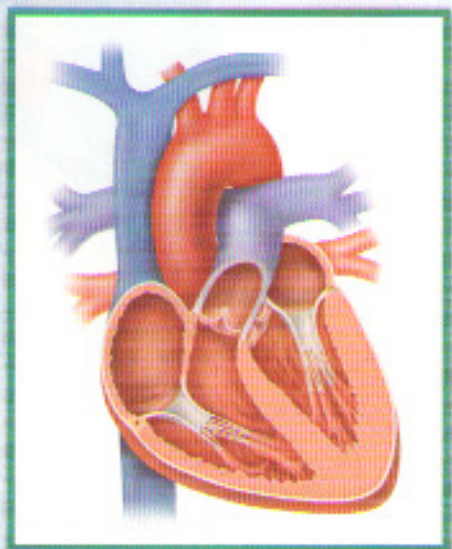


Understanding Heart Valve Surgery



- Understanding Valve Problems
- Repair and Replacement Procedures
- Taking Care of Yourself After Surgery



Trouble with a Heart Valve

Your heart's job is to pump blood through your body. That job starts with pumping blood through the heart itself. Inside your heart, blood passes through a series of one-way gates called **valves**. If a valve works poorly, not enough blood moves forward. This can make you sick. But surgery can often fix the problem. This booklet will help you understand valve problems and show you what to expect before, during, and after surgery.

Symptoms You Might Have

You can have a problem valve for decades yet have no symptoms. If you do have symptoms, they may come on so slowly that you barely notice them. In other cases, though, symptoms appear suddenly. You might have one or more of these symptoms:

- Problems breathing when you lie down, exert yourself, or get stressed emotionally
- Pain, pressure, tightness, or numbness in your chest, neck, back, or arms (angina)
- Feeling dizzy, faint, or lightheaded
- Tiredness, especially with activity or as the day goes on
- Waking up at night coughing or short of breath
- A fast, pounding, or irregular heartbeat
- A fluttering feeling in your chest
- Swollen ankles or feet



Waking up short of breath may be a symptom of a heart valve problem.

How a Healthy Heart Works

Your heart is a pump that keeps your body supplied with oxygen-rich blood. The right side of the heart receives oxygen-poor blood from the body and sends it out to the lungs. The lungs add oxygen to that blood. The newly oxygenated blood then flows into the left side of the heart. The left side pumps it out to the rest of the body.

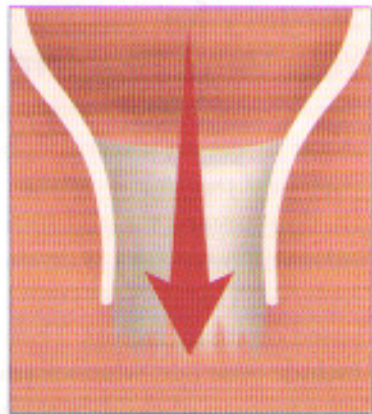


Your heart and lungs work together to keep the body supplied with oxygen.

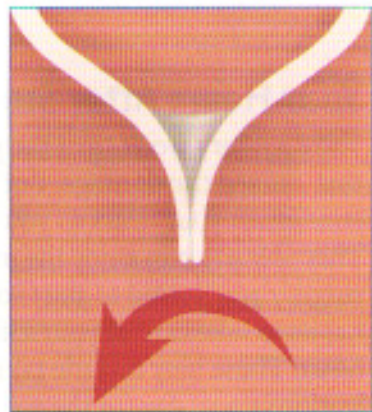
Healthy Heart Valves

The heart has four chambers. Two are called **ventricles**, and two are called **atria**. As blood travels through the heart, it fills each chamber. It then exits each chamber through a one-way gate called a valve. Each valve has flaps called **leaflets**. They spread apart to open and then come together to close. Opening lets blood out of the chamber. Closing keeps any of that blood from leaking back in. This action keeps blood flowing in the right direction.

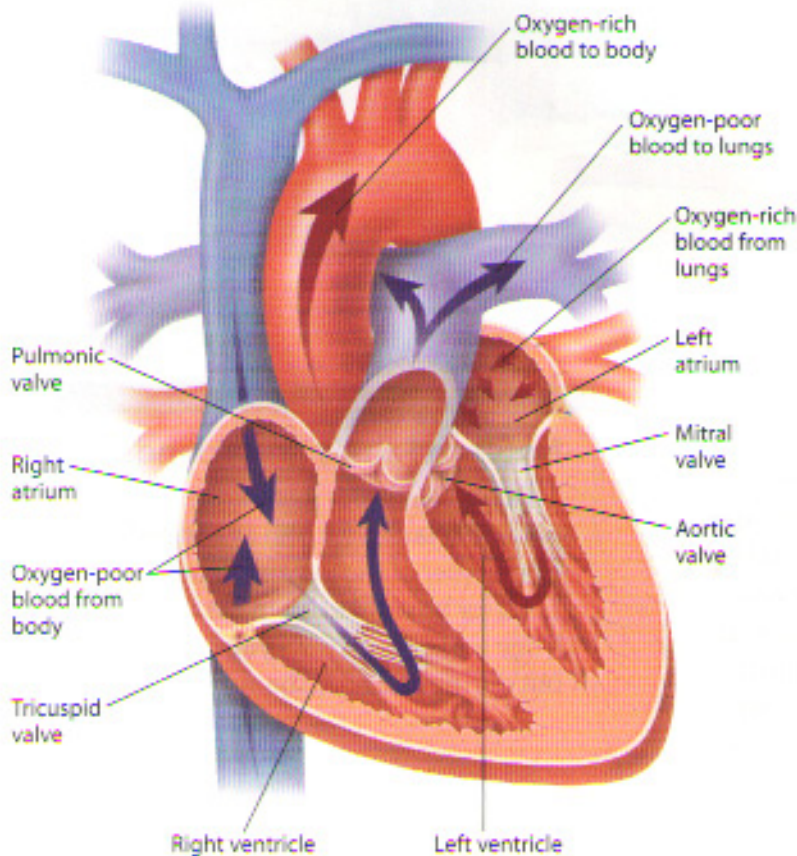
Healthy Valve



A healthy valve opens fully, so blood flows out of the chamber.



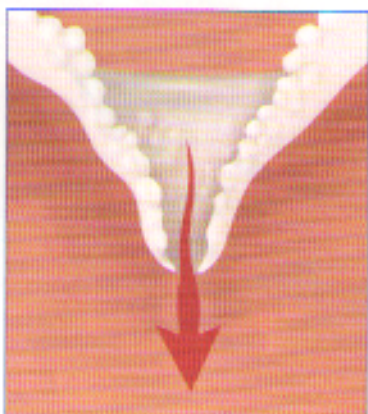
A healthy valve closes tightly, so blood cannot flow backward.



When a Valve Doesn't Work Right

A problem valve may not open wide enough, not close tightly enough, or both. In any case, not enough blood gets sent out to the body. This causes the symptoms you feel. The heart tries to make up for that shortage by working harder. But working harder helps for only a while. If the problem isn't fixed, that extra work will damage the heart further. This can lead to **heart failure**, the inability of the heart to pump enough blood to meet the body's needs.

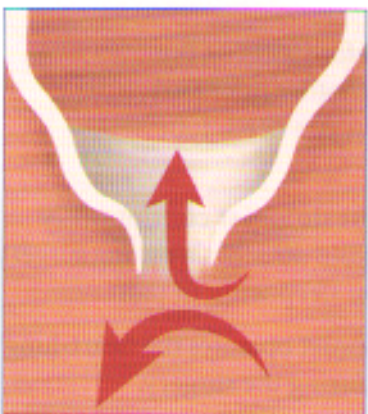
Problem Valve



With **stenosis**, a valve doesn't open all the way, so not enough blood gets through.

Problems Opening (Stenosis)

When a valve doesn't open all the way, the problem is called **stenosis**. The leaflets may be stuck together or too stiff to open fully. When the valve doesn't open fully, blood has to flow through a smaller opening. So the heart muscle has to work harder to push the blood through the valve.



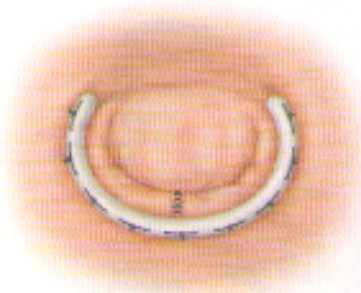
With **regurgitation**, a valve doesn't close all the way, so some blood leaks backward.

Problems Closing (Regurgitation)

When a valve doesn't close tightly enough, the problem is called **regurgitation** or insufficiency. The valve itself may be described as leaky. Leaflets may fit together poorly. Or the structures that support them may be torn. Some blood leaks through the valve back into the chamber it just left. So the heart has to move that blood twice.

Three Ways to Treat Problem Valves

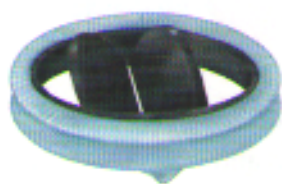
Different problems call for different treatments. Your doctor will talk with you in advance about the treatment that is best for you. In some cases, though, the plan may need to change once surgery has begun. The three basic ways to treat valve problems during surgery are:



A ring for one kind of repair

Repair of the Valve

Whenever they can, surgeons prefer to repair a valve rather than replace it. The most common kind of repair involves sewing a ring around the entrance to a valve to improve its size or shape. Another involves cutting tissue to let leaflets open or close better. When repair isn't possible, the valve will be replaced.



A mechanical valve

Replacement with a Mechanical Valve

Mechanical valves are made of metal or hard carbon. There are many designs. They can last for decades. But blood tends to stick to them, forming clots. So if you receive a mechanical valve, you have to take **Coumadin**, an **anticoagulant** medication, for life to prevent blood clots. See pages 14 and 15 to learn more about Coumadin.



A tissue valve

Replacement with a Tissue Valve

A tissue valve usually comes from a pig or a cow. Blood does not clot as easily on tissue valves. So patients getting tissue valves may need Coumadin for only a short time. Aspirin is sometimes used instead. Tissue valves may wear out faster than mechanical valves. So they may have to be replaced sooner.

Fixing Other Problems

If you have a valve problem, you may have some other heart problem, too. If so, there is no better time to fix it than while you are already in the operating room. So it is common for surgeons to plan to combine needed procedures. For instance, you might need a coronary artery bypass at the same time as valve surgery. Two procedures may mean more risk than one. If a second procedure is needed, your doctor can tell you more.

Preventing Blood Clots

Any foreign object placed in your heart will have tiny spaces where a blood clot could form. If a clot does form, it could travel to your brain or somewhere else in your body. That could cause a stroke or other severe problems, even death. If you are prescribed anticoagulant medication to prevent clots, these two pages are for you.

Medication to Prevent Clots

You will need aspirin or an anticoagulant pill called Coumadin (also called warfarin) to prevent blood clots. If you received a mechanical valve, you most likely will need to take Coumadin for the rest of your life. If you don't get a mechanical valve, you may need to take it for only a few months.

- Take Coumadin at the same time each day. If you miss a dose, take the next one at the normal time. Never take two doses at once.
- Check with your healthcare provider before taking any other medications (even aspirin) or vitamin or herbal supplements.
- With Coumadin, bleeding takes longer to stop. So avoid using sharp tools, going barefoot, and doing anything else that might cause bleeding. Always wear medical ID jewelry that says you're taking an anticoagulant.
- Go for your blood tests as often as directed. These tests are the only way to check if your Coumadin dosage is right. Ask your doctor whether you can use a home blood test product.



Risks of Anticoagulant Therapy

Long-term anticoagulant therapy has some risks. They include life-threatening bleeding and (when taken by a pregnant woman) birth defects. **CAUTION: Taking aspirin, aspirin-containing medications, or ibuprofen while on anticoagulant therapy can be dangerous. Ask your doctor before taking any medication. Alcohol and certain foods can also affect how your anticoagulant works, so talk with your doctor.**