

Study finds anxiety linked to chest pain in children

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(Medical Xpress)—Psychological factors can have as much—or more—impact on pediatric chest pain as physical ones, a University of Georgia study found recently. UGA psychologists discovered pediatric patients diagnosed with noncardiac chest pain have higher levels of anxiety and depression than patients diagnosed with innocent heart murmurs—the noise of normal turbulent blood flow in a structurally normal heart.

The UGA research was done in collaboration with Children's Healthcare of Atlanta and Emory University.

"The fact that these [psychological symptoms](#) are higher in noncardiac chest pain [patients](#) suggests the psychological symptoms may be playing a role in the presentation of chest pain," said Jennifer Lee, a doctoral candidate in the UGA Franklin College of Arts and Sciences and the study's lead author.

The results of the study, which were published Nov. 5 in the *Journal of Pediatric Psychology*, show a statistically significant increase in [anxiety and depression](#) among patients who are later diagnosed with noncardiac chest pain when compared to patients diagnosed with innocent heart murmurs. Lee said it is not clear if the anxiety is a cause of the pain or if pain caused the anxiety in the sample group.

"The higher levels weren't so high as to cause a [clinical diagnosis](#) on their own, but when you contrast the two groups, there were statistically

significant differences," said study co-author Ronald Blount, a [psychology professor](#) in the Franklin College.

The study included 129 patients ages 8 to 18. The group completed surveys prior to diagnosis. All patients were essentially in the same situation—sitting in a cardiology office awaiting their unknown [medical diagnosis](#).

"We are highlighting that psychology has a part in these symptoms," Blount said, "and screening for psychological, as well as medical factors, is one implication we foresee coming from this investigation."

Chest pain can indicate serious medical conditions that require a doctor's evaluation. In adults, pain in the chest is often linked to a cardiac problem. In children, however, less than 2 percent of patients receive a cardiac diagnosis for their pain.

The Sibley Heart Center at Children's Healthcare of Atlanta is one of the largest pediatric heart centers in the world, seeing an average of 2,500 new patients with acute chest pain each year.

"We know up front that 99 percent of these patients will not have a heart complication at all. The trick is, it is not zero, and I cannot miss the one patient with heart disease because the consequences could be catastrophic," said Dr. Robert Campbell, chief of the Sibley Heart Center and division director of the department of pediatrics at the Emory University School of Medicine.

The study also observed that noncardiac chest pain patients have a higher level of functional disability—or the inability to participate in everyday activities like making it through a day without a nap or running across a football field. They also spent less time at school and were less involved in extra-curricular activities.

"These kids also report greater levels of physical symptoms with unclear causes, like joint pain, stomach aches, head aches," Lee said. "These symptoms are believed to be psychological manifestations of stress. Sometimes your brain doesn't tell you that you are stressed out, but your body does, so you will experience symptoms like these."

Pediatric patients with noncardiac chest pain also reported higher [levels of anxiety](#) sensitivity, a fear of experiencing physical symptoms and additionally fearing that those symptoms are related to a catastrophic health issue.

"Psychological functioning is heavily related to pain," Blount said. "Pain is a sensory experience, but your attention to one thing or another and your emotions can impact your experience of pain. And how debilitating the pain is for you can be determined by psychological and social factors. That is what we were interested in looking at."

Previous studies have shown reducing emotional symptoms can lead to better coping ability with pain, Lee said. "A goal with these patients would be to create a clearer, more comprehensive picture of what is going on and determine a better way to help these kids and adolescents."

Campbell said the UGA research helps him serve the majority of his patients who leave his office with a clean bill of health but unexplained [chest pain](#).

"Most importantly what we've learned is that after a physical evaluation of the patient, we take the time to sit down with the family and find out what they are most worried about so we can address their psychological issues," Campbell said. "We've learned to pay attention and to be confident and reassuring. I need to make it clear to my patients and their parents that I'm not saying you are not having pain, but that the pain is not caused by your heart."

More information: The complete journal article is available online at [jpepsy.oxfordjournals.org/cont ... 5/jpepsy.jss111.full](https://jpepsy.oxfordjournals.org/cont...5/jpepsy.jss111.full)

Provided by University of Georgia

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