

## What Causes Chest Pain in Children?

Chest pain in children and adolescents is a very common complaint mentioned to parents. Fortunately it is very rare that chest pain is caused by a significant problem.

The most common source of chest pain in children is what is called "musculo-skeletal" in origin. The chest wall has many ribs and each of these ribs attach to the sternum or breastbone in the front of the chest by means of joints. Each rib also has three sets of muscles associated with it. We feel that most of the time when children have chest pain what is happening is that the movement of the joints of the ribs or the muscles associated with them is painful. This may occur because one of the muscles is stretched or because one of the joints is slightly inflamed. Usually this occurs after some type of exercise or trauma that the patient isn't even aware of. Chest wall pain usually is described as sharp or stabbing and made worse by breathing in or out. It usually hurts with pressure. Most of the time it is not associated with exercise.

Another more common cause of chest pain in kids is inflammation of the esophagus (tube between the mouth and stomach). Sometimes some of the stomach contents can rise up a bit and cause a burning or irritation of the esophagus. This can be treated with something as simple as antacids (Zantac, Mylanta, Tums, etc.).

There are some cardiac problems that can cause chest pain. It is felt that Mitral Valve Prolapse can sometimes (about 18%) cause chest pain. Rarely, severe aortic stenosis (narrowing of the aortic valve) can do this. Inflammation of the sack around the heart called the pericardium either by infection or juvenile rheumatoid arthritis can cause pain. Rarely chest pain can be caused by angina from an inadequate amount of blood flow to the coronary arteries. This can be caused by Kawasaki disease, severe aortic valve leakage, congenital abnormalities of the coronary arteries, or after repair of certain kinds of heart defects. Sometimes children with abnormal, very fast heart beats (Paroxysmal Supraventricular or Ventricular Tachycardia) will say that their heart hurts when they are having a rapid heart rate. Some children with severe Cardiomyopathy can have chest pain because their heart is not able to pump enough blood. A history of syncope (fainting), presyncope (dizziness), palpitations or previous cardiac surgery or a family history of sudden death can suggest the possibility of a cardiac origin of chest pain.

There are some rare noncardiac reasons for chest pain. These include Sickle cell anemia, Pneumothorax, pneumonia, asthma and very rarely chest tumors such as lymphomas. These conditions usually have other physical findings that make them readily apparent.

In summary, over 90% of children with chest pain have a benign condition that is not related to their heart. What is important is to reassure them that they are OK and not going to have a heart attack like Grandpa! Even relatively young kids are aware of heart attacks and fear them, especially if there are concerns and stress in the family.

If you have any questions please ask one to the doctors.