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## SUBSPECIALIST CONSULT

# Chest Pain in the Child and Adolescent

Chest pain is extremely common in children and adolescents—as many as 70% of healthy children experience chest pain. In most instances, following a thorough history and physical

examination, no intervention is required.

The incidence of chest pain with a cardiac etiology is extraordinarily low, less than 1%. Patient and family histories and physical examination dictate when management by a general pediatrician is appropriate. First, determine through history if the child has exercise-induced pain. Patients with noncardiac chest pain often have sharp stabbing pain that lasts

a few seconds to 1-2 minutes, and the pain is not associated with exercise.

Exercise-induced chest pain is concerning, but the most common cause is exercise-induced bronchospasm. Ask the child or adolescent to describe the painful episodes. If the patient says: “I run, and then I feel like there is an elephant sitting on my chest,” that should prompt referral to a cardiologist. In contrast, if the pa-

tient says: “I run, and I feel like I cannot breathe and/or I cough,” that is more likely exercise-induced asthma.

There are red flags in the history and physical examination that prompt referral of the child to a specialist. But keep in mind that overreferral is a concern. Many general pediatricians understandably are scared when a patient presents with chest pain, but most communities do not have the resources to support widespread referral nor is it warranted in most cases.

Anticipatory guidance is critical for pediatricians managing most children and adolescents with chest pain. Inform the typical patient with sharp, stabbing pain and the family members that such episodes are likely to continue in the future. The patient does not necessarily need to return or go to the emergency department every time the pain recurs.

In contrast, a patient with a history of exercise-induced chest pain or who reports passing out during exercise is more of a concern. Ask patients about any extreme fatigue associated with exercise that is different from what their peers experience. Also, children with an unexplained seizure disorder or a history of passing out after an emotional startle (from a loud noise) might have long QT syndrome. Referral to a specialist is warranted. Although Kawasaki disease is rare, consider it in your differential diagnosis; keep in mind that some patients might experience chest pain associated with Marfan syndrome.

In terms of family history, ask if any relatives were diagnosed with long QT syndrome or hypertrophic cardiomyopathy. Family history also is relevant if there were any unexpected or unexplained deaths before age 50 years. A family member who died of cardiac causes before age 50, especially in the absence of typical risk factors, is also a concern. Listen for a murmur, especially a murmur that gets louder when the patient stands. This feature could be consistent with hypertrophic cardiomyopathy.

I do not recommend an electrocardiogram for most patients with a history of sedentary chest pain because there is a high false-positive rate with this test. Also, I generally do not recommend exercise stress tests because they are not helpful in the setting of routine chest pain. For the minority of patients with true exercise-induced chest pain, however, these tests can be useful, but they should be ordered by a cardiologist.

Children's Healthcare of Atlanta provides a Pediatric Sudden Cardiac Death Risk Assessment Form online for any health care provider. This tool can be accessed at [www.choa.org/default.aspx?id=7317](http://www.choa.org/default.aspx?id=7317) and is downloadable in English or Spanish. ■

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