



Anaesthesia for cardiac surgery

Most adult heart surgery in Australia and New Zealand is performed for coronary artery disease and heart valve disease.

Cardiac surgery is done under general anaesthesia, which means the patient is in a state of carefully controlled, medication-induced unconsciousness and will not respond to pain. It includes changes in breathing and circulation.

In most cases, patients are admitted to hospital the day before surgery and undergo relevant investigations, such as blood tests and x-rays.

Before the operation

It is important that you speak to your doctor about whether you should stop eating and drinking before your anaesthetic.

The anaesthetist will also need information such as:

- Any recent coughs, colds or fevers.
- Any previous anaesthetics or family problems with anaesthesia.
- Abnormal reactions or allergies to drugs.
- Any history of asthma, bronchitis, heart problems or other medical problems.
- Any medications you may be taking.

What to expect

On the morning of the operation, patients may be given a “pre-med”, or medication to reduce anxiety; however, they will be conscious when they arrive at the operating theatre complex.

All valve surgery and most coronary bypass surgery is performed on a non-beating heart.

Because the body requires oxygen, which is carried by circulating blood, a machine temporarily takes over the function of the lungs and the heart to pump blood around the body. This machine is called a heart- lung machine or cardiopulmonary bypass machine.

Specialist anaesthetists and cardiac perfusionists may work together to manage this machine during the operation.

Some coronary artery bypass surgery is done without cardiopulmonary bypass. This is known as off-pump coronary artery bypass surgery and reduces the complications that are possible with the use of cardiopulmonary bypass. Complications of cardiopulmonary bypass include stroke, reduced kidney function and an increased risk of bleeding.

Whether or not the coronary artery bypass surgery is performed on-pump or off-pump depends on the number of arteries that need bypassing, which arteries they are and the degree of impairment of heart function, as well as the surgeon’s assessment of risk management.

During heart surgery, patients have tubes inserted into their arteries, veins and heart chamber for purposes of monitoring pressure in the different parts of the circulation, as well as for means of providing bypass. The tubes are removed when patients are ready to be discharged from the intensive care unit.

The time that patients remain sedated after heart surgery depends upon the course of the surgery, whether there were complications, the patient's underlying medical condition and the progress made after the operation. The intensive care team makes all medical decisions in conjunction with the heart surgeons.

After surgery, patients are often transferred, while still anaesthetised, to the intensive care unit for further monitoring and care. Patients are kept sedated and closely monitored. A breathing machine or ventilator supports and assists the breathing, which will have been suppressed by anaesthetic medications. Gradually patients are weaned off the ventilator and allowed to breathe with minimal support.

When the heart is functioning well, sedation and ventilation support will be stopped.

Patients usually stay in an intensive care unit for two or three days after uncomplicated heart surgery before they are transferred to a ward. For several days, they will receive pain relief medication in the form of oral analgesics and intravenous opioid drugs, such as morphine or fentanyl.

Most patients find the pain they experience after surgery is less severe than they expected.

This information is a guide and should not replace information supplied by your anaesthetist. If you have any questions about your anaesthesia, please speak with your treating specialist.