

# Recent asthma may be linked with abdominal aneurysm rupture

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Patients aged 50 and older with recent asthma activity were significantly more likely than non-asthmatics to experience abdominal aortic aneurysm rupture and sudden death, according to new research published in *Arteriosclerosis, Thrombosis and Vascular Biology*, an American Heart Association journal.

The main artery in the body, called the aorta, carries blood to the whole body. When this vessel becomes weakened it can form a balloon-like bulge that may rupture and if left untreated can cause [sudden death](#). Abdominal [aortic aneurysm](#) has a greater risk of occurring in older men who have other risk factors such as smoking, [high blood pressure](#), high cholesterol, obesity and the smoking-related lung disease emphysema. Although surgical repair of aortic aneurysms can help prevent rupture and reduce death, researchers say it is important to find signs of increased risk, before this medical emergency occurs.

"Older patients, especially men, with a recent asthma diagnosis should be checked for signs of aortic aneurysm," said Guo-Ping Shi, ScD., study lead author and biochemist at Brigham and Women's Hospital and Harvard Medical School in Boston, Massachusetts. "In addition, patients with a diagnosed aneurysm who later develop asthma should also be monitored for changes in the size and strength of the aorta."

In an earlier laboratory study done in mice, Shi's team found a link between asthma and aneurysm. Mice with allergic asthma developed twice as large aortic aneurysms as the control mice. To see if this

relationship also occurred in people, they examined thousands of medical records from two studies in Denmark - one with 15,942 abdominal aortic aneurysm patients age 50 and older and the other from a study of 18,749 men age 65 to 74 with and without [abdominal aortic aneurysms](#).

They found:

- Patients with abdominal aortic aneurysm and with diagnosed asthma within the past year had more than 50 percent greater risk of ruptured aneurysms than those without asthma.
- Those diagnosed with asthma within the past 6 months were twice as likely as non-asthmatics to experience aortic aneurysm rupture.
- Those who had recorded uses of anti-asthmatic medication within the last 6 months also showed nearly 40 percent greater risk for ruptured aortic aneurysms than those without such treatments.
- In addition, patients who had recently used inhaler medication for asthma had about a 45 percent greater risk of having abdominal aortic aneurysm than other patients without records of anti-asthmatic medication.

While more research is necessary to understand the link between [asthma](#) and aortic aneurysm, it may have to do with a specific inflammation-related protein called IgE, or immunoglobulin E, that the body makes in response to allergens.

"IgE is one of the main players," Shi said. "Our study suggests that asthmatic [patients](#) have higher levels of IgE, which can activate many cells, including inflammatory cells and vascular cells that promote aneurysm and cause aortic rupture."

Provided by American Heart Association

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