



Five Things Physicians and Patients Should Question

1

Do not order troponins for the routine evaluation of pediatric chest pain in the absence of a concerning history or electrocardiogram (ECG) abnormalities.

Troponin-I levels are a valuable tool for the assessment of adult patients who present with chest pain. However, these levels are not as useful in the pediatric population. Troponin levels in the great majority of pediatric patients presenting with chest pain are normal. Furthermore, troponin levels have not been shown to reliably correlate with disease severity or prognosis in many cardiac diseases known to cause chest pain in pediatric patients. However, in a few circumstances, such as a family history of very early cardiovascular disease or a history suggestive of myocarditis/pericarditis, consideration of troponin levels is reasonable. Therefore, do not order troponin levels for the routine evaluation of pediatric chest pain in the absence of a concerning history or ECG abnormalities.

2

Do not routinely order a screening ECG as part of a sports preparticipation examination in asymptomatic, otherwise healthy patients with no personal or family history of cardiac disease.

Routine screening ECGs for preparticipation sports clearance are not currently recommended by the American Heart Association (AHA). Instead, it is recommended that the AHA's 14-point screening guidelines, or the American Academy of Pediatrics' "Preparticipation Physical Evaluation" be used in conjunction with a targeted personal history, family history, and thorough physical examination. The goal is to identify warning signs or signs that raise suspicion of cardiovascular diseases that place certain athletes at risk of sudden cardiac death. These individuals should be referred for further evaluation by a pediatric cardiologist who may order an ECG or an echocardiogram as part of the work-up.

Routine ECG screening of healthy pediatric patients with no personal or family history of cardiac disease has demonstrated a high false-positive rate and has not been found to reduce mortality from sudden cardiac death. In addition, it can also lead to unnecessary secondary evaluations. ECG screening should be performed in those patients with a strong family history of conditions likely to cause sudden cardiac arrest or death.

3

Do not order an echocardiogram for the routine evaluation of pediatric chest pain in the absence of a concerning history or ECG abnormalities.

Chest pain is a common presenting symptom in pediatrics but is rarely life-threatening, and the vast majority of cases are not cardiac in origin. Therefore, the addition of an echocardiogram only adds diagnostic value in very limited circumstances and increases the cost of care. If the patient has a concerning personal (exertional chest pain with an abnormal ECG) or family history of sudden or unexplained death or cardiomyopathy or ECG abnormalities, consultation with a pediatric cardiologist is generally recommended prior to obtaining an echocardiogram. Therefore, it is important to obtain a complete personal and family history,* physical examination, and screening ECG, if the treating physician feels that the chest pain is cardiac in nature, prior to proceeding with cardiac consultation and echocardiography.

4

Do not order an echocardiogram for the routine evaluation of pediatric syncope in the absence of a concerning history or ECG abnormalities.

Syncope is a common complaint in pediatrics and is rarely caused by a cardiac issue in patients with a normal physical examination. If the episode is caused by the heart, it generally is an issue with the heart rhythm. Therefore, an echocardiogram rarely adds diagnostic value and it increases cost of care. In situations in which an echocardiogram may be warranted, (syncope that occurs in the circumstance of an abnormal ECG, exertional syncope, unexplained postexertional syncope, or syncope in the setting of a concerning family history,* consultation with a pediatric cardiologist is recommended prior to obtaining the echocardiogram. Therefore, it is important to obtain a thorough personal and family history,* physical examination, and ECG when indicated prior to proceeding with echocardiography in the initial assessment of pediatric syncope.

5

Do not order a screening ECG prior to initiation of attention-deficit/hyperactivity disorder (ADHD) therapy in asymptomatic, otherwise healthy pediatric patients with no personal or family history of cardiac disease.

Many pediatricians obtain ECGs in healthy patients with no personal or family history* of cardiac disease prior to initiating stimulant therapy for ADHD out of fear of triggering an adverse cardiovascular event or worsening a previously undiagnosed cardiovascular disease. However, the probability that such screening will lead to the diagnosis of cardiac disease is low. Furthermore, when ECG abnormalities are identified, they rarely warrant a change in planned ADHD therapy. As a result, obtaining the ECG increases health care costs and can increase stress for both the patient and family.

If there is concern based on the history and physical examination, then a pediatric cardiology referral is a reasonable consideration.

*Family history should assess specifically for the following types of cardiovascular diseases:

- Connective tissue disorders
- Cardiomyopathies
- Arrhythmias, including need for pacemaker or defibrillator implantation
- Storage diseases
- Sudden unexplained death
- Premature cardiovascular disease prior to the age of 50 years

How This List Was Created

This list was developed initially by faculty in Pediatric Cardiology at University Hospitals in Cleveland OH. It was then revised and approved by the AAP Section on Cardiology and Cardiac Surgery. After review by other AAP sections, the AAP Executive Committee granted final approval of the list. The guidance in this list does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate. The guidance in this list does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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The AAP Section on Cardiology and Cardiac Surgery includes over 800 pediatric cardiologists and their mission is to advance the treatment and education of pediatric cardiology diseases through advocacy, education and collaboration.

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