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Aortic Stenosis

When the valve out of the heart stiffens and narrows. How it's measured, which symptoms to report and when a new valve makes sense.

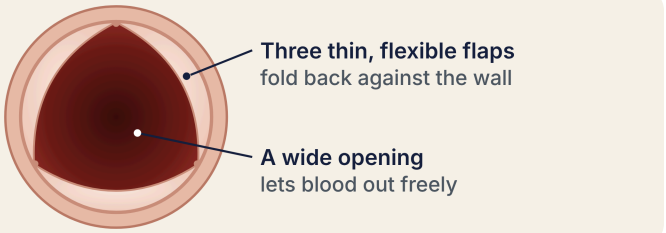
About 1 in 8
people over 75 have it, the most common valve problem in adults

100,000+
times a day the aortic valve opens and closes

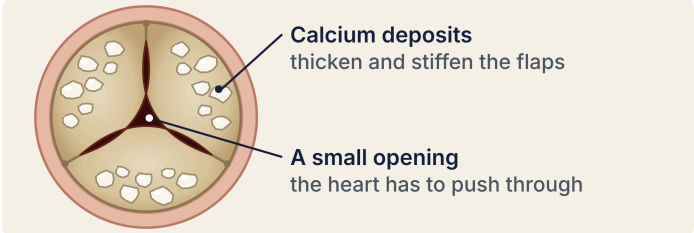
Up to 50%
die within a year or two of symptoms from severe narrowing, untreated

WHAT HAPPENS TO THE VALVE

Calcium stiffens the flaps



Healthy: three thin flaps open wide



Aortic stenosis: stiff flaps open only partway

The aortic valve is the one-way door from the heart's main pumping chamber into the aorta, the body's largest artery. Seen from above, its three flaps should swing wide with each beat. In the most common form, calcium builds up on them over many years, the way mineral deposits build up on an old faucet, and it usually becomes a problem in a person's 70s or 80s. A valve born with two flaps (a bicuspid valve) narrows a few decades sooner, sometimes in the 50s or 60s.

THE WARNING SIGNS

Symptoms tend to show up late

Shortness of breath
Usually with exertion at first, such as getting winded on a hill or a flight of stairs that never bothered you.

Chest pain or pressure
With activity, sometimes felt as tightness or squeezing.

Lightheadedness or fainting
Especially during exertion. If you've passed out, call 911. If you've come close, don't wait to call.

For years, often a decade or more, the heart muscle thickens to push harder and you may feel completely fine. Symptoms usually arrive once the narrowing is severe. Without a new valve, people with severe narrowing and symptoms face a steep drop in survival. Replacing the valve at that point restores survival close to normal.

Report it early

Call 911 for fainting, chest pain or sudden severe breathlessness. Tell your cardiologist about new breathlessness, chest discomfort or lightheadedness right away, because the risk comes from waiting.

TRACKING AND TREATING IT

How it's measured and when to replace the valve

Mild	Moderate	Severe	Very severe
Early narrowing	**Tighter, not yet severe**	**Speed 4 m/s or more**	**Speed 5 m/s or more**
Echo every 3 to 5 years	Echo every 1 to 2 years	Echo every 6 to 12 months, even without symptoms	Echo every 6 to 12 months. That speed alone is a reason to consider a new valve

An echocardiogram, a painless ultrasound with no radiation, grades the narrowing with three numbers. Peak velocity is how fast blood jets through the opening, like water from a garden hose with your thumb over the end. Mean gradient is the average pressure gap across the valve, and valve area is the size of the opening itself. Severe means a speed of 4 meters per second or more or a gap of 40 mm Hg or more, usually with an area of 1.0 square centimeter or less. The area alone isn't enough.

WHEN A NEW VALVE IS RECOMMENDED

Severe narrowing with symptoms	The strongest reason. Breathlessness, chest pain or fainting with a severely narrowed valve means replacement is recommended, and waiting is rarely advised.
A weakening pump	With severe narrowing, an ejection fraction (the share of blood the heart squeezes out with each beat) below 50%, even without symptoms.
Heart surgery for another reason	If you're already having heart surgery, such as bypass, and the valve is severely narrowed, it makes sense to fix both at once.
Sometimes earlier, without symptoms	Very severe narrowing, a valve narrowing fast year over year, a markedly high BNP (a blood marker of heart strain), or an exercise test that brings on symptoms or a blood pressure that fails to rise. The upside of acting early is weighed against your surgical risk.

TWO WAYS TO GET A NEW VALVE

TAVR, through a catheter	A new valve is threaded up through an artery, usually in the groin, and opened inside the old one, without opening the chest. Most people stay a day or two and are back to normal activity in a week or two. Lower risk of dying in the first month, less bleeding and less atrial fibrillation afterward.
Surgery (SAVR)	Open-heart surgery to remove the old valve and sew in a new one, with a longer recovery. Less leaking around the valve, a pacemaker afterward in about 6% versus about 15% with TAVR, and tissue valves that often last more than 20 years.
Matching the procedure to you	Surgery is generally recommended under 65 or with a long life expectancy ahead. From 65 to 80, either is reasonable, based on your anatomy, health and preferences. Over 80, or with a shorter life expectancy, TAVR is usually preferred, and at high surgical risk it is the choice at any age.

DAY TO DAY

Exercise	With mild to moderate narrowing, regular exercise is encouraged. With severe narrowing, ask for specific guidance and avoid all-out exertion until the valve is fixed.

IS THERE A PILL FOR IT?

No medication has been shown to slow aortic stenosis, statins included. Treating blood pressure, cholesterol and other risk factors still protects your arteries and heart muscle, and makes you a stronger candidate if you need a procedure.

READ THE FULL ARTICLE

damianrasch.com/aortic-stenosis

For education only, and not a substitute for advice from your own physician. Sources include the 2020 ACC/AHA valvular heart disease guideline, Otto, Newby and Hillis (JAMA 2024), Lindman et al. (Nature Reviews Disease Primers 2016) and the 2016 Cochrane review of statins for aortic stenosis.

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