

Coronary Artery Bypass Surgery

Understanding Your Heart and Coronary Arteries

The heart is a muscular pump that pushes blood through blood vessels around the body. The blood vessels supplying the heart muscle with oxygen rich blood are known as the coronary arteries. Certain risk factors put people at risk of developing coronary artery disease, causing fatty deposits that can build up (plaque), reducing blood flow through the coronary arteries. Some patients feel this as chest, jaw or back pain (angina) and fatigue. If a coronary artery becomes blocked, the area of muscle is starved of oxygen rich blood, and this could cause a heart attack (myocardial infarction).

A Coronary Angiogram is done to assess which arteries in the heart are narrowed or blocked, and if coronary artery bypass surgery is required to prevent further blockage or infarction.

Symptoms of Coronary Artery Disease (CAD)

Chest pain (angina). You may feel squeezing, pressure, heaviness, tightness or pain in the chest. It may feel like somebody is standing on your chest. The chest pain usually affects the middle or left side of the chest.

Shortness of breath. You may feel like you can't catch your breath.

Fatigue. If the heart can't pump enough blood to meet your body's needs, you may feel unusually tired.

Symptoms of coronary artery disease may not be noticed at first. Sometimes symptoms only happen when the heart is beating hard, such as during exercise. As the coronary arteries continue to narrow, symptoms can get more severe or frequent.

A completely blocked coronary artery will cause a heart attack.

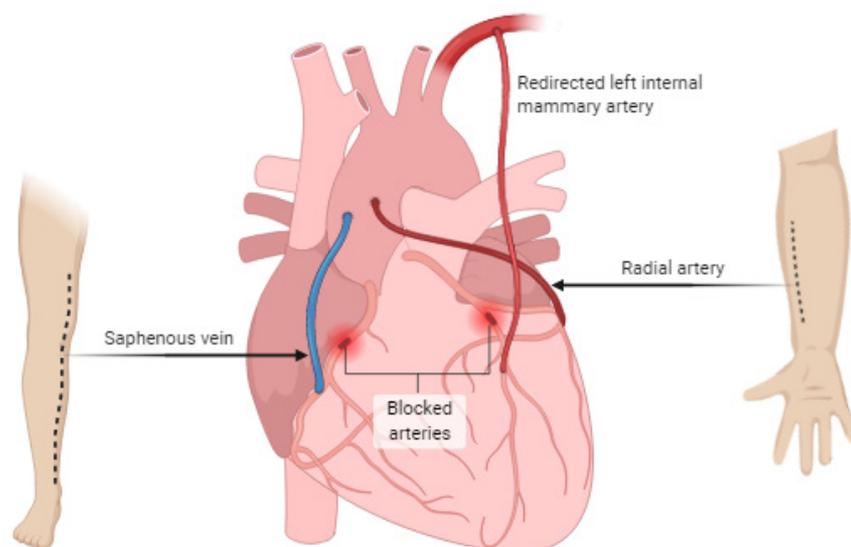
- Common heart attack symptoms include:
- Chest pain that may feel like pressure, tightness, squeezing or aching.
- Pain or discomfort that spreads to the shoulder, arm, back, neck, jaw, teeth or sometimes the upper belly.
- Cold sweats.
- Fatigue.
- Heartburn.
- Nausea.
- Shortness of breath.
- Light-headedness or sudden dizziness.

Chest pain is usually the most common symptom of heart attack. But for some people, such as women, the elderly and those with diabetes, symptoms may seem unrelated to a heart attack. For example, they may have nausea or a very brief pain in the neck or back. Some people having a heart attack don't notice symptoms

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. In some situations, the heart may not be stopped during the surgery and a stabilising device is used to reduce the movement of the heart and this is called 'off pump' or 'beating heart' surgery. Off pump surgery is determined by the location of the blockage, and the number of blockages requiring grafting.

Coronary Artery Bypass Grafting



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.

As scientific advances are made there are other options for accessing the heart to perform coronary artery bypass surgery including Robotic Coronary artery bypass. This is suitable for patients with a tight blockage in the LAD artery. It is performed through a 5cm incision between the ribs, offering a faster recovery time.

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.