

Heart valve disease

Section 1 of 6: The basics

Understand heart valve disease, symptoms, testing, repair, replacement, and ongoing care.

What should I do now?

Call 911

Call 911 for chest pressure, severe trouble breathing, or fainting. Do not drive yourself.

Contact your care team

Contact your care team promptly for increasing breathlessness, swelling, reduced activity, new palpitations, dizziness, or near-fainting.

Keep your care plan

Keep your treatment and follow-up plan. Bring questions, readings, and your medication list.

SECTION 1

What is heart valve disease?

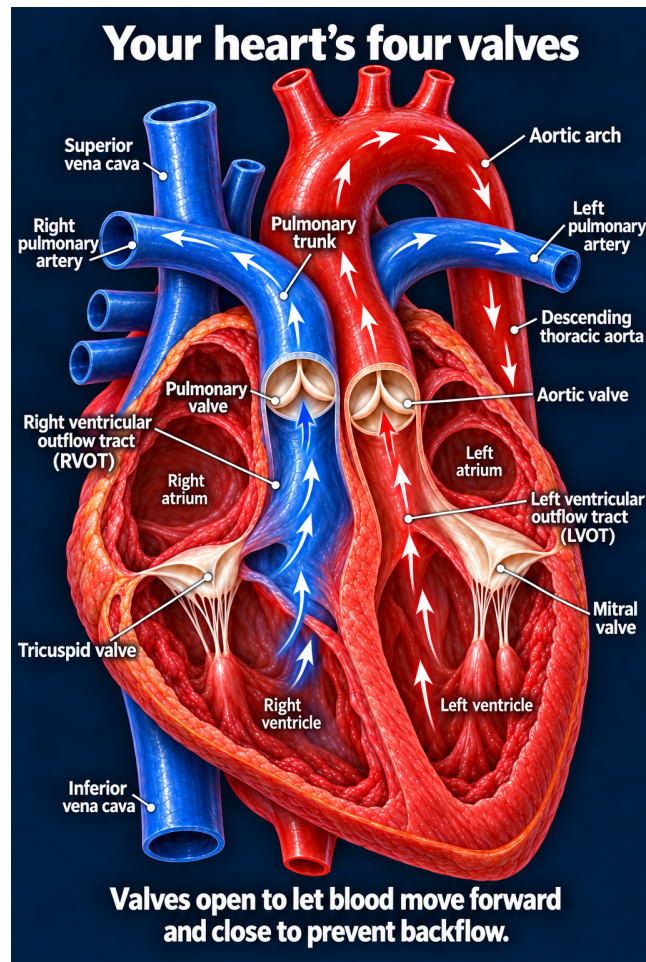
Your heart has four valves that act like one-way doors. They open to allow blood to move forward and close to prevent it from flowing backward. Heart valve disease occurs when one or more valves do not work properly.

How do normal heart valves work?

The four valves guide blood through your heart, toward your lungs, and out to your body.

Valve	Where blood flows
Tricuspid	From the right atrium into the right ventricle
Pulmonary	From the right ventricle toward the lungs
Mitral	From the left atrium into the left ventricle
Aortic	From the left ventricle into the aorta, which carries blood to the body

When these valves open and close normally, blood moves in the correct direction with each heartbeat.



The right ventricle sends blood through the RVOT and pulmonary valve toward the lungs. The left ventricle sends blood through the LVOT and aortic valve into the aorta and toward the body.

What can go wrong?

Two common problems are narrowing and leakage. A valve can sometimes have both.

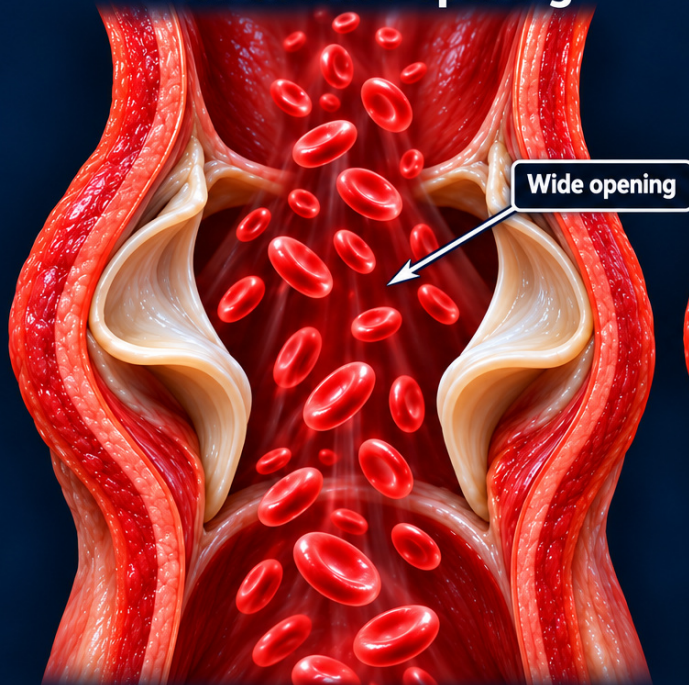
Stenosis: a valve that does not open fully

A narrowed valve limits the opening through which blood can pass. The heart may need to work harder to push blood through it.

For example, aortic stenosis makes it harder for blood to leave the left ventricle and reach the body.

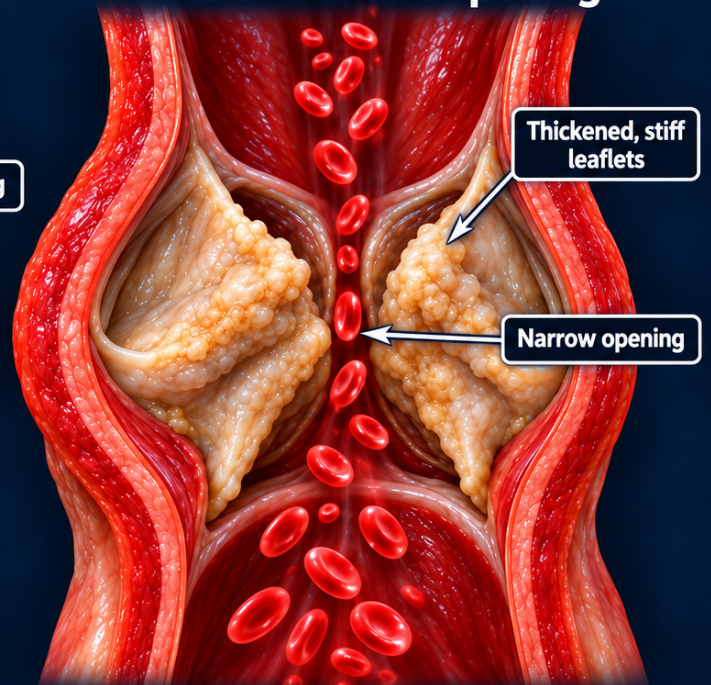
Normal valve vs. narrowed valve

Normal valve opening



The valve opens fully so blood can move forward easily.

Stenosed valve opening



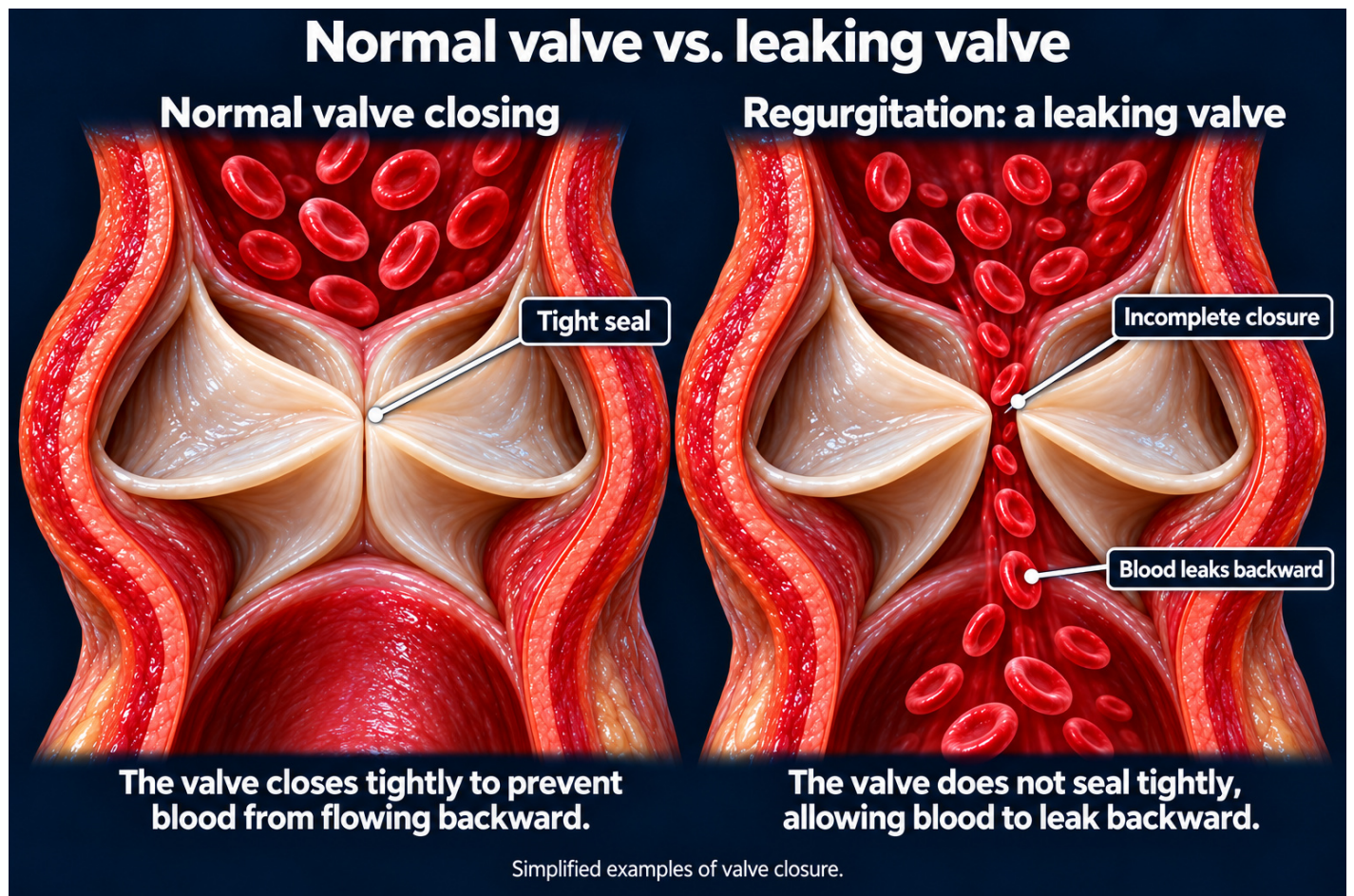
The valve cannot open fully, restricting blood flow.

A normal valve opens widely. A stenosed valve has a smaller opening that restricts forward blood flow. Red blood cells are enlarged for illustration.

Regurgitation: a valve that leaks

A leaking valve does not close tightly, allowing some blood to flow backward.

For example, mitral regurgitation allows blood to leak from the left ventricle back into the left atrium when the heart squeezes.



A normal valve forms a tight seal. A regurgitant valve allows backward leakage. This simplified valve example illustrates leakage; red blood cells are enlarged for teaching.

Which valve problems might I hear about?

Your diagnosis usually identifies the valve affected and the problem it has:

- Aortic stenosis: A narrowed aortic valve.
- Aortic regurgitation: A leaking aortic valve.
- Mitral regurgitation: A leaking mitral valve.
- Mitral stenosis: A narrowed mitral valve.
- Tricuspid regurgitation: A leaking tricuspid valve.

The pulmonary valve can also become narrowed or leaky. More than one valve may be affected.

Why does valve disease develop?

Some people are born with an abnormal valve. Others develop valve problems later because of calcium buildup, changes in valve tissue, infection, or other heart conditions.

For example, a bicuspid aortic valve has two flaps instead of the usual three. It may work well for years but can become narrowed or leaky over time. Enlargement of the heart can also prevent certain valves from closing properly.

How serious is heart valve disease?

Valve disease can range from mild to severe. Some mild problems remain stable and only need monitoring. More significant problems can place extra strain on the heart and eventually contribute to heart failure.

You can have important valve disease even without obvious symptoms. Your cardiologist considers the valve's severity, your symptoms, and its effect on your heart to decide when treatment is needed. Not everyone needs a procedure, but regular follow-up helps identify changes before lasting damage occurs.

Heart valve disease

Section 2 of 6: Symptoms

Understand heart valve disease, symptoms, testing, repair, replacement, and ongoing care.

SECTION 2

What symptoms might I feel?

Valve disease symptoms can develop slowly. You might notice that activities become harder, or you may have no symptoms at all. Do not assume a change in stamina is simply part of getting older.

Common symptoms

- Shortness of breath: With walking, stairs, or other activities; sometimes when lying flat.
- Fatigue or reduced stamina: Needing more rest or struggling with activities you previously handled easily.
- Chest discomfort: Pressure, tightness, or pain, especially with activity.
- Dizziness or fainting: Feeling lightheaded or losing consciousness.
- Swelling: In the ankles, feet, legs, or abdomen.
- Palpitations: A racing, pounding, fluttering, or irregular heartbeat.

Can I have significant valve disease without symptoms?

Yes. How you feel does not always tell us how severe the valve problem is. Keep your scheduled visits and echocardiograms even when you feel well.

When should I contact my care team?

Report new or worsening breathlessness, swelling, chest discomfort, dizziness, or difficulty with usual activities promptly.

When is it an emergency?

Call 911 for severe or persistent chest pain, sudden severe breathing difficulty, or fainting with ongoing symptoms. Do not drive yourself.

These symptoms can have several causes. Your care team will determine whether a valve problem is responsible.

Heart valve disease

Section 3 of 6: Diagnosis

Understand heart valve disease, symptoms, testing, repair, replacement, and ongoing care.

SECTION 3

How is heart valve disease diagnosed?

Your doctor reviews your symptoms and medical history, examines you, and uses imaging to assess your valves.

Listening to your heart

A stethoscope may detect a heart murmur - an extra sound caused by blood flow. A murmur may suggest a valve problem, but imaging helps determine its cause and significance.

Echocardiogram: the main test

An echocardiogram, or “echo,” uses ultrasound to create moving pictures of your heart. During a standard echo, a sonographer places a probe on your chest, often while you lie on your left side.



An echocardiogram looks at your heart's structure and function. The probe rests on your chest and uses sound waves to create moving pictures of your heart.

The echo helps your doctor determine:

- Which valve is affected.
- Whether it is narrowed, leaking, or both.
- How severe the problem is.
- How well your heart pumps and whether its chambers have enlarged.

Doppler ultrasound measures blood flow through the valves and helps assess narrowing and leakage.

When are other tests needed?

Not everyone needs additional testing. Depending on the question, your doctor may recommend:

- Transesophageal echo (TEE): An ultrasound probe in the esophagus, behind the heart, provides closer valve views. Your team explains preparation and sedation.
- Cardiac CT: Detailed pictures of the valve, aorta, and surrounding structures, often used to plan a valve procedure.
- Cardiac MRI: Additional assessment of blood flow, leakage, and heart function.
- Supervised exercise testing: In selected patients, to evaluate symptoms during activity.
- Cardiac catheterization: In selected patients, to assess pressures or coronary arteries.

What does “mild, moderate, or severe” mean?

These terms describe the degree of narrowing or leakage. Your doctor combines measurements with symptoms and effects on your heart to guide care.

A normal EKG does not rule out valve disease. An EKG measures electrical activity; an echo evaluates valve structure and blood flow.

Heart valve disease

Section 4 of 6: Treatment options

Understand heart valve disease, symptoms, testing, repair, replacement, and ongoing care.

SECTION 4

How is heart valve disease treated?

Treatment depends on which valve is affected, how severe the problem is, your symptoms, and how the valve is affecting your heart. Some patients need monitoring, while others benefit from valve repair or replacement.

1. Monitoring your valve

Mild valve disease often does not require a procedure. Your cardiologist may recommend regular visits and repeat echocardiograms to watch for changes.

Even if you feel well, keep your follow-up appointments. Significant valve disease can sometimes require treatment before symptoms appear or lasting heart damage develops.

2. Medications to manage symptoms and support the heart

Depending on your condition, medications may help:

- Remove extra fluid: Diuretics, or “water pills,” can reduce swelling and breathlessness.
- Control blood pressure: This can reduce the workload on your heart.
- Treat heart failure or abnormal rhythms: When these occur alongside valve disease.

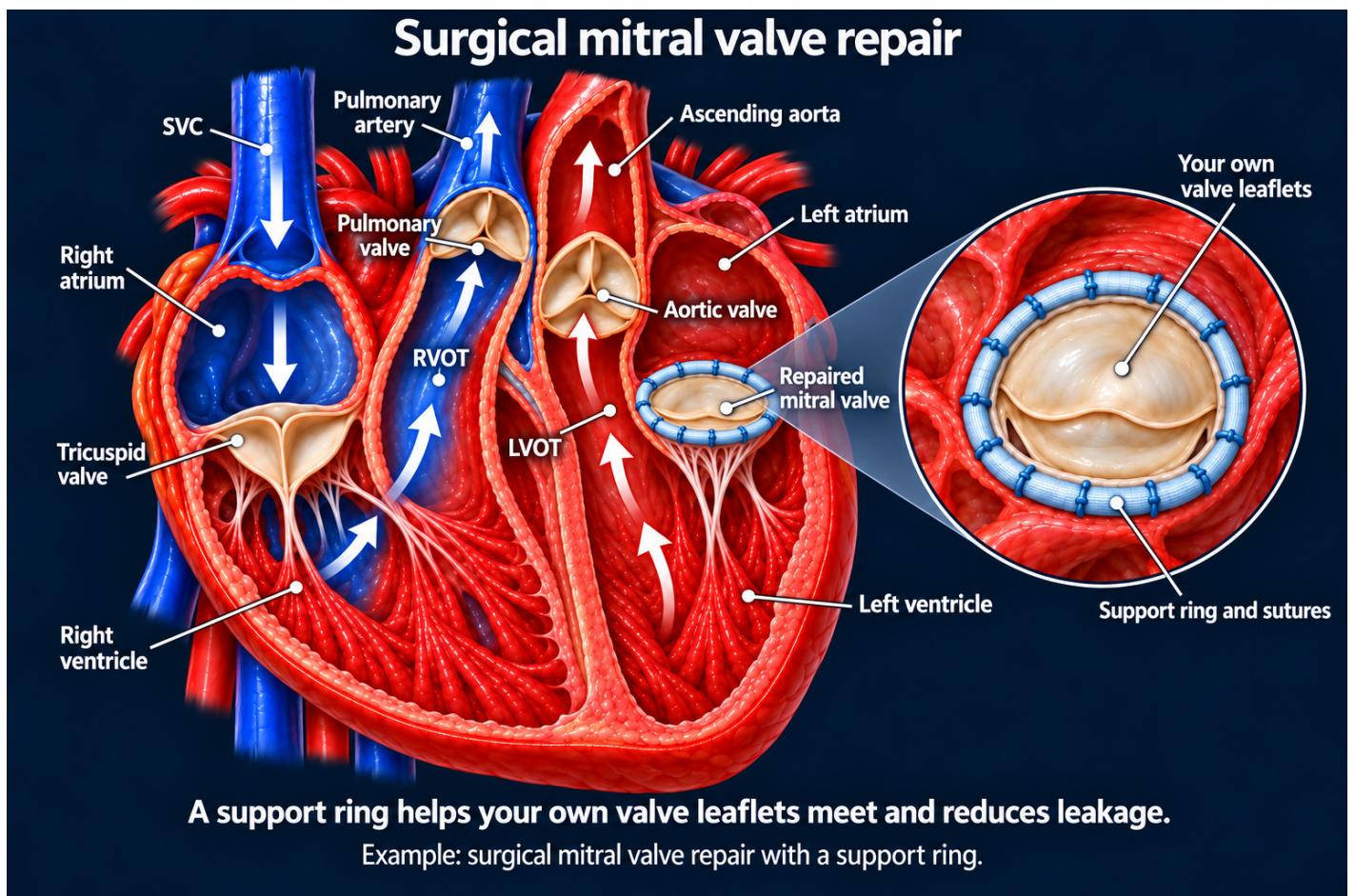
- Prevent blood clots: Blood thinners are needed for certain conditions, rather than for every valve problem.

Medications generally do not open a calcified, narrowed valve or repair damaged valve leaflets. They help manage the effects of valve disease. Treating heart failure can sometimes reduce leakage caused by enlargement of the heart.

3. Repairing a valve

When possible, repair helps your existing valve work better.

A surgeon may reshape valve tissue, repair supporting cords, or place a ring around the valve to help its leaflets meet properly.



Example: surgical mitral valve repair. A support ring is sewn around the valve to help its own leaflets meet and reduce leakage. The LVOT remains the pathway from the left ventricle through the aortic valve.

Catheter-based repair

For selected patients with significant leakage, a catheter-based repair may be an option. One approach, called transcatheter edge-to-edge repair (TEER), uses a small clip to bring valve leaflets together and reduce leakage. This can be used for selected mitral valve problems; catheter-based treatments are also available for selected tricuspid valve problems.

The best repair depends on the valve's anatomy and the cause of the leakage.

4. Replacing a valve

If a valve cannot be repaired effectively, it may need replacement.

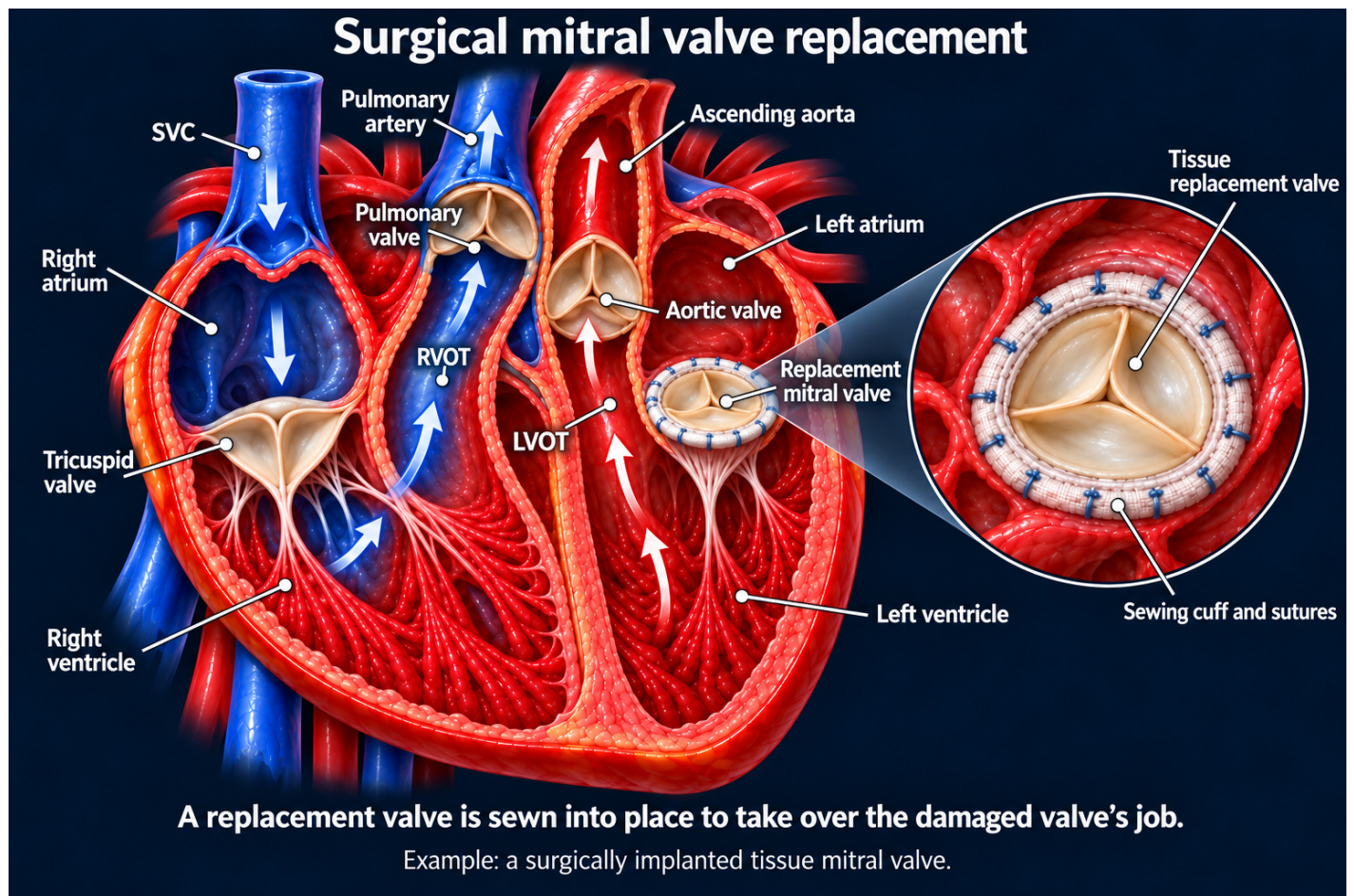
Surgical valve replacement

A surgeon removes the diseased valve and replaces it with a new valve. Surgery may be especially helpful when another heart operation is also needed.

Two main replacement types are:

- **Mechanical valves:** Durable artificial valves that require lifelong warfarin to prevent clots.
- **Tissue valves:** Made from biological tissue. They can wear out over time and usually do not require lifelong blood thinners solely because of the valve. Another condition, such as AFib, may still require anticoagulation.

Your team helps you choose based on your age, preferences, bleeding risk, and future treatment needs.



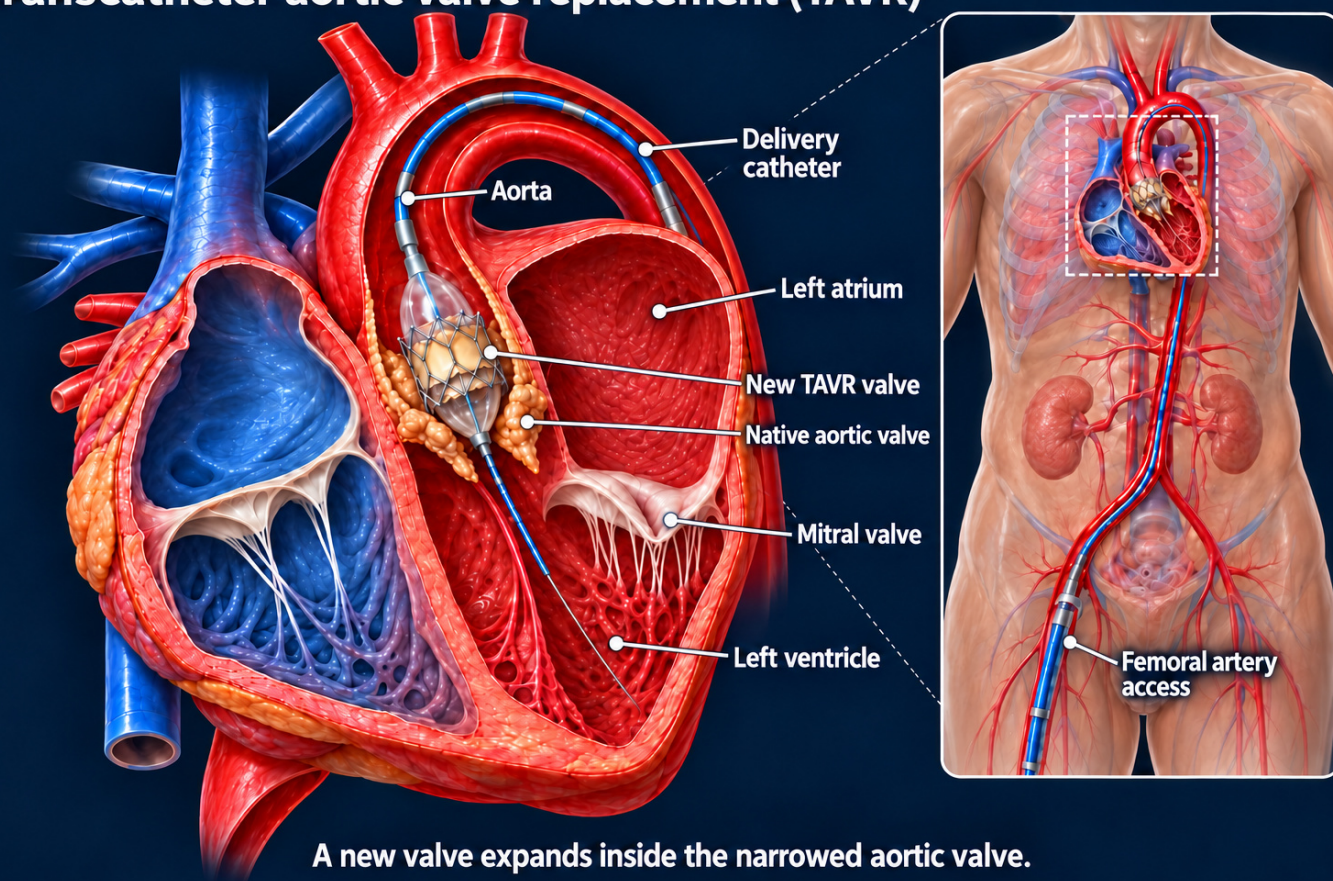
Example: surgical tissue mitral valve replacement. The replacement valve is sewn into place to take over the damaged valve's job. The close-up shows the tissue leaflets, sewing cuff, and sutures.

Transcatheter aortic valve replacement (TAVR)

For many patients with severe aortic stenosis, TAVR is an alternative to surgical replacement.

A catheter carries a new tissue valve to the heart, usually through an artery in the groin. The new valve expands inside the diseased aortic valve, allowing blood to move forward through the replacement valve.

Transcatheter aortic valve replacement (TAVR)



A new valve expands inside the narrowed aortic valve.

Example: TAVR through an artery in the groin. The catheter travels up the aorta and delivers a new tissue valve inside the narrowed native aortic valve.

TAVR and surgery each have benefits and risks. Your valve team considers your anatomy, overall health, age, and expected valve durability when recommending an approach.

How do we decide when treatment is needed?

The decision considers more than symptoms alone. Your team reviews the severity of the valve problem, heart size and pumping function, changes over time, and the expected benefit of treatment.

The goal is to treat the valve at the right time - before it causes lasting damage to your heart. A consultation with a specialized valve team can help determine the best procedure and timing.

Heart valve disease

Section 5 of 6: Living with your condition

Understand heart valve disease, symptoms, testing, repair, replacement, and ongoing care.

SECTION 5

Living well with heart valve disease

Heart valve disease can change over time, even when you feel well. Regular care with your cardiologist helps identify changes and determine when treatment is needed.

Keep your follow-up appointments

Your cardiologist will recommend how often you need visits and echocardiograms based on your valve problem and its severity. Follow-up remains important after valve repair, replacement, or TAVR.

Pay attention to changes

Tell your care team if you notice:

- Increasing shortness of breath or fatigue.
- Difficulty doing activities that used to feel easy.
- New swelling in your legs or feet.
- Dizziness, near-fainting, or fainting.
- New chest discomfort or palpitations.

Do not assume these changes are simply part of getting older.

Stay active within your limits

Ask your cardiologist which activities are appropriate for you. Some patients can exercise normally, while others need restrictions until their valve is treated. After a procedure, ask whether cardiac rehabilitation would help your recovery.

Take medications as prescribed

Continue your medications and discuss side effects with your care team. If you take a blood thinner, do not stop it without instructions. Mechanical heart valves require lifelong warfarin and regular blood testing.

Protect your dental health

Brush, floss, and keep regular dental appointments. Tell your dentist about your valve condition and any valve procedure you have had.

Patients with replacement valves - including TAVR - or certain valve repair materials need antibiotics before some dental procedures. Your cardiologist and dentist will help determine what you need.

Know when to get urgent help

Call 911 for severe or persistent chest pain, severe sudden shortness of breath, or fainting with ongoing symptoms. Do not drive yourself.

Contact your care team promptly for unexplained fever, particularly if you have a repaired or replaced valve.

Heart valve disease

Section 6 of 6: Your next steps

Understand heart valve disease, symptoms, testing, repair, replacement, and ongoing care.

SECTION 6

Your next steps

Know which valve is affected, how serious the problem is, and what your follow-up plan should be. Not every valve problem needs a procedure, but every patient should understand their plan.

Questions to ask your cardiologist

- Which valve is affected? Is it narrowed, leaking, or both?
- Is my valve disease mild, moderate, or severe?
- Is it affecting my heart's size or pumping strength?
- When should I have my next visit and echocardiogram?
- Which symptoms should prompt an earlier appointment?
- Are there any limits on exercise?
- Would I benefit from seeing a specialized valve team?
- If treatment is needed, would repair, surgical replacement, or a catheter-based procedure be best for me?
- Do I need a blood thinner or antibiotics before dental work?

Prepare for your appointment

Bring an updated medication list and any heart testing performed outside your cardiologist's office. Write down changes in your breathing, energy, swelling, or ability to exercise - including when they started.

If a procedure is recommended

Ask about its benefits, risks, recovery, and expected durability. Your valve team will explain why a particular approach fits your anatomy and health.

Feeling well does not always mean it is safe to delay treatment. Sometimes a procedure is recommended before symptoms become severe to help prevent lasting heart damage.

Leave with a clear plan

Before leaving, make sure you know your next appointment date, when testing is due, and whom to contact if symptoms change.

Sources & further reading

NIH: Heart valve disease

Valve disease types

Causes

NIH: Diagnosis

NIH: Treatment

NIH: TAVR

AHA: Treatment and follow-up

CDC: Heart valve disease

Updated October 2026. Educational information; your own care plan may differ. Medical illustrations are simplified examples for teaching.

NIH: Valve disease symptoms

AHA: Symptoms of valve problems

NIH: Diagnosing valve disease

Mayo Clinic: Valve testing

NIH: Valve disease treatment

AHA: Valve repair

AHA: Valve replacement