



MEDICAL  
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Diplomates American Board of Internal Medicine & Cardiovascular Diseases  
A medical practice dedicated to the prevention, diagnosis, and treatment of heart disease.

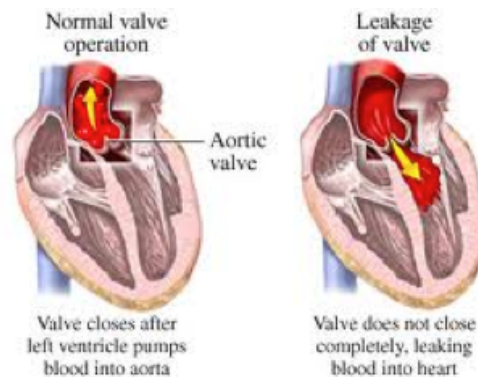
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## Aortic regurgitation

Aortic regurgitation is leakage from the aortic valve. This valve separates the aorta, the largest blood vessel from the left ventricle, the heart's primary pumping chamber. The aorta receives blood from the heart and distributes it to the body. Regurgitation means that the valve does not close well and that blood flows backwards through it. When this happens, the left ventricle pumps more blood than normal.

The heart has to work harder to pump blood to the body, since part of the blood flows backward through the valve when the heart rests instead of continuing to flow forward through the aorta to the body's organs and tissues. Over time, the extra effort that the heart must make can lead to it being enlarged, which finally causes [heart failure](#) (a condition in which the heart muscle weakens and does not pump very well). Some patients with mild regurgitation never have symptoms or problems related to the heart valve leakage. Patients with serious leakages may have symptoms that appear suddenly and worsen very quickly.



Most people with aortic regurgitation have no symptoms. As the heart muscle weakens, symptoms begin to appear. The most common symptoms are: fatigue, shortness of breath, especially when doing exercise or vigorous activities, and swelling of the feet and ankles (edema). Some patients develop [angina pectoris](#), which is chest pain that occurs when the heart muscle does not receive enough oxygen. [Arrhythmia](#) may also appear, that is, an irregular heart rate, which occurs when the heart muscle weakens on account of the chronic leakage from the aortic valve.

Aortic regurgitation occurs when there is an abnormality in the aortic valve. This abnormality may be congenital (you are born with it) or acquired (occurring as the result of a disease). A bicuspid aortic valve is the most common congenital cause of aortic regurgitation. This case appears when the aortic valve has only two valve cusps (parts) instead of three, which is what is normal. Valves with only two cusps tend to have more leaks due to their shape.

The aortic valve may be affected by infections such as rheumatic fever, which is caused by the bacteria that causes strep throat or pharyngitis. Other bacteria or infectious organisms can also infect the aortic valve ([infectious endocarditis](#)), damaging it and making it leak. High blood pressure can make the aorta stretch or dilate over time and, when this happens, the valve no longer closes tightly. Some people may have calcium deposits as they age, which makes it become more rigid. When this happens, the valve no longer closes tightly and leaks.

Aortic regurgitation often causes a heart murmur, an extra sound that the doctor can hear upon examining you. There is a test called [echocardiogram](#), in which images are taken of the heart using sound waves. It is used to confirm the diagnosis and to determine how severe the aortic valve leakage is.



Depending on the severity of the leakage, a medication may be used to delay the progression of the damage to the heart muscle. Medications may also be used to treat the symptoms of shortness of breath and to reduce swelling. Patients with aortic regurgitation or any other damage in a heart valve run the risk of the damaged valve becoming infected ([endocarditis](#)). This risk increases during procedures in which bacteria can enter the blood stream and adhere to the valve, which in turn can make the valve become infected. Dental procedures (including a professional dental cleaning) and certain surgical procedures may introduce bacteria into the blood ([click here](#) for more information on dental prophylaxis).

However, recent guidelines suggest that for most patients with damaged heart valves, there is no conclusive evidence that there is a lower risk of infection if they routinely take antibiotics before having any of these procedures performed. Rather, it appears most important to have good general dental hygiene and to see your dentist regularly ([click here](#) for more information).

Your doctor must check your heart periodically and ask you if any change in your symptoms has occurred. Often echocardiograms are done to monitor whether the valve leakage has worsened or has lead to worsening heart function. Once the valve leakage reaches a critical degree, surgical treatment is indicated. In rare cases, the valve can be repaired, but usually it is necessary to use an artificial valve to replace the leaking one.

Often, there are signs that indicate the need for surgical replacement of a leaking aortic valve before the patient has obvious symptoms. In fact, perhaps the greatest challenge in determining when to surgically replace the valve ideally is before symptoms or heart failure occur. This is because often the damage to the heart is not reversible after surgery.

Patients with mild aortic regurgitation who have little or no symptoms still need to go to the doctor regularly. If the problem gets worse, medications may be used. These medications may help regulate the heart rhythm, eliminate liquid from the body to control edema and/or help the heart ventricle pump more efficiently.

[Click here](#) for more information on heart valve disease.

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