Exercise & Athletics After COVID-19 Infection

RESOURCE GUIDE FOR THE SCHOOL DISTRICT

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Exercise & Athletics after COVID-19 Infection

Introduction

Infection with the novel SARS-Coronavirus-2 (COVID-19) has halted virtually all formal participation in sport and exercise. At long last, public health guidelines have begun releasing timelines for a graded reintroduction of both recreational and competitive athletics. However, questions remain for those individuals with prior COVID-19 exposure/infection regarding the safety of returning to exercise. The World Health Organization reports that most people who contract COVID-19 (>80%), will be asymptomatic or develop mild symptoms. There are many unanswered questions with ever changing data regarding the prevalence of asymptomatic COVID-19 cases in the community, the prevalence of cardiac injury for all exposed to COVID-19, and the associated short- and long-term risks.2

Regular moderate exercise has an abundance of beneficial effects beyond the cardiovascular system including mental health and a boost to the immune system. There is general agreement that regular moderate exercise up to 45 minutes a day has beneficial effects on immune defenses. Individuals who are physically fit and regularly exercise to a moderate degree have reduced markers of low-grade inflammation, more robust immune responses to vaccines, enhanced immune-surveillance, and a reduced risk of illness. However, there remains controversy as to whether more exhaustive and prolonged exercise negatively affects the immune system and increases susceptibility to infection. Given that COVID-19 has numerous direct and indirect effects on the heart, questions remain regarding the safety of exercise in those exposed to COVID-19 or who are recovering.2

What effect does COVID-19 have on the heart?

Mechanisms of COVID-19 induced myocardial (heart) injury remain unclear but may be related to cytokine mediated cardiomyopathy (heart muscle disease), demand ischemia (reduced blood flow to the heart), acute coronary syndrome (which, on initial data, appears rare), or myocarditis (inflammation of the heart muscle) from myocyte invasion by the virus. Up to one quarter of hospitalized patients with COVID-19 exhibit significant cardiac manifestations including left ventricular dysfunction and arrhythmias, which exceeds the about 1% prevalence of cardiac involvement in non-COVID-19 acute viral infections. Arrhythmias occur in about 17% of hospitalized patients while heart failure and cardiogenic shock were observed in up to 33% of patients. Early observations indicate that COVID-19 infected patients with hypertension, diabetes, cerebrovascular or cardiovascular disease are more likely to require hospitalization, ICU level care, and die from the infection.2

Myocarditis and Sudden Cardiac Death in Athletes

Myocarditis is a non-ischemic inflammatory heart muscle disease that can result in cardiac dysfunction and arrhythmias.3 The diagnostic evaluation typically begins with a clinical history and physical exam. The clinical presentation can be highly variable as patients can present with chest pain, exertional dyspnea and fatigue, or overtly decompensated heart failure and/or cardiogenic shock. The initial electrocardiogram (ECG) can also show variable findings including ST segment deviations, ectopy, conduction abnormalities, sustained arrhythmias or low voltages. Transthoracic echocardiography may show global left ventricular dysfunction;

however, localized wall motion abnormalities with pericardial effusions are also common. The gold standard means to establish a diagnosis of myocarditis is an endomyocardial biopsy; however, this test is limited by inherent risk and low sensitivity as the inflammatory process often occurs in a patchy distribution. The diagnosis is more commonly based on a history of chest pain, which may have been preceded by a viral prodrome, elevation in cardiac enzymes and a non-ischemic pattern of DGE on CMR. Myocarditis is frequently confused for a myocardial infarction based on symptoms, ECG findings and cardiac enzyme release.3

Though not as prevalent as other cardiac diseases, approximately 0.5% to 4.0% depending on age and region of the world, myocarditis accounts for 5-22% of sudden cardiac deaths (SCD) in younger populations. Furthermore, there appears to be a higher incidence of SCD occurring in the context of exercise in cases of myocarditis.3

It appears that myocarditis serves as a risk factor for SCD, especially in younger subjects. Exercise also seems to be associated with an increased incidence of SCD in patients with myocarditis. Clearly this is of particular concern to athletes where exercise and competitive sport is a major component of their lifestyle.3

Natural History of Myocarditis

The natural history of viral myocarditis appears to be characterized by an acute phase of viral replication followed by a sub-acute immune response phase and finally a chronic phase. The chronic phase ranges from complete recovery to fulminant heart failure. It is unclear, from the available data, whether most SCDs in athletes occur early (acute and sub-acute phases) or late (chronic phase) in the disease course.3

Updated Recommendations Published October 26, 2020

Historical lessons learned from the introduction of ECG screening for athletes indicate that application of Cardiac Magnetic Resonance (CMR) imaging in the absence of standardized measurements and normative data may yield unacceptable false-positive rates, leading to unnecessary downstream testing and unwarranted medical disqualifications. In accordance with the guideline CMR is appropriate when pretest probability is high based on a clinical syndrome suggestive of myocarditis coupled with isolated or combined objective pathologic criteria or recurrence of Cardiovascular (CV) symptoms or new exercise intolerance during a graded resumption in exercise training.5

Screening for RTP, as delineated in the original American College of Cardiology Section report , was designed to identify athletes at high risk after COVID-19 infection for subsequent clinical management, including potential sports restriction. Rather than canceling sports because of unsubstantiated concerns about cardiac safety based on limited data of unestablished clinical relevance this decision should be driven by the need to limit viral spread. With uncontrolled community transmission, we share concerns with public health officials about risks of increased disease transmission attributable to the resumption of organized sports. Accordingly, the decision to proceed with or delay organized sports should be based on community disease prevalence, coupled with the availability of resources that can be responsibly allocated to identify and prevent new infections among athletes5 .

How Health Care Resources Might Be Considered in a Balanced Approach to RTP

The implementation of screening algorithms requires consideration of available health care resources and acknowledgment that health care disparities are affected by social determinants. Among athletes, barriers to accessing appropriate care are driven in part by geography, social background, and demographics. The sheer numbers of athletes in recreational and competitive sports in the US appropriately call into question the logistic feasibility and financial expenditures of COVID-19 cardiac screening, particularly in the absence of clinical outcomes data. Early experiences within the sports cardiology community suggest that nearly all athletes, particularly those who have completely recovered from mild COVID-19 infection, do not develop clinically significant COVID-19 CV pathology. Prevalence and outcomes data will enable the refinement of RTP risk stratification protocols in a manner that balances clinical necessity with the realities of finite resource availability5.

Prior COVID-19 Illness

Confirmed diagnosis: Every student-athlete with a prior confirmed diagnosis (positive test) for COVID-19 should undergo an evaluation by one's medical provider prior to sports participation (Figure 1. Proposed Coronavirus Disease 2019 (COVID-19) Return-to-Play Algorithm for Athletes in Competitive High School Sports). Ongoing symptoms related to COVID-19 should be explored, including the presence of chest pain or shortness of breath with exertion, palpitations (heart racing), excessive fatigue, or decreased exercise tolerance. Written medical clearance is recommended prior to participation in sports. 1

Recommendations for Athletes in Competitive Sports Who Have COVID-19 But Remain Asymptomatic: We do not advocate for CV risk stratification among athletes who remain completely asymptomatic with prior COVID-19 infection, following completion of US Centers for Disease Control and Prevention (CDC) guided self-isolation ·Given the current lack of published data, consideration of comprehensive screening for this population could be reasonable if it is based on research and data collection. 5

Mild to moderate illness (not hospitalized): Most children of high school age who are infected with COVID-19 experience only mild symptoms or remain asymptomatic, and the overall risk of myocarditis prior to the COVID-19 pandemic among children is low .However, an exceedingly small number of individuals younger than 21 years may develop a multisystem inflammatory syndrome (MIS-C) several weeks after infection .Among athletes hospitalized with MIS-C who recover, RTP risk stratification as delineated by the original American College of Cardiology algorithm is warranted. 5 Student-athletes who had mild to moderate symptoms from COVID-19 that were managed at home should be seen by their medical provider for a detailed history of persisting symptoms or changes in their health status that may necessitate further testing or evaluation by a specialist.1

Severe (hospitalized) illness*:* Student-athletes who were hospitalized with severe illness from COVID-19, including multisystem inflammatory syndrome in children, have a higher risk for heart or lung complications such as arrhythmias, myocarditis, heart failure, sudden cardiac arrest

(SCA), and pulmonary embolism (blood clots to the lungs). A comprehensive cardiac evaluation is recommended in consultation with a cardiology specialist, which may include any or all of the following (as clinically indicated): ECG, cardiac biomarkers such as high-sensitivity troponin, echocardiogram, cardiac magnetic resonance imaging, Holter monitor, or stress test. Follow-up pulmonary evaluation and testing may also be indicated, including chest radiograph, spirometry, functional testing to assess bronchospasm or oxygen desaturation with exercise, chest computed tomography scan, or additional pulmonology consultation.1

Ongoing symptoms: Student-athletes with ongoing symptoms from diagnosed COVID-19 illness require a comprehensive evaluation to exclude heart and lung disorders that carry a risk of arrhythmia, respiratory compromise, SCA, or sudden death. Specifically, myocarditis may present with ongoing symptoms of chest pain, palpitations, shortness of breath, or exercise intolerance. Ongoing symptoms from COVID-19 may also indicate pulmonary issues such as acquired or worsening asthma, pneumonia, or pulmonary embolism that may cause chest pain, shortness of breath, tachycardia (fast heart rate), or a low oxygen saturation. The diagnosis of myocarditis, pulmonary embolism, or any other cardiopulmonary disorder should be managed per current medical guidelines. The student-athlete should not return to sports and/or exercise until medically cleared by a physician.1

Other considerations: Evaluation by a medical provider should also be considered for the following circumstances:

- Any “close contact” (ie, family or household member) with confirmed COVID-19 infection
- Student-athletes with underlying medical conditions that place them at higher risk of severe COVID-19 illness, such as uncontrolled or moderate to severe asthma, a serious heart condition, obesity, diabetes, chronic kidney or liver disease, or a weakened immune system
- Student-athletes with prior symptoms suggestive of (but not confirmed) COVID-19, especially if symptoms were severe or required hospitalization. 1

New COVID-19 Illness

Recreational Exerciser or Non-Athletic Person

The recreational exerciser seeking to resume activity for general physical fitness after COVID-19 who experienced only mild to moderate symptoms, were not hospitalized, and had no concerning cardiac symptoms should be able to resume recreational exercise at moderate intensity (e.g. Physical Activity Guidelines for Americans, US Department of Health and Human Services) once completely recovered. We would emphasize that the individual should start slow and gradually return to their previous levels, while being mindful for any clinical change or new cardiovascular symptoms. This population is not likely to require additional testing unless concerning cardiac symptoms develop upon resumption of activity. However, patients with pre-existing cardiac disease who are potentially at higher risk of complications with COVID-19 (e.g. hypertrophic cardiomyopathy, left ventricular systolic dysfunction, atherosclerotic heart disease) may require additional testing and risk assessment prior to a return to regular exercise levels.2

Return to Play for Athletes

The safety and timing of returning to exercise, intense training and/or sport in those with exposure or clinical manifestations of COVID-19 is currently unknown. There are large gaps in our current knowledge base including the lack of data on the incidence of cardiac injury in non-hospitalized individuals and the long-term cardiac effects of those exposed to COVID-19. As such, current recommendations are based on expert opinion with the potential for change as more data becomes available in the future. 2

Student-athletes should not attend school, sports practices, or competitions if feeling ill and should be referred to their medical provider for COVID-19 testing if they present with any of the COVID-19 symptoms from the CDC.

- Student-athletes who test positive for COVID-19 with or without symptoms should be isolated per public health guidelines. No exercise is recommended for at least 10 days from positive test.
- Prior to sports participation, student-athletes should be evaluated by a medical provider to assess for residual symptoms and the need for additional testing. Written medical clearance prior to sports participation is required (Appendix A).1
- Athletes must complete the progression below without development of chest pain, chest tightness, palpitations, lightheadedness, pre-syncope or syncope. If these symptoms develop, patient should be referred back to the evaluating provider who signed the form.

    - Stage 1: (2 Days Minimum) Light Activity for 15 minutes or less (Walking, Jogging, or Stationary Bike) at intensity no greater than 70% of maximum heart rate. NO resistance training.
    - Stage 2: (1 Day Minimum) Add simple movement activities (running drills) for 30 minutes or less at intensity no greater than 80% of maximum heart rate. NO resistance training.
    - Stage 3: (1 Day Minimum) Progress to more complex training for 45 minutes or less at intensity no greater than 80% maximum heart rate. May add light resistance and simple sport specific training (non-contact drills, shooting, dribbling, cutting, etc.). Athlete can perform this stage at their sport's practice under supervision of the coach and the athletic trainer.
    - Stage 4: (2 Days Minimum) Normal Training Activity (contact drills and scrimmaging) for 60 minutes or less at intensity no greater than 80% maximum heart rate. Athlete can perform this stage at their sport's practice under supervision of the coach and the athletic trainer.
    - Stage 5: Return to full activity/participation (ie, - contests/competitions).

Return to Play after Myocarditis

Current guidelines in the United States recommend that athletes with a probable or definite diagnosis of recent myocarditis should not participate in competitive sports while active inflammation is present regardless of age, gender or left ventricular function. The duration of

inflammation is variable and can take months for resolution. Athletes should undergo clinical testing with an exercise ECG, echocardiogram and Holter monitoring no less than 3 to 6 months after the initial illness. The duration of exclusion (3 months vs. 6 months) should be individualized and depends on the initial severity of disease.3

The American College of Cardiology's policy is to provide an exercise prescription based on the results of a cardiopulmonary stress test that aims to achieve a level of intensity and duration of exercise equivalent to 1000-2000 calories per week. The exercise heart rate should be targeted to 60-70% of the heart rate reserve (assessed during cardiopulmonary test on usual medications). High intensity interval training (HIIT) may be considered if the athlete is unsatisfied with this degree of restriction based on the known benefits and tolerability of HIIT in post myocardial infarction and heart failure patients. If the athlete wishes to return to competitive sporting activity, recommendations are provided on how best to do so in as safe a manner as possible. The athlete is followed with intermittent repeat rhythm monitors, imaging and stress testing. The frequency of these tests depends on the sporting activity and the degree of DGE.3 This would be performed as prescribed by a cardiologist and health care provider.

Reducing Risk of COVID-19 Infection

When weighing return to sports, factors that likely influence risk of infection are the sport itself (number of players, spacing, and frequency and duration of contact), and the setting (indoor vs. outdoor, size and ventilation of facility). As COVID-19 can be transmitted on surfaces, sports with shared equipment, facilities or common surfaces may pose additional risk.4

Other considerations are local disease activity and individual circumstances such as underlying health conditions that place the athlete or household contacts at risk (see list of high-risk conditions from the CDC).4

Any modifications to sports practices and competitions should consider CDC recommendations as well as state regulations and guidance. Examples of risk reduction in sports include:

- prioritizing noncontact activity,
- reinforcing hygiene and respiratory etiquette,
- minimizing travel and
- cleaning/disinfecting frequently touched surfaces.4

As in previous guidance, all children should have an annual health supervision visit that ideally incorporates the sports pre-participation physical evaluation.4

Wearing Face Coverings

When non-vigorous exercise is being performed and physical distancing is not possible, a cloth face covering should be worn. Cloth face coverings also should be worn by coaches, officials, spectators and volunteers, and by everyone arriving at and departing from an athletic facility/setting or on the sidelines. The World Health Organization does not recommend cloth face coverings during vigorous exercise, and the CDC cautions that some people in high-intensity activity may be unable to wear a cloth face covering.4

Emergency Action Plan

Every school is reminded to have a well-rehearsed emergency action plan (EAP) for every sport at every venue to facilitate a coordinated and efficient response to SCA

- Every school should maintain an on-site automated external defibrillator (AED) program that allows retrieval and use of an AED within 3 minutes of collapse at school athletic venues and buildings.
- Potential first responders to SCA, including coaches, are encouraged to be trained in cardiopulmonary resuscitation (CPR), the recognition of SCA, and use of an AED.
- Each school should conduct and document an annual EAP practice drill for SCA among anticipated first responders (ie, athletic trainers, school nurses, coaches, and administrators).
- AED devices should be maintained according to manufacturer guidelines, including monthly readiness checks and scheduled battery or lead replacement.1

Appendix

Appendix A

Athlete's Name: _____ DOB: _____ Date of Evaluation:_____

If an athlete has tested positive for COVID-19, he/she must be cleared for activity by an approved health care provider

THIS RETURN TO PLAY IS BASED ON TODAY'S EVALUATION

Date of Positive Test: _____

Student Athlete <15 years old:

❑**Asymptomatic**
- Rest and no exercise for 10 days from positive test

❑**Mild Symptoms**
- Rest and no exercise for 10 days from symptom onset and must have full resolution of symptoms

❑ **Moderate Symptoms; nonhospitalized**
- Follow up with primary care provider after resolution of symptoms
- 10 to 14 days of convalescence after symptom resolution before consideration of RTP
- Consider formal cardiovascular risk stratification with ECG, hs-cTn, echocardiogram

❑**Severe Symptoms; hospitalized**
- Follow up with primary care provider after resolution of symptoms
- 10 to 14 days of convalescence after symptom resolution before consideration of RTP
- Consider formal cardiovascular risk stratification with ECG, hs-cTn, echocardiogram

Student Athlete 15 years or above:

❑**Asymptomatic**
- Self-isolation and rest and no exercise for 10 days from positive test.

❑**Mild Symptoms**
- Self-isolation and rest and no exercise for 10 days from symptom onset. Must have full resolution of symptoms. CV testing not required but may be considered especially for protracted course of illness.

❑ **Moderate Symptoms; nonhospitalized**
- Follow up with primary care provider after resolution of symptoms
- 10 to 14 days of convalescence after symptom resolution before consideration of RTP
- Consider formal cardiovascular risk stratification with ECG, hs-cTn, echocardiogram

❑**Severe Symptoms; hospitalized**
- Rest and no exercise while symptomatic
- Follow up with medical professional after resolution of symptoms and/or referral to pediatric cardiologist
- 14 days of convalescence after symptom resolution before consideration of RTP
- Cardiovascular risk stratification with ECG, hs-cTn, echocardiogram

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❑ Athlete HAS satisfied the above criteria and IS cleared to start the Gradual Return to Play Progression.

❑ Athlete HAS NOT satisfied the above criteria and IS NOT cleared to Return to Play.

Medical Office Information (Please Print/Stamp):

Evaluator's Name: _____Office Phone: _____
Evaluator's Address: _____
Evaluator's Signature: _____

Please see next page for Return to Play Procedures

Return to Play (RTP) Procedures After COVID-19 Infection

Athletes must complete the progression below without development of chest pain, chest tightness, palpitations, lightheadedness, pre-syncope or syncope. If these symptoms develop, patient should be referred back to the evaluating provider who signed the form.

1. Stage 1: (2 Days Minimum) Light Activity for 15 minutes or less (Walking, Jogging, or Stationary Bike) at intensity no greater than 70% of maximum heart rate. NO resistance training.
2. Stage 2: (1 Day Minimum) Add simple movement activities (running drills) for 30 minutes or less at intensity no greater than 80% of maximum heart rate. NO resistance training.
3. Stage 3: (1 Day Minimum) Progress to more complex training for 45 minutes or less at intensity no greater than 80% maximum heart rate. May add light resistance and simple sport specific training (non-contact drills, shooting, dribbling, cutting, etc.). Athlete can perform this stage at their sport's practice under supervision of the coach and the athletic trainer.
4. Stage 4: (2 Days Minimum) Normal Training Activity (contact drills and scrimmaging) for 60 minutes or less at intensity no greater than 80% maximum heart rate. Athlete can perform this stage at their sport's practice under supervision of the coach and the athletic trainer.
5. Stage 5: Return to full activity/participation (ie, - contests/competitions).

RTP Procedure adapted from Elliott N, et al. Infographic. British Journal of Sports Medicine, 2020.

Figure 1. Proposed Coronavirus Disease 2019 (COVID-19) Return-to-Play Algorithm for Athletes in Competitive High School Sports

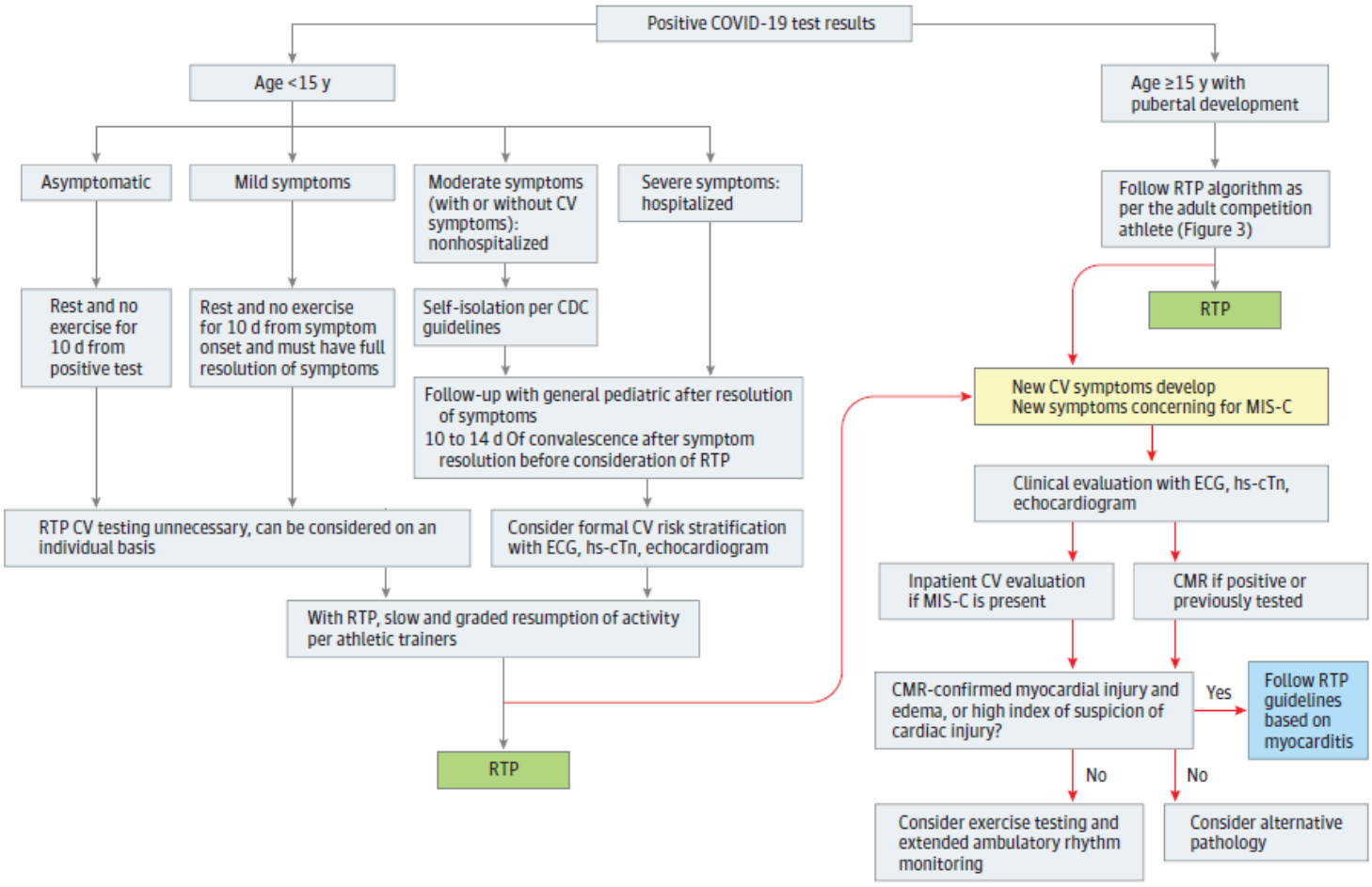
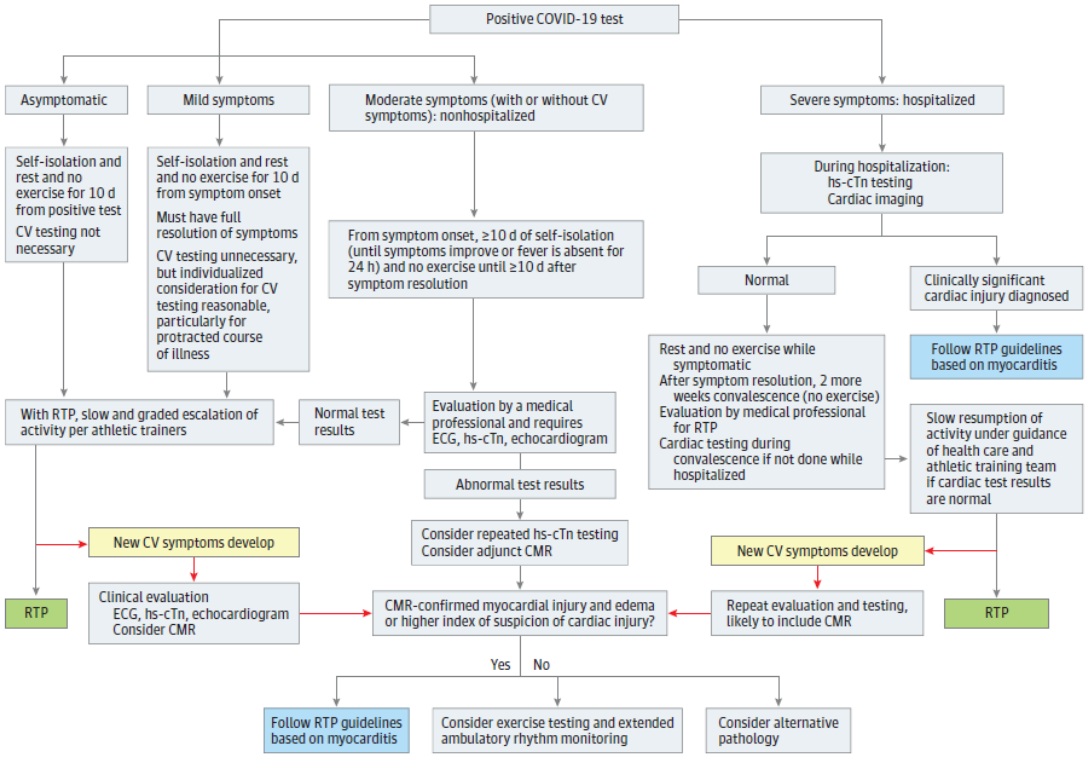


Figure 3. Proposed Coronavirus Disease 2019 (COVID-19) Return-to-Play Algorithm for Adult Athletes in Competitive Sports



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Appendix B

Return to Play (RTP) After COVID-19 Infection

Athlete's Name:_____
Date of HCP or Cardiology Clearance Note: _____

Athletes must complete the progression below without development of chest pain, chest tightness, palpitations, lightheadedness, pre-syncope or syncope. If these symptoms develop, patient should be referred back to the evaluating provider who signed the form.

Calculating Max Heart Rate: 220 - Your Age = Predicted Maximum Heart Rate in beats per minute (BPM)

1. Stage 1: (2 Days Minimum) Light Activity for 15 minutes or less (Walking, Jogging, or Stationary Bike) at intensity no greater than 70% of maximum heart rate. NO resistance training.
   Date:_____ Symptoms:_____
   Activity Performed:_____

   Date:_____ Symptoms:_____
   Activity Performed:_____

   ATC's Initials: _____

2. Stage 2: (1 Day Minimum) Add simple movement activities (running drills) for 30 minutes or less at intensity no greater than 80% of maximum heart rate. NO resistance training.
   Date:_____ Symptoms:_____
   Activity Performed:_____
   _____

   ATC's Initials: _____

3. Stage 3: (1 Day Minimum) Progress to more complex training for 45 minutes or less at intensity no greater than 80% maximum heart rate. May add light resistance and simple sport specific training (non-contact drills, shooting, dribbling, cutting, etc.). Athlete can perform this stage at their sport's practice under supervision of the coach and the athletic trainer.
   Date:_____ Symptoms:_____
   Activity Performed:_____
   _____

   ATC's Initials: _____

4. Stage 4: (2 Days Minimum) Normal Training Activity (contact drills and scrimmaging) for 60 minutes or less at intensity no greater than 80% maximum heart rate. Athlete can perform this stage at their sport's practice under supervision of the coach and the athletic trainer.
   Date:_____ Symptoms:_____
   Activity Performed:_____

Date:_____ Symptoms:_____
Activity Performed:_____

ATC's Initials: _____

5. Stage 5: Return to full activity/participation (ie, - contests/competitions).

Clearance Date: _____ Activity:_____

Name of Athletic Trainer Progressing Athlete through RTP: _____

Appendix C

Athletics-Preparticipation/Interval Health History

UHS Sports Medicine

Name: Date of Exam:

Date of Birth: Sex: Age:

Grade: School: Sport(s):

Medicines and Allergies: Please list all of the prescription and over-the-counter medicines and supplements (herbal and nutritional) that you are currently taking:

Do you have any allergies? ☐ Yes ☐ No If yes, please identify: ☐ Medicines ☐ Pollens ☐ Food ☐ Stinging Insects

Explain "Yes" answers below. Circle questions you don't know the answers to.

General Questions	Yes	No
1. Has a doctor ever denied or restricted your participation in sports for any reason?		
2. Do you have any ongoing medical conditions? If so, please identify: ☐ Asthma ☐ Anemia ☐ Diabetes ☐ Infections ☐ Other:		
3. Have you ever spent the night in the hospital?		
4. Have you ever had surgery?		
Heart Health Questions About You	**Yes**	**No**
5. Have you ever passed out or nearly passed out **during** or **after** exercise?		
6. Have you ever had discomfort, pain, tightness, or pressure in your chest during exercise?		
7. Does your heart ever race or skip beats (irregular beats) during exercise?		
8. Has a doctor ever told you that you have any heart problems? If so, check all that apply: ☐ High blood pressure ☐ A heart murmur ☐ High cholesterol ☐ A heart infection ☐ Kawasaki disease ☐ Other:		
9. Has a doctor ever ordered a test for your heart? (For example, ECG/EKG, echocardiogram)		
10. Do you get lightheaded or feel more short of breath than expected during exercise?		
11. Have you ever had an unexplained seizure?		
12. Do you get more tired or short of breath more quickly than your friends during exercise?		
Heart Health Questions About Your Family	**Yes**	**No**
13. Has any family member or relative died of heart problems or had an unexpected or unexplained sudden death before age 50 (including drowning, unexplained car accident, or sudden infant death syndrome)?		
14. Does anyone in your family have hypertrophic cardiomyopathy, Marfan syndrome, arrhythmogenic right ventricular cardiomyopathy, long QT syndrome, Brugada syndrome, or catecholaminergic polymophic ventricular tachycardia?		
15. Does anyone in your family have a heart problem, pacemaker, or implanted defibrillator?		
16. Has anyone in your family had unexplained fainting, unexplained seizures, or near drowning?		
17. Have you, or anyone in your immediate family, tested positive for COVID-19? **If Yes,** please explain on bottom of side 2.		
If Yes, has your physician granted clearance for return to gym/sport?		
If Yes, please submit a copy of that clearance to your school nurse. Check yes/no if this has been done.		
If Yes, have you been evaluated by a Cardiologist after testing positive for COVID-19?		
Bone and Joint Questions	**Yes**	**No**
17. Have you ever had an injury to a bone, muscle, ligament, or tendon that caused you to miss a practice or a game?		
18. Have you ever had any broken or fractured bones or dislocated joints?		
19. Have you ever had an injury that required x-rays, MRI, CT scan, injections, therapy, a brace, a cast, or crutches?		
20. Have you ever had a stress fracture?		
21. Have you ever been told that you have or have you had an x-ray for neck instability or atlantoaxial instability? (Down syndrome or dwarfism)		

continued next page

UHS Sports Medicine Athletics-Preparticipation/Interval Health History *continued*

Bone and Joint Questions *continued*	**Yes**	**No**
22. Do you regularly use a brace, orthotics, or other assistive device?		
23. Do you have a bone, muscle, or joint injury that bothers you?		
24. Do any of your joints become painful, swollen, feel warm, or look red?		
25. Do you have any history of juvenile arthritis or connective tissue disease?		
Medical Questions	**Yes**	**No**
26. Do you cough, wheeze, or have difficulty breathing during or after exercise?		
27. Have you ever used an inhaler or taken asthma medicine?		
28. Is there anyone in your family who has asthma?		
29. Were you born without or are you missing a kidney, an eye, a testicle (males), your spleen, or any other organ?		
30. Do you have groin pain or a painful bulge or hernia in the groin area?		
31. Have you had infectious mononucleosis (mono) within the last month?		
32. Do you have any rashes, pressure sores, or other skin problems?		
33. Have you had a herpes or MRSA skin infection?		
34. Have you ever had a head injury or concussion?		
35. Have you ever had a hit or blow to the head that caused confusion, prolonged headache, or memory problems?		
36. Do you have a history of seizure disorder?		
37. Do you have headaches with exercise?		
38. Have you ever had numbness, tingling or weakness in your arms or legs after being hit or falling?		
39. Have you ever been unable to move your arms or legs after being hit or falling?		
40. Have you ever become ill while exercising in the heat?		
41. Do you get frequent muscle cramps when exercising?		
42. Do you or someone in your family have sickle cell trait or disease?		
43. Have you had any problems with your eyes or vision?		
44. Have you had any eye injuries?		
45. Do you wear glasses or contact lenses?		
46. Do you wear protective eyewear, such as goggles or a face shield?		
47. Do you worry about your weight?		
48. Are you trying to or has anyone recommended that you gain or lose weight?		
49. Are you on a special diet or do you avoid certain types of foods?		
50. Have you ever had an eating disorder?		
51. Do you have any concerns that you would like to discuss with a doctor?		
Females Only	**Yes**	**No**
52. Have you ever had a menstrual period?		
53. How old were you when you had your first menstrual period?		
54. How many periods have you had in the last 12 months?		

Explain "Yes" answers here:

Emergency Contact Name: Relationship: Contact Info:

I hereby state that, to the best of my knowledge, my answers to the above questions are complete and correct.

Signature of Athlete: Date: Time:

Signature of Parent/Guardian: Date: Time:

UHS/LS/PS/08/20

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