

Heart Valve Repair or Replacement Surgery

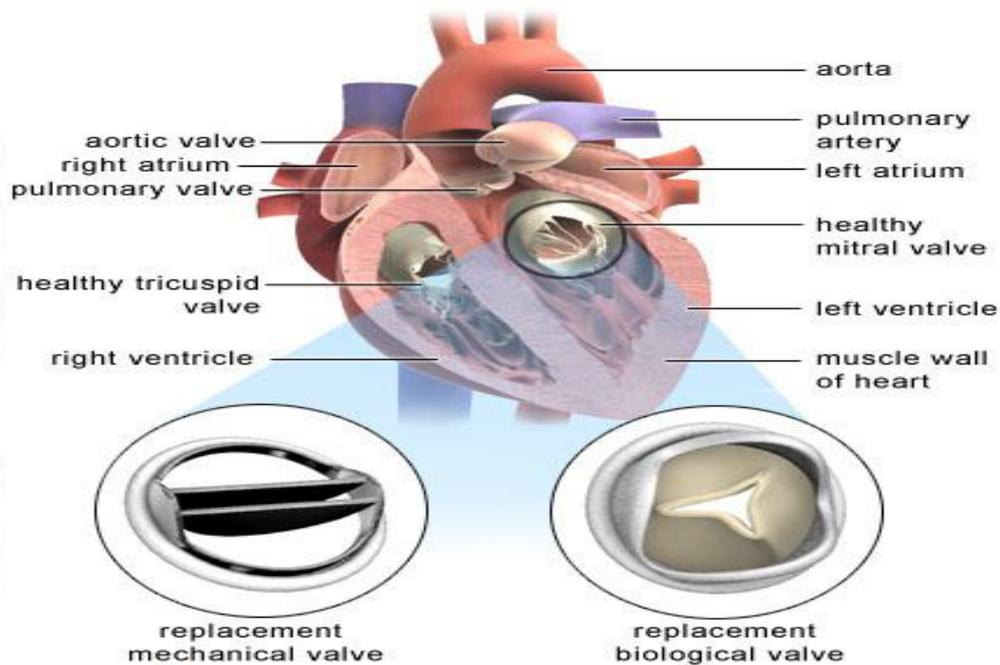
Understanding Heart Valve Dysfunction

Your heart has four chambers, each with its own valve that helps direct blood flow through the heart, to the lungs for oxygenation, and then back to the heart before being pumped out to the rest of the body. These valves open and close with each heartbeat to ensure blood flows in the correct direction.

Heart valves can become damaged for a variety of reasons, including congenital defects, the natural ageing process, and chronic health conditions such as high blood pressure, atrial fibrillation (irregular heart rhythm), and diabetes mellitus. Infections, including rheumatic fever and endocarditis (infection of the heart), can also damage heart valves.

When a heart valve does not open or close properly, surgical repair or replacement may be required. Valve replacements can be either tissue or mechanical, depending on the severity of the damage and individual patient factors. Mechanical valves are durable but require lifelong anticoagulation with warfarin to prevent blood clots from forming on the valve.

The three main heart valves that most commonly require surgery are the aortic valve, the mitral valve, and the tricuspid valve.



Symptoms of Valve Dysfunction

- Shortness of breath
- Fatigue
- Dizziness/fainting
- Chest pain
- Swelling ankles and/or feet
- Irregular heart rhythm

The Surgery

To gain access to the heart, the surgeon makes an incision through the breastbone, also known as the sternum. This allows the heart to be seen clearly. During the operation, a heart–lung machine is used to supply oxygen to the body and brain while the heart is temporarily stopped. The surgeon will then open the heart near the valve that needs to be replaced, then repair the valve if possible or replace the valve with a tissue or mechanical valve.

Once the surgery is complete, the heart–lung machine is removed and the heart is restarted.

At the end of the operation, drains are placed around the heart to remove any excess fluid and air. Pacing wires are attached to the outer surface of the heart, with the ends brought through the skin and connected to a pacing box. These wires allow the medical team to correct your heart rhythm if it becomes irregular after surgery.

The sternum is closed using surgical wires, and the skin is closed with dissolvable sutures. A thin dressing is applied and is usually left in place for up to six weeks.

After the Surgery

After your surgery, you will be cared for in the Intensive Care Unit (ICU) for approximately 48 to 72 hours. During this time, you will be closely monitored to ensure your heart, brain, and kidneys are functioning well.

When you first return from the operating theatre, you will be asleep and have a breathing tube in your mouth connected to a ventilator. This usually remains in place for around 6 to 12 hours. As your condition stabilises, the sedation medications will be gradually reduced, and the breathing tube will be removed.

Chest drains are typically removed two to three days after surgery. You will be helped to sit up in bed and encouraged to take deep breaths and cough to clear your lungs. When coughing, you will be shown how to support your chest using a small cushion to protect your breastbone.

Once your heart rate and rhythm are stable, the pacing wires will be removed. When you are medically ready, you will be transferred from the Intensive Care Unit to the ward.

During this period, you will receive regular pain relief to help you move comfortably and cough effectively to clear any mucus from your chest. Your physiotherapist and nurse will guide you on how to move safely in bed and how to get in and out of beds and chairs. They will also explain current recommendations for sternal, or breastbone, precautions. Your exercise program after surgery will include early mobilisation such as walking, sitting out of bed, and regular deep breathing and coughing exercises. These activities are an important part of your recovery and help reduce the risk of complications that could delay healing or prolong your hospital stay.

Recovery

Most people take around three to six months to fully recover from aortic surgery. If your job is not physically demanding, it may be possible to return to work within six to twelve weeks. Your breastbone takes approximately six weeks to heal, and during this time it is important to protect your chest when sitting up in bed or getting out of a chair. You should avoid lifting heavy objects, and you will likely need some assistance at home with daily chores. After six weeks, you can gradually begin lifting light items, resuming household activities, and driving, as advised by your healthcare team.

Some people worry about becoming dependent on pain-relieving medications. Taking pain relief as prescribed is important, as it allows you to breathe deeply, cough effectively, and perform gentle exercises and daily activities. Strong pain relief medications, such as opioids, can cause constipation. Drinking plenty of fluids, particularly water, and eating a high-fibre diet can help prevent or relieve this. As your recovery progresses at home, you will usually need less strong pain relief and may be able to manage your pain with paracetamol (Panadol) alone.

It is common to feel very tired or low in mood after surgery. You may also notice difficulty concentrating, sleeping, or completing everyday tasks. Be kind to yourself and remember that recovery from major surgery takes time. Most people gradually return to their usual level of activity over several months.

Continue to perform your prescribed exercises and slowly increase the amount of walking you do each day. After discharge from hospital, contact your local public hospital to arrange attendance at a Cardiac Rehabilitation program, which provides supervised exercise, education, and support during your recovery.