (MIS-C).

Specific recommendations based on severity of COVID-19 infection:
1. For asymptomatic or mild cases of all ages
   a. Isolation for 10 days from positive-test date.
b. For mild cases, recommend contacting PCP to determine need for follow up. Consider virtual visit, if needed.
c. For both asymptomatic and mild cases review anticipatory guidance regarding red flag signs and symptoms.
d. During RTP after isolation, monitor for possible cardiac and lung-related symptoms.

2. For moderate cases 12 years and younger
   a. Isolation for 10 days from positive-test date.
   b. Must be at least 10 days asymptomatic before starting RTP. (The symptom of loss of smell and/or taste may take longer to resolve and should not preclude RTP).
   c. Follow up assessment with PCP should be done prior to starting RTP. Consider virtual visit, at which time can further triage if in-person visit is needed.
   d. Review anticipatory guidance regarding red flag signs and symptoms.
   e. During RTP after isolation, monitor for possible cardiac and lung-related symptoms.

3. For moderate cases 13-18 years
   a. Same as moderate cases 12 years and younger with the addition of:
   b. Consider referral to pediatric cardiology prior to RTP, depending on type of sport, level of competition, and degree of COVID-19 symptoms.

4. For severe cases or MIS-C cases of all ages
   a. ALL patients should be evaluated by pediatric cardiology prior to starting gradual RTP.

Red flag symptoms and physical exam findings:
1. Concerning symptoms may be during infection, during resolution or after infection.
2. Recommend reviewing red flags as anticipatory guidance upon diagnosis of COVID-19 and at follow-up prior to starting RTP.
3. Development of any of these symptoms should result in stopping activities, discussion with PCP and possible referral to a pediatric cardiologist.
4. Red Flag symptoms include:
   a. Chest pain
      i. concerning features for cardiac involvement include pain that gets worse with supine position or is associated with exertion, palpitations, shortness of breath, or syncope/dizziness.
      ii. reassuring features (suggesting non-cardiac chest pain) include pre-existing or longstanding pain, pain reproducible by palpation, pain located exclusively in axillae, and soreness related to coughing.
   b. Dyspnea
   c. Palpitations
   d. Syncope/Dizziness
   e. Edema
   f. Persistent or recurrent fever, vomiting or diarrhea
   g. Significant ongoing fatigue
   h. Features of MIS-C in the 4-6 weeks post COVID-19 infection
5. Physical exam findings include new-onset murmur, tachycardia, tachypnea, pericardial rub, crackles, hepatomegaly, edema.
References:

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Recommendations based on expert opinions, dated Dec. 15, 2020*. Also see our:
- Return-to-Play (RTP) for Pediatric Athletes & Patients – ALGORITHM
- Suggested Post-Covid-19 Gradual Return-to-Play Progression
*Recommendations are subject to change – see www.mottchildren.org/COVIDUpdate for updates and additional information.