

RETURN TO SPORTS AND COVID-19 INFECTION

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Correctly ID patients
with disease

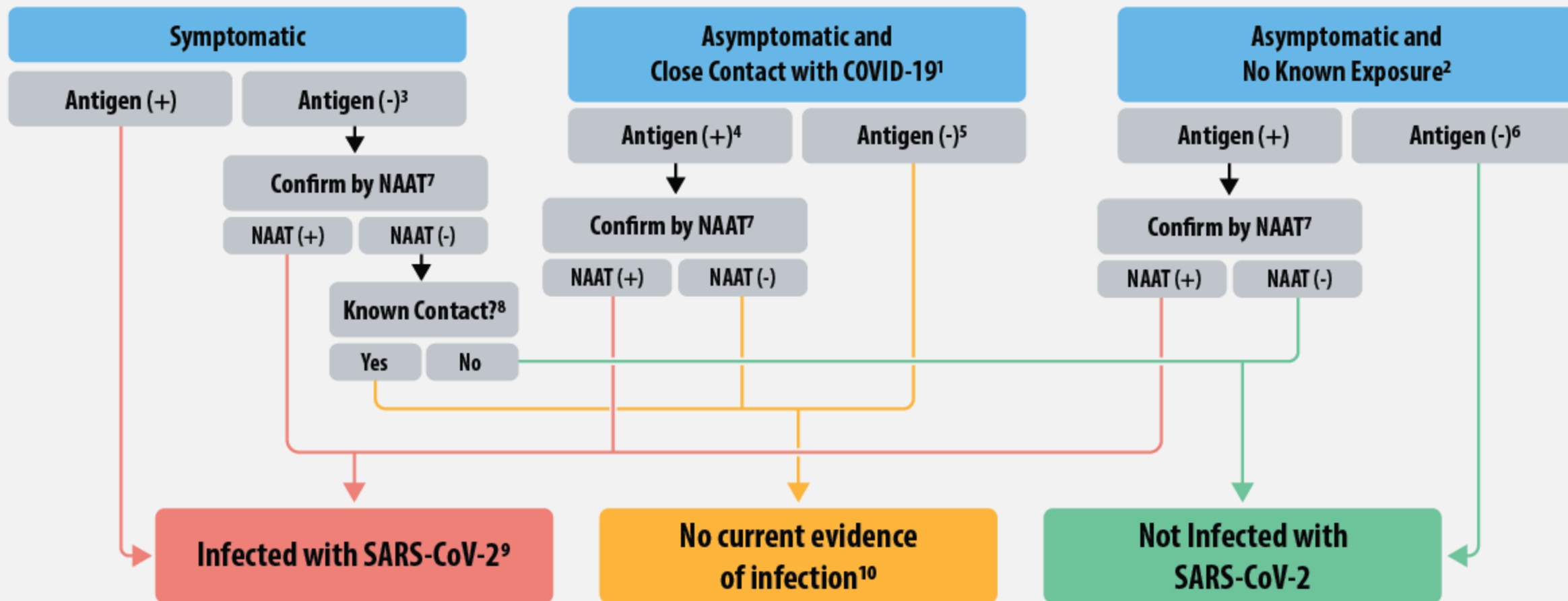


Correctly ID patients
without disease



Table 2. Summary of Some Differences between RT-PCR Tests and Antigen Tests

	RT-PCR Tests	Antigen Tests
Intended Use	Detect current infection	Detect current infection
Analyte Detected	Viral RNA	Viral Antigens
Specimen Type(s)	Nasal Swab, Sputum, Saliva	Nasal Swab
Sensitivity	High	Moderate
Specificity	High	High
Test Complexity	Varies	Relatively easy to use
Authorized for Use at the Point-of-Care	Most devices are not, some devices are	Yes
Turnaround Time	Ranges from 15 minutes to >2 days	Approximately 15 minutes
Cost/Test	Moderate	Low



RETURN TO SPORTS AND COVID-19 INFECTION

- Transmission of virus among athletes
 - Number of players, spacing, frequency/duration of contact
 - Sports setting (indoor, outdoor, ventilation)
- Cloth face coverings
 - AAP encourages athletes to wear them at all times for group training, competition, and on the sidelines
 - May not be necessary for individual sports with low risk
 - Should not be used in sports where face coverings become a hazard (gymnastics, swimming, wrestling, etc)

RETURN TO SPORTS AFTER COVID-19 INFECTION

- COVID-19 has been shown to cause damage to the heart
 - Myocarditis (inflammation of the heart muscles) → sudden death during exercise
 - Requires evaluation for evidence of cardiac injury for sports clearance
- COVID-19 in children
 - Acute infection and multi-inflammatory syndrome in children
 - Majority of infection
 - Asymptomatic
 - Mild respiratory illness
- COVID—19 data continues to be reviewed, and guidelines updated

FACTORS TO CONSIDER

- Timing of COVID-19 infection relative to clearance examination
- Severity and Duration of COVID-19 infection
- Level of activity being considered
 - Recreational sports have a different risk than collegiate level sports

TIMING OF COVID-19 INFECTION

- Defer sports clearance evaluation until asymptomatic for 2 weeks
 - Allows for clinical manifestations to present
 - Decreases infection transmission

COVID-19 DISEASE SEVERITY

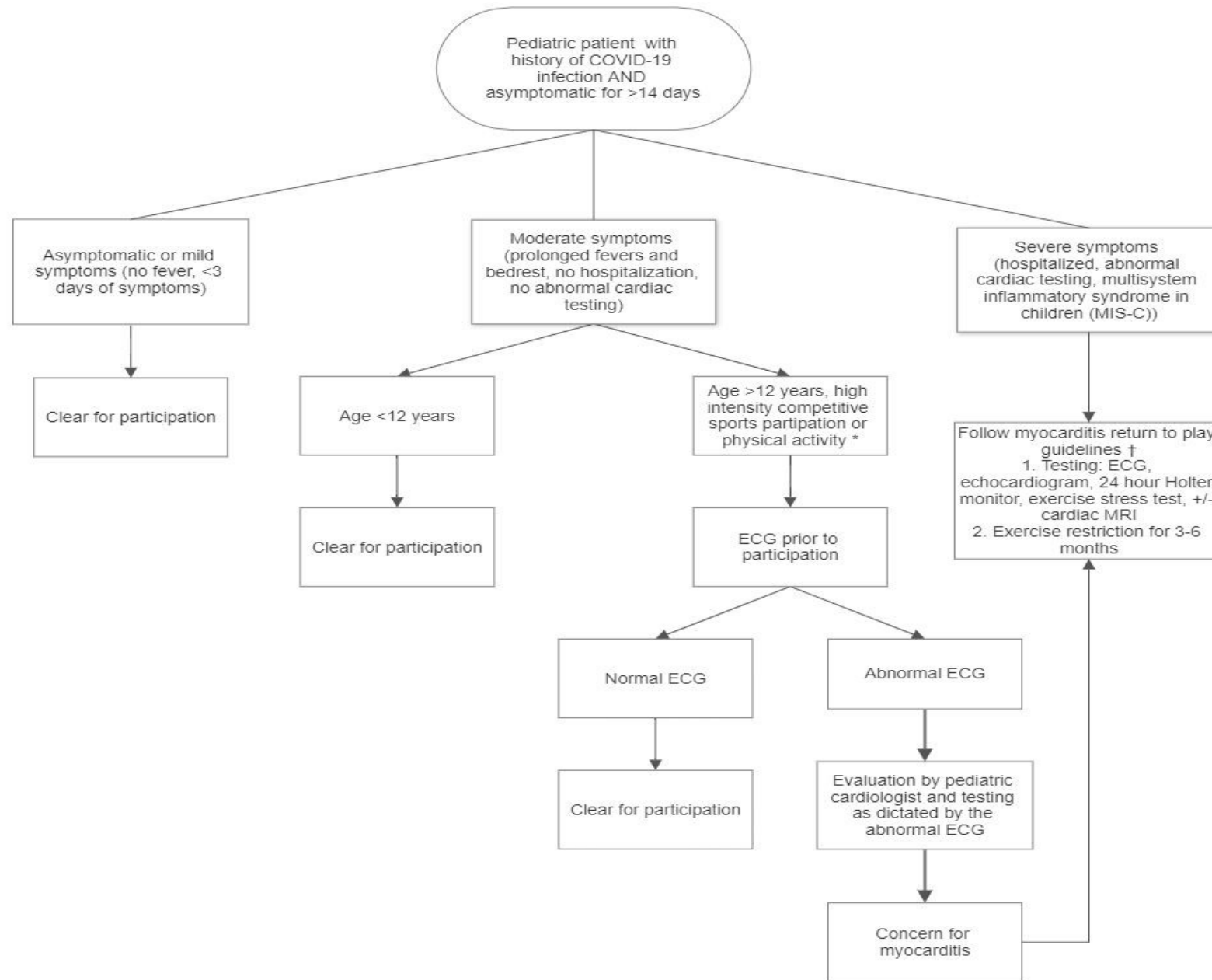
ASYMPTOMATIC OR MILD INFECTION

- Fatigue, loss of smell or taste, nausea, vomiting, diarrhea, headache, cough, sore throat, nasal congestion
- Treat like children with other respiratory virus infections
- No cardiac clearance required

MODERATE TO SEVERE INFECTION

- Systemic symptoms (fevers, chills, muscle aches, pneumonia, requiring supplemental oxygen, severe weakness)
- Cardiac symptoms (shortness of breath, chest pain, tightness, or pressure at rest or during exertion)
- Cardiac evaluation as per algorithm
- Risk stratification

Return to Play After COVID-19 Infection in Pediatric Patients



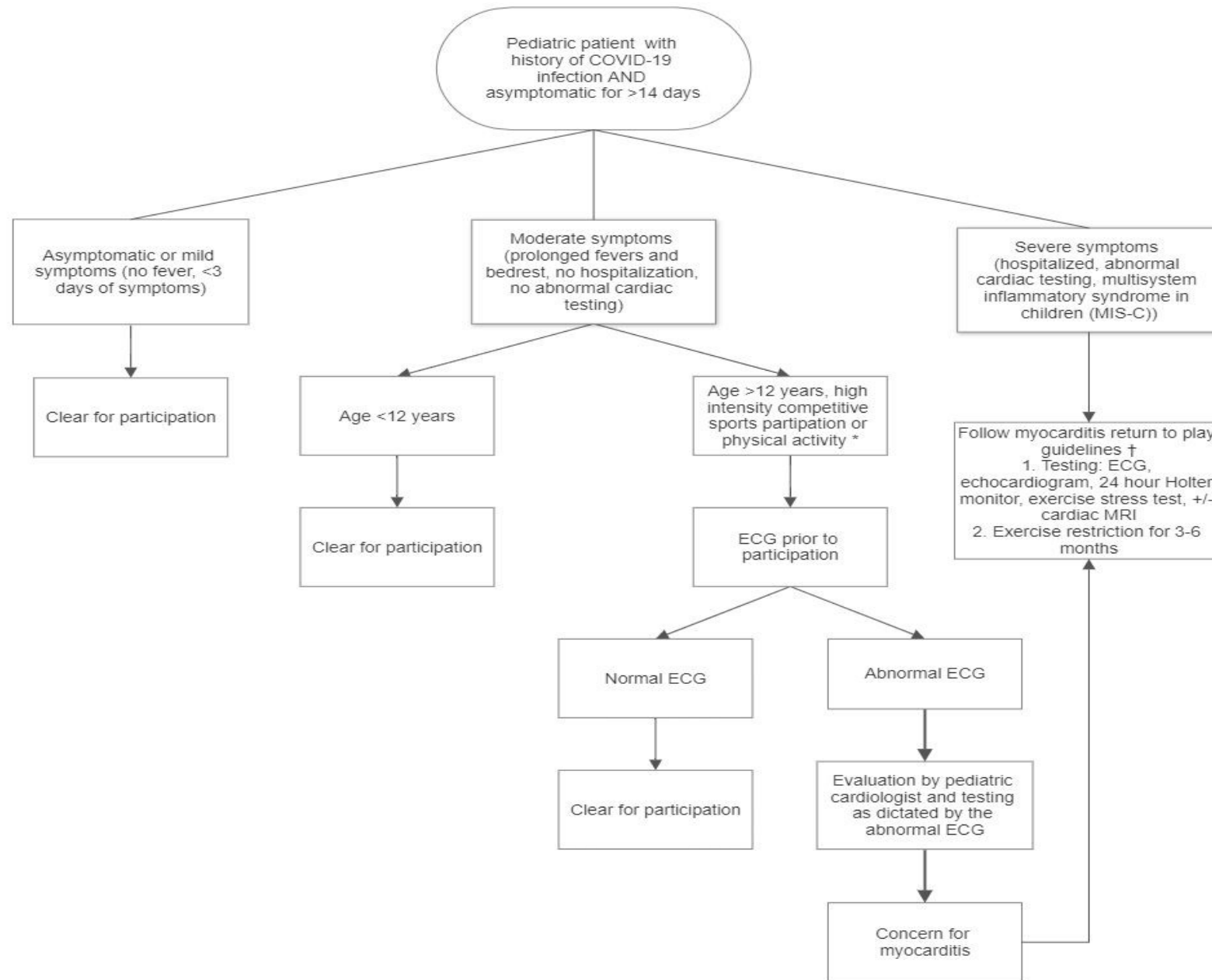
PEDIATRIC CARDIOLOGY PERSPECTIVE

- Challenging situation due to lack of long term information
 - Remain flexible as more information becomes available
- Lack of consensus among different groups
 - American College of Cardiology (ACC)
 - American Academy of Pediatrics (AAP)
 - Journal of American Medical Association (JAMA)
 - European Association of Preventive Cardiology
- Confusion in guidelines due to definition of disease severity

MYOCARDITIS

- Numerous infectious and non-infectious causes
- Some may progress to decreased heart function (cardiomyopathy)
- Increased risk of arrhythmias
- Can be difficult to diagnose based on how much of the heart is affected
- Initial cardiac MRI study suggested high risk of myocarditis in college athletes after COVID
 - Lacked appropriate control patients or comparison to other infections

Return to Play After COVID-19 Infection in Pediatric Patients



LOCAL EXPERIENCE TO DATE

- Rare to have heart involvement
 - Patients admitted to the hospital with significant illness highest risk
 - Pediatric Cardiology typically already involved in these patients
 - MIS-C (Multisystem Inflammatory Syndrome in Children)
 - Few have had decreased heart function that recovered
 - As shown, require longer restrictions
- Screening EKGs normal with few incidental findings
- Similar findings in Rochester and Buffalo regions thus far

RETURNING TO PLAY AFTER SCREENING

- Gradual return to full competition
 - Some advocate for specific guidelines for how to return
 - Lack of evidence
 - Recommend tailored gradual return based on significance of illness and time out of exercise
- If cardiac symptoms develop after resuming exercise, recommend full cardiology evaluation

VARIOUS GUIDELINES

- <https://www.acc.org/latest-in-cardiology/articles/2020/07/13/13/37/returning-to-play-after-coronavirus-infection>
- <https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-interim-guidance-return-to-sports/>
- *JAMA Cardiol.* 2021;6(2):219-227. doi:10.1001/jamacardio.2020.5890
- *European Heart Journal*, Volume 40, Issue 1, 01 January 2019, Pages 19–33, <https://doi.org/10.1093/eurheartj/ehy730>