

## Chest Pain in Children

### Dr. Kavın Desai

**Dr. Hendler:** Welcome to KP HealthCast. Today in our studio we have Dr. Kavın Desai, Board Certified Pediatric Cardiologist who practices at the KP Medical Center in Hayward. Dr. Desai did his pediatrics residence and cardiology fellowship at Stanford University and has been with KP since 1999. Welcome Dr. Desai.

**Dr. Desai:** Thank you Peter.

**Dr. Hendler:** Chest pain in adults is a worrisome thing, but what about in children? Should we be more worried or less?

**Dr. Desai:** Well unlike in adults, chest pain in children is rarely caused by heart problems. In fact, studies show that less than 1% of chest pain in children is due to heart problems. So the answer to your question is that although a heart problem in children is more worrisome, chest pain caused by a cardiac problem is so infrequent that when a child complains of chest pain the more common cause is going to be noncardiac and therefore less worrisome.

**Dr. Hendler:** So then why does chest pain occur in children if cardiac causes are not common?

**Dr. Desai:** Well one of the most common reasons for chest pain in kids is caused by straining of chest muscle or by inflammation of a joint in the chest wall. So let's say a child has a hacking cough for a week or so, it's not unusual for that child to experience chest pain related to the constant and severe strain placed on the muscles of the chest during forceful coughing. And other similar causes that would do the same thing would be asthma, or pneumonia or bronchitis; something like that.

**Dr. Hendler:** Well if chest wall strain can cause chest pain, what about heavy lifting?

**Dr. Desai:** Absolutely. So let's take the child who is an athlete. A child that plays football starts lifting weights as part of training. Now it may not even be a lot of weight, but just a new activity that they're doing. Interestingly enough, this doesn't necessarily have to cause immediate pain, such as when you sprain your ankle for example. Repetitive muscle strain like that can appear weeks after the insult. So four weeks after starting weightlifting for example a child will complain that his chest hurts and may not even remember that he began weightlifting recently.

**Dr. Hendler:** I remember once I went to see my doctor for some chest pain and he told me I had acid reflux.

**Dr. Desai:** Right. Children can also have acid reflux or what's more commonly called heartburn. What happens is that the acid of the stomach backs up into the esophagus or food pipe and causes irritation and pain and this can occur particularly after eating spicy or greasy foods, but it can also occur at any time. Stress and anxiety makes this kind of pain a lot worse and alcohol and some drugs can also make it worse. What we're seeing today is that more and more children are developing symptoms of acid reflux and we're not actually sure why this trend is occurring, but it may be due to the higher levels of stress and anxiety our children experience in school, at home, peer pressure; that kind of thing.

**Dr. Hendler:** Okay so as a parent, how do I know if my child's complaint of chest pain is something to worry about?

**Dr. Desai:** Now that's a great question. First of all statistically, chest pain will most likely not have a cardiac origin as I already mentioned. And really that's what we're most concerned about. I mean all these other reasons are really not life threatening. So let's take an example; muscular or chest wall pain is usually characterized by worsening of the pain with movement of the shoulders, or the chest or with deep breathing. So that's a key to that may be the cause of chest pain. Acid reflux pain is usually, but not always, a burning sensation and often is worse after eating spicy or greasy food or sometimes after heavy meals. It's often associated or occurs in kids that are anxious or nervous. So that's another tip-off. Now what do you need to really worry about? When you need to go into see your doctor right away is if your child complains of chest pain that's associated with his heart beating funny or palpitations, if they are dizzy or they pass out. Now clearly in those situations you want to bring your child in right away for evaluation. The other red flag would be if the chest pain occurred during active exercise. So your child's running across the soccer field and they stop because of the severity of the chest pain, you should take that child to the emergency room as well.

**Dr. Hendler:** So what are some of the heart problems that can cause chest pain in children?

**Dr. Desai:** So again these are rare conditions, but there are coronary artery abnormalities or that is abnormalities of the blood vessels that take oxygen to your heart muscle. These abnormalities are typically congenital or you're born with them and they can cause chest pain and of course need to be repaired. There's also rare heart infections that we call myocarditis that sometimes cause chest pain. Also the clogged arteries that we hear about in adults that cause heart attacks, it can occur in children rarely, although most of these have only ever been reported when there is hereditary cholesterol problems so that all family member have high cholesterol and usually the pediatrician or somebody will check a cholesterol level and that will be high. And in those kids sometimes they can get early, what we call coronary artery disease or clogged arteries, where cholesterol is a problem. And finally, I want to talk about a condition that's not too common but our listeners may have heard of it and that's called Kawasaki disease. Now a lot, there's a fair amount of children who get Kawasaki disease, but most of them don't have any long term consequences. But a small fraction can develop coronary artery disease and that

can lead to chest pain and clogged arteries. But you would know this. I mean your child has a history of Kawasaki disease and then they have chest pain and that's one of the things that most cardiologists will remind parents of that if that combination occurs, you should bring them in and get evaluated.

**Dr. Hendler:** And if one of these occurs, it will be dealt with by your doctor or a cardiologist.

**Dr. Desai:** That's right.

**Dr. Hendler:** Well what about common occurrence of chest pain that is not cardiac, how does a parent deal with that?

**Dr. Desai:** So if your child appears to have chest pain that is not cardiac and let's say it's caused by chest wall strain, well it should be treated just like any other strain anywhere else in the body. First, usually just rest. Most of the time that takes care of the pain in most situations. However, if you want more immediate relief you can use anti-inflammatories; Motrin, Advil, that kind of thing. If you suspect maybe acid reflux is a problem then you can do a diagnostic test and that is just try Mylanta or Maalox. If it makes it better, then that's probably what the case is. And then you can decide whether you want to use it on a chronic basis or not. Additionally as I spoke about anxiety and stress, any of the offending factors you can remove will help to reduce the stress, reduce anxiety. If there's an alcohol consumption issue, reducing or removing that would be a great idea as well. And lastly and most importantly, don't forget if you're not sure call your doctor, call the advice nurse and they can help you with some of these as well.

**Dr. Hendler:** Kavin, thank you very much for being our guest on KP HealthCast and thanks for that interesting interview.

**Dr. Desai:** Well thank you.

**Dr. Hendler:** And thank you for joining us today. I'd also like to thank our listeners for taking the time to listen to our HealthCast today. And remember, if you would like to listen to any of our prior HealthCasts, please visit our website at [www.KPHealthcast.org](http://www.KPHealthcast.org). And if you have any comments or questions please e-mail us at [castmaster@KPHealthcast.org](mailto:castmaster@KPHealthcast.org). Thanks for listening.