

Q and A: How a heart condition affects the kidneys and causes swelling

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I recently began experiencing swelling in my legs, feet and hands, as well as fatigue. Testing led to a diagnosis of pericardial constriction. Can you explain what this is and how it's treated? Is there anything I can do to

reduce the swelling?

ANSWER: Pericardial constriction is a condition with multiple possible causes. It can be due to underlying [medical conditions](#) and may even result from certain [medical treatments](#). Swelling, or edema, is one of the most common symptoms of pericardial constriction because the condition alters how the heart pumps blood to the kidneys and interferes with your kidneys' ability to work properly. Medication often effectively reduces swelling. Rarely, surgery may be needed to remove the pericardium.

The normal pericardium is a thin sac surrounding the heart. Under normal circumstances, it contains a small amount of fluid that helps lubricate the heart as it moves. When the pericardial sac becomes thick and stiff, it constrains the heart, altering how it pumps blood. We call this condition pericardial constriction. Pericardial constriction restricts the heart's motion and makes it harder for the heart to pump blood effectively by limiting how much blood can fill the heart between beats, making the heart less efficient and causing a backup of blood in the veins. When less blood than usual enters the heart, less blood leaves the heart to the rest of the body.

Pericardial constriction can have a significant effect on your kidneys because one of the kidneys' jobs is to remove excess fluid from the blood. Low blood flow from the heart makes it hard for your kidneys to remove the extra fluid. The kidneys also may respond to low blood flow by retaining more fluid in an attempt to increase the available blood flow.

As fluid builds up in the [blood](#), it results in swelling, a condition sometimes referred to as edema or anasarca. Left untreated, that swelling can become severe, especially in certain areas of the body, including the legs and abdomen. Other common symptoms of pericardial constriction

include fatigue, shortness of breath, and difficulty exercising or engaging in other physical activities.

Pericardial constriction can happen for a number of reasons. Viral infections leading to inflammation of the pericardium are one of the more common causes of pericardial constriction. It also can develop as a side effect of radiation therapy or [heart surgery](#). Less common causes include connective tissue diseases, cancer and complications from other types of infections. Taking certain kinds of drugs can trigger pericardial constriction, although that is rare. In some cases, the cause cannot be found, a condition known as idiopathic pericardial constriction.

Health care professionals diagnose pericardial constriction by reviewing your medical history and performing a [physical exam](#). Imaging exams of the [heart](#), such as an echocardiogram, chest X-ray, CT scan and cardiac MRI, as well as other testing, often can be helpful in diagnosing this condition.

Treatment of pericardial constriction typically focuses on controlling the symptoms and any active inflammation of the pericardium. That often involves using diuretic medications to remove excess fluid from the body and anti-inflammatory medicines to reduce inflammation of the pericardium. Anti-inflammatory medicines useful for pericardial constriction include colchicine, nonsteroidal anti-inflammatory drugs, and occasionally steroids or medicines that affect the body's immune system.

If swelling persists even when you're taking medication for it, talk to your health care team. You may need to switch to a different type of medication. If symptoms don't improve over time with other treatments, then surgery to remove the pericardium, called pericardiectomy, may be necessary. Few people with pericardial constriction require this procedure, however. In most cases, the symptoms, including swelling,

can be successfully managed with medication.

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