

How are asthma and heart health linked?

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Although the heart and lungs are neighbors in your chest, people may think of them as separate entities with unrelated problems.

But a growing body of evidence suggests that asthma—one of the most common lung disorders—is a risk factor for cardiovascular disease.

Asthma is a serious chronic disease in which airways are inflamed, often in response to specific triggers. It affects about 25 million people in the U.S., including nearly 5 million children, causing millions of annual visits to doctors' offices and emergency rooms.

"We call these major changes in the airways the three S's: swelling, snot and squeezing," said Dr. Tyra Bryant-Stephens, a pediatrician at Children's Hospital of Philadelphia and medical director of its Community Asthma Prevention Program. "We try to control the swelling and the snot, which is mucus, because that's what causes the airways to be twitchy as they respond to certain irritants or allergens."

Several studies suggest people with asthma may face a higher risk for a variety of heart-related problems. One [analysis](#), published in the journal CHEST in 2020, followed participants for more than 35 years and found a link between asthma and an increased risk for cardiovascular disease, after adjusting for other factors.

A [2022 study](#) in the *Journal of the American Heart Association* showed that participants with persistent asthma had higher carotid plaque scores and higher levels of inflammatory biomarkers than people without asthma. A [carotid artery](#) runs along each side of the neck, and a high carotid plaque score is a strong predictor of clot-caused strokes and major cardiovascular events.

Dr. Nizar Jarjour, who co-authored the *JAHA* study, said many questions remain about the relationship between asthma and cardiovascular disease.

"If we're treating asthma and improving [asthma symptoms](#), what happens to cardiovascular health? What happens to brain health? Do they improve? Or don't they?" said Jarjour, a pulmonologist and chief of Allergy, Pulmonary and Critical Care Medicine at the University of

Wisconsin in Madison.

Scientists do know that asthma and cardiovascular disease share a common bond: inflammation. The lungs add oxygen to blood, which the heart then pumps to the rest of the body. It's possible, Jarjour said, that inflammation in the lungs "gets carried by the blood and spills over to the rest of the body and (impacts) brain health and cardiovascular health."

Chronic inflammation of the airways over time can damage blood vessels and lead to hypertension, Bryant-Stephens said. In addition, this inflammation has been associated with plaque buildup in the arteries, which can result in a heart attack or stroke, she said.

Many people with asthma find relief from medicine delivered through an inhaler or in tablet form. Those with persistent asthma typically use daily medications to control the symptoms and prevent asthma attacks. But, some have questioned whether the medications can influence asthma's negative impact on cardiovascular health.

"That's the million-dollar question," Jarjour said. "The problem is that you cannot ethically conduct studies where patients have [persistent asthma](#) and who are not being treated with proper medications."

Like many health problems, including cardiovascular disease, asthma does not affect everyone equally. A [2020 report](#) from the Asthma and Allergy Foundation of America said multiple studies show the burden of asthma falls disproportionately on Black, Hispanic, American Indian and Alaska Native people.

"It's a significant health disparity that really needs to be addressed," Jarjour said. "And it's hard to disentangle the various aspects of these disparities because multiple ([risk factors](#)) come with socioeconomic

disadvantages, like poverty, poor nutrition, stress or living close to a highway or having a job that exposes you to pollution."

Medical professionals who treat asthma patients advise them to avoid external triggers, which include pollens, molds, dust, mice and cockroaches, as well as air pollution sources, such as smog, ozone and smoke from charcoal grills, wood fires and cigarettes.

Weather can also worsen asthma, especially if you exert yourself outdoors when it's too hot or too cold, or the air is especially humid or dry, Jarjour said.

"Our bodies are used to conditioning the air we breathe to the normal body temperature of 98.6 degrees and a proper humidity level," he said. "If you move away from this too much in one direction or another, you put added stress on the bronchial tubes, which can stimulate constriction."

Climate change could make asthma and [cardiovascular disease](#) worse. A [2023 study](#) in the AHA journal *Circulation* said cardiovascular deaths from extreme heat in the U.S. could double by 2050.

While few studies have looked at global warming's potential impact on asthma, Bryant-Stephens said an increase in hot, humid days will definitely impact breathing and lengthen the pollen season, "so we will see an increase in the number of acute respiratory events."

Even though there's no cure for asthma, it can be controlled. "It's exciting to see how much better we are at controlling symptoms than we were 30 years ago," she said.

However, it's impossible to control asthma if you don't know you have it, Bryant-Stephens said.

"I hear parents and grandparents all the time say, "Oh, I don't have asthma. I have bronchitis." And when I ask them about their symptoms over the course of their life, it is asthma," she said. "If you're suffering from recurrent coughing, especially if it seems triggered by weather changes, my advice is to ask your doctor to actually test you for asthma."

Bryant-Stephens also said it's essential for adults to control their asthma even if they're dealing with other major health problems.

"When people are focusing on heart disease, asthma kind of gets dropped by the wayside," she said. "But it's important to make sure your asthma is fine-tuned and managed as closely as possible, because that will put less stress on your heart from a breathing perspective."

Provided by American Heart Association

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