

# Chest pain, shortness of breath linked to long-term risk of heart trouble

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Chest pain and shortness of breath may offer distinct warnings of future

heart problems over 30 years' time, according to a new study.

Chest [pain](#) accounts for more than 6.5 million visits to U.S. emergency rooms each year. Yet little research has looked at what it might signify over the years to come, said the study's lead researcher, Dr. Kentaro Ejiri, a postdoctoral fellow at the Johns Hopkins Bloomberg School of Public Health in Baltimore. Similarly, he said, few studies have examined long-term implications of shortness of breath, called dyspnea.

Using three decades of data, Ejiri and his colleagues examined links between [chest](#) pain, shortness of breath and several cardiovascular problems. Chest pain and dyspnea were mainly linked to future [heart](#) attack, atrial fibrillation (a type of irregular heartbeat) and heart failure (when the heart doesn't pump well). Stroke was least associated with chest symptoms.

Chest pain was most strongly associated with a later heart attack, while dyspnea was most closely associated with future heart attack and heart failure. Having both symptoms appeared to increase risk even further.

The findings suggest the need to view both chest pain and dyspnea as warning signs of not just an immediate crisis but of possible long-term problems, said Dr. Kunihiro Matsushita, the study's senior author and a professor at Bloomberg School.

Even mild chest symptoms were linked to long-term risk of heart problems, although less so than with moderate to [severe symptoms](#).

The study will be presented Monday at the American Heart Association's Scientific Sessions conference being held in Chicago and virtually. The findings are considered preliminary until full results are published in a peer-reviewed journal.

The study involved more than 13,000 people with no previous cardiovascular disease who were taking part in the Atherosclerosis Risk in Communities, or ARIC, study. Their average age was 54; 56% were female, and 25% were Black.

After evaluating patients' records and using standard grading scales for chest pain and shortness of breath, the researchers assessed risks of heart attack, heart failure, atrial fibrillation and stroke over the coming decades. Researchers adjusted for factors such as age, sex, race, medications and smoking history, which could have affected the results.

Someone who experienced the lowest severity of chest pain had a 21% greater chance of having a heart attack over the next 30 years compared with someone reporting no chest pain. Those with the highest level of chest pain had an 83% higher heart attack risk compared with those without chest pain.

People who reported the lowest level of shortness of breath had a 30% higher chance of having a heart attack in the next 30 years compared with someone who reported no breathing problems. Those with the highest level of shortness of breath were more than twice as likely to have a heart attack.

Those with the highest levels of both chest pain and shortness of breath were more than 2 1/2 times as likely to have a heart attack than someone with no issues. They also were more than twice as likely to have [atrial fibrillation](#) or [heart failure](#), and 85% more likely to have a stroke.

Quin Denfeld, a nurse scientist at Oregon Health & Science University in Portland, said most people tend to think of symptoms like chest pain as something that happens right before a serious event, such as a heart attack. But Denfeld, who helped write a recent AHA scientific statement on cardiovascular disease symptoms, said the new study highlighted how

symptoms are not always so clear-cut: "They're nuanced, and they're complex."

Denfeld said the new research, which she was not involved with, stood out for taking such a long-term look at symptoms and how they overlapped. She said it would be helpful to see the results broken out by sex, and she said the grades used to evaluate symptoms are limited in how much they can reveal about overall [symptom](#) profiles.

The findings suggest [health care workers](#) should be diligent about tracking even mild symptoms, Denfeld said.

"Prognosticating over 30 years is extremely hard to do," she said. "But just recognizing and documenting symptoms, and telling patients 'this is something to pay attention to,' seems like an appropriate move."

Both [chest pain](#) and [shortness of breath](#) can signal a heart attack, and the AHA says people shouldn't hesitate to call 911 when those symptoms arise.

But even seemingly minor problems, such as being out of breath walking up a hill, warrant attention, Denfeld said. "It's your body's way of telling you, 'There's something going on.'"

It doesn't mean that something bad is inevitable, she said. But it might be a sign that it's time for a lifestyle change, such as exercising more.

"The bottom line is, patients should pay attention to their symptoms," she said.

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