

Primary Care Provider Referral Algorithm for Chest Pain

Important Diagnostic Points:
1. Chest pain in children is rarely due to a cardiac cause.
2. The two primary causes for cardiac-related chest pain are ischemia and inflammation.
3. Ischemia in children is rare. It can be due to a congenital or acquired coronary abnormality, such as anomalous coronary artery from the opposite aortic sinus, or from a history of Kawasaki Disease with coronary aneurysms. These lesions typically cause exertional chest pain.
4. Inflammation is present in pericarditis/myocarditis, causing pain from inflammation of the pericardium and adjacent sensory nerves. This pain is more unrelenting, is sometimes alleviated by leaning forward, and can be accompanied or preceded by a viral illness with systemic symptoms such as fever. It can also occur with autoimmune and inflammatory diseases.
5. Brief, intermittent chest pain episodes that occur at rest are rarely pathologic.
6. Important points in the past medical history include systemic inflammatory diseases, presence of a hypercoagulable state, and prolonged immobilization; important points in the family history include first degree relatives with cardiomyopathy, unexpected sudden death, or a hypercoagulable state.
Algorithm:
<ul style="list-style-type: none"> • Nonexertional chest pain with negative PMH and FH (see #6 above), normal ECG → Reassure, no referral, no further testing • Chest pain (exertional or nonexertional) accompanied by abnormal PMH or FH (see #6 above) → refer to Cardiology • Exertional chest pain: <ul style="list-style-type: none"> ○ If exclusively exertional → refer to Cardiology, restrict from exercise until then ○ If it occurs at rest and at low level of exertion, and if negative PMH/FH/ECG → no referral and no further testing • Uneven breath sounds OR persistent CP of sudden onset that is not reproducible with pressure at the costochondral junction → obtain chest X-ray (rule out pneumothorax)
Citations:
<p><i>Friedman KG et al. Management of Pediatric Chest Pain Using a Standardized Assessment and Management Plan. Pediatrics 128(2); 2011.</i></p> <p><i>Angoff, GH et al. Regional Implementation of a Pediatric Cardiology Chest Pain Guideline Using SCAMPs Methodology. Pediatrics 132(4); 2013.</i></p>