

# Heart Valve Surgery: *Preparing for the surgery*

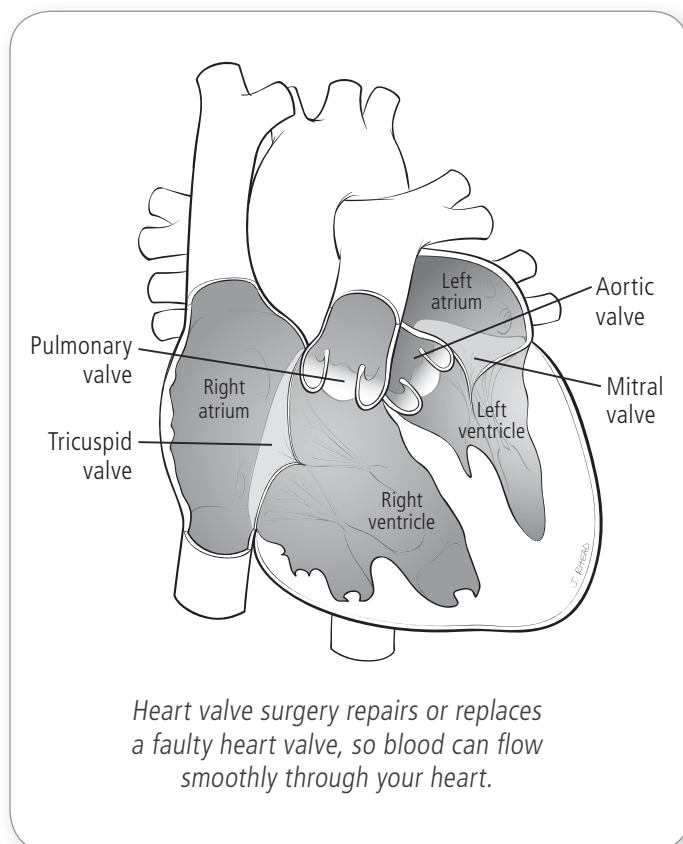
## What is this surgery — and why do I need it?

**Heart valve surgery is a treatment for a diseased or damaged heart valve.** In a healthy heart, valves open and close to ensure the proper one-way flow of blood through the heart. But if your heart valves have been damaged or diseased, they may fail to work correctly. This places extra strain on your heart muscle. Depending on your valve problem, your doctor will recommend one of these solutions:

- **Repair.** In a repair, your surgeon will reshape the faulty valve to make it work better.
- **Replacement.** If repairing your valve isn't possible, your surgeon may choose to replace it with a **mechanical valve** (a valve made of mechanical parts) or with a **tissue valve** (a valve from a human donor or an animal). Each type of valve has pros and cons — see page 3 for more information.

## How do I prepare for the surgery?

- **Preliminary tests.** You'll have tests to check your lung function. You may also have a chest x-ray, blood tests, and urine tests. These tests help the team assess how your body will respond to surgery.
- **Meetings with members of your healthcare team.** You'll meet members of your surgery team, and they will go over the surgery plan with you and answer your questions.
- **Medication.** Your healthcare providers will probably tell you to stop using Coumadin or other blood-thinning medication before surgery. They may prescribe an antibiotic to take before surgery, along with a beta blocker if you're not already taking one. You'll also be told whether to continue other medications you take regularly. Tell your healthcare providers about ALL medications you take, including over-the-counter remedies and supplements.



- **Clean skin.** You may be given a special soap to use on the day before surgery. Your doctor may also tell you to avoid shaving your legs or chest area for a few days before surgery, to prevent infection.
- **Fasting.** You'll probably be told not to eat or drink anything after midnight the night before your surgery. Fasting helps to prevent surgery complications.

## What happens on the day of surgery?

- You'll fill out paperwork, including an informed consent form. This form shows you understand the risks and benefits of surgery (see below), and gives your healthcare team permission to treat you.
- You'll be connected to a heart monitor, and a nurse will place an IV (intravenous) line in your wrist or arm to give you medication.

- An arterial line (thin tube) will be inserted into an artery, usually in your arm, to help monitor you during surgery.
- Your family will wait in a waiting room. While you're in surgery, a member of the operating room staff may call them with updates.

## What happens during the surgery?

Heart valve surgery usually takes at least 4 hours. Here's what happens:

- **Preventing pain.** You'll have **general anesthesia**. This is medication so that you feel nothing and sleep through the surgery.
- **Inserting tubes.** Healthcare providers will place several tubes:
  - A **breathing tube**, a tube inserted into your throat and connected to a machine that will breathe for you
  - A **Foley catheter**, a tube to empty your bladder
  - An **NG tube**, a tube that goes from your nose to your stomach, used to empty your stomach
- One or more **chest tubes or drains**, inserted to drain excess blood or other fluids after the surgery
- A **Swan-Ganz catheter**, a tube inserted into your neck, used to measure pressures inside your heart
- **Reaching the heart.** The surgeon will make an incision (cut) to reach the heart in one of two ways:
  - **In traditional surgery**, the incision is down the middle of your chest and it's as long as your sternum (breastbone). The surgeon then separates your sternum.
  - **In minimally invasive surgery**, the incision is smaller. It may be in the middle of your chest — but shorter than your breastbone — or it may be on the right side between your ribs.
- **Keeping your blood circulating.** Your heart will be stopped during the surgery. You will be connected to a **heart-lung bypass machine**, which takes over the work of your heart and lungs.

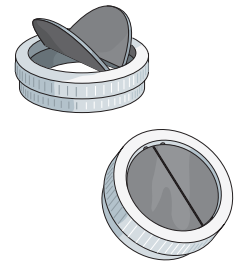
## Talking with your doctor before valve surgery

The table below lists the most common potential benefits, risks, and alternatives for valve surgery. There may be other benefits or risks in your unique medical situation. Talking with your doctor is the most important part of learning about these risks and benefits. If you have questions, be sure to ask.

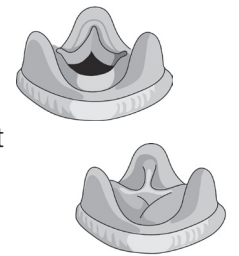
Potential benefits	Risks and potential complications	Alternatives
<p>The main benefit of valve surgery is the smooth flow of blood through your heart. This can bring relief from heart valve disease symptoms such as shortness of breath, weakness, dizziness, chest pain while you exercise, or rapid heartbeat.</p>	<p><b>Risks and potential complications for the surgery:</b></p> <ul style="list-style-type: none"> <li>• Problems that can happen with any surgery. These include surgical site pain, infection, bleeding that requires a blood transfusion, blood clots, or reactions to general anesthesia (including vomiting, trouble urinating, sore throat, cut lips, headache, heart problems, stroke, or pneumonia).</li> <li>• Heart attack during or after the surgery.</li> <li>• Memory or thinking problems after the surgery.</li> <li>• Low-grade fever and chest pain that can last up to 6 months after surgery.</li> <li>• Heart rhythm problems.</li> <li>• Kidney or lung failure.</li> <li>• Stroke.</li> <li>• Death (extremely rare).</li> </ul> <p><b>Risks and potential complications for a replacement valve:</b></p> <ul style="list-style-type: none"> <li>• Mechanical valve: Blood clots forming on the valve — you'll take anticoagulant medication for the rest of your life to help prevent this.</li> <li>• Tissue valve: The valve wearing out, which means you would need another surgery to replace it. (Biological valves last around 20 years.)</li> <li>• Either type of valve: In rare cases, the valve can have a problem and need to be replaced. This can happen right after the surgery or much later.</li> </ul>	<p>Many people with heart valve disease can manage it without surgery. Alternatives include:</p> <ul style="list-style-type: none"> <li>• Protecting your heart valve from infection (your doctor will explain what to do)</li> <li>• Taking medication, along with having regular appointments to check on your heart valve function and symptoms.</li> </ul>

- **Repairing or replacing the valve.**
  - **Repair:** Depending on the problem, your surgeon might reshape valve sections or “leaflets,” remove hardened calcium deposits from the valve, and/or sew a ring around the edge of the valve to strengthen it. (The ring is made of tissue or synthetic material.)
  - **Replacement:** The surgeon will replace your diseased heart valve with a mechanical valve or tissue valve (see the panel at right).
- **Placing temporary pacer wires.** The surgeon will place temporary pacer wires near your heart. These can be used to regulate your heartbeat as you recover from surgery, if needed.
- **Finishing the surgery.** The surgeon will close your incisions with stitches. (Note: If your breastbone was separated for your surgery, the surgeon will first close up the breastbone with stainless steel wires.)

**Mechanical valves** contain man-made materials, such as metal or ceramic. Mechanical valves are usually quite durable — they last 20 to 30 years. However, you’ll need to take anticoagulant (blood thinning) medication for life to prevent blood clots from forming on the valve. (If you have to take anticoagulant medication for another reason, this may not be an important consideration.)



**Tissue valves** come from human donor hearts or from animals (usually pigs). With a tissue valve, you won’t have to take anticoagulant medication. However, while most current tissue valves last up to 20 years, tissue valves are a bit less durable than mechanical valves.



## What happens after the surgery?

You will be in the hospital around 3 to 7 days after the surgery. Here’s what to expect during your recovery in the hospital:

- **Right after surgery, you’ll be taken to the intensive care unit (ICU).** Your family members will move to the ICU waiting room, where your surgeon will tell them how the surgery went. The ICU staff will monitor you closely. When you’re stable, your family can visit you.
- **You may be swollen from fluids given during surgery.** Your family should be prepared to expect this — it’s normal after surgery.
- **You’ll have a breathing tube.** It will be taken out as soon as you can breathe safely on your own.
- **You’ll be connected to a heart monitor and other tubes.** See page 2 for a list of the tubes inserted during surgery — these will still be in place. As you recover and improve, they will be removed one by one.
- **You’ll move from the ICU to a regular hospital room** as soon as your doctor feels your condition is stable and improving.
- **Your healthcare providers will manage your pain.** Controlling your pain helps you do the activities that are important for healing. Be sure to tell your healthcare providers if you’re in pain. They will also regularly ask you to rate your pain level. You might have pain medication through an IV at first, and then you’ll switch to pain pills. Ask for the Intermountain handout *Managing Your Pain after a Medical Procedure* to learn more. (Because pain medication can make you constipated, you may also have medication to prevent or treat constipation.)
- **You may have IV medication to control your blood glucose (blood sugar).** Blood glucose naturally rises when the body is under stress. High blood glucose levels can slow healing. If your blood glucose is high, you may be given insulin to stabilize it.

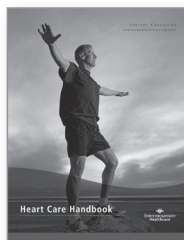


- **You'll work with a respiratory therapist.** During surgery, it's normal for mucus to build up in your lungs. A respiratory therapist will visit regularly to check your lung function and help you do exercises to improve it. You'll probably start using a device called an **incentive spirometer** to help you breathe deeply.
- **You'll be encouraged to eat well.** While your appetite may be less after surgery, it's important for your body to get good nutrition to promote healing. You may also receive nutritional supplements.
- **You'll be expected to move and walk.** You'll get out of bed and walk several times a day, and sit in a chair as much as possible. Cardiac rehab staff will guide you as you increase your activity. They will help you do stretches and gentle calisthenics, and you might use a stair-step machine you can operate while you're sitting.
- **As soon as your doctor feels you are ready, you'll be discharged** to finish your recovery at home.

## How should I care for myself at home?

### Recovery after valve surgery takes around 4 to 8 weeks.

When you are ready to go home from the hospital, your nurse will give you a full set of instructions. You may also receive Intermountain's *Heart Care Handbook* after your surgery. Chapter 1, "Going Home," covers what you need to do during your recovery at home.



Other chapters in the *Heart Care Handbook* explain heart disease, heart disease risk factors, heart tests, and treatments for heart disease. The handbook also covers lifestyle changes to improve your heart health.

**Outpatient cardiac rehab** is a great way to recover after surgery. This program focuses on exercise, education, and support to help you build a stronger heart. Research has shown that people who attend cardiac rehab have better outcomes after heart surgery. Most heart surgery patients attend outpatient cardiac rehab a few times a week for several months.

## When to seek medical care

**Call your healthcare provider** if you have any of the following after valve surgery:

- Signs of infection or a blood clot:
  - Temperature over 100.4° F for 3 days in a row, or any fever over 101.5°
  - Chest incisions that are red or hot to touch
  - Swelling or soreness around incisions that gets worse
  - Drainage that increases, changes color, or smells bad
  - Calf swelling, tenderness, warmth, or pain
- Signs of heart or lung problems:
  - Angina (chest discomfort) or a smothering feeling
  - Racing or irregular heartbeat
  - Shortness of breath (trouble breathing) that started recently or is getting worse
  - Dizziness, lightheadedness, or weakness
  - Weight gain of more than 2 pounds in one day or more than 5 pounds in a week
  - Excessive swelling in the hands or feet
- Other problems:
  - Nausea, vomiting, or diarrhea that doesn't go away
  - Pain that limits your daily activities
  - Clicking or movement in your sternum (breastbone) after 6 to 8 weeks
  - Feelings of depression that don't improve or that get in the way of daily activities
  - Bleeding gums, or blood in your urine or stools

Seek emergency care if you have any of the following:

- Chest pain that's not relieved by resting a few minutes, pain medication, or nitroglycerin (if prescribed)
- Shortness of breath that suddenly gets worse
- Resting heart rate that is very slow (below 50 beats per minute) or very fast (over 130 beats per minute), unless your healthcare providers tell you otherwise
- Sudden numbness or weakness in your arms or legs
- Sudden, severe headache
- Fainting spells