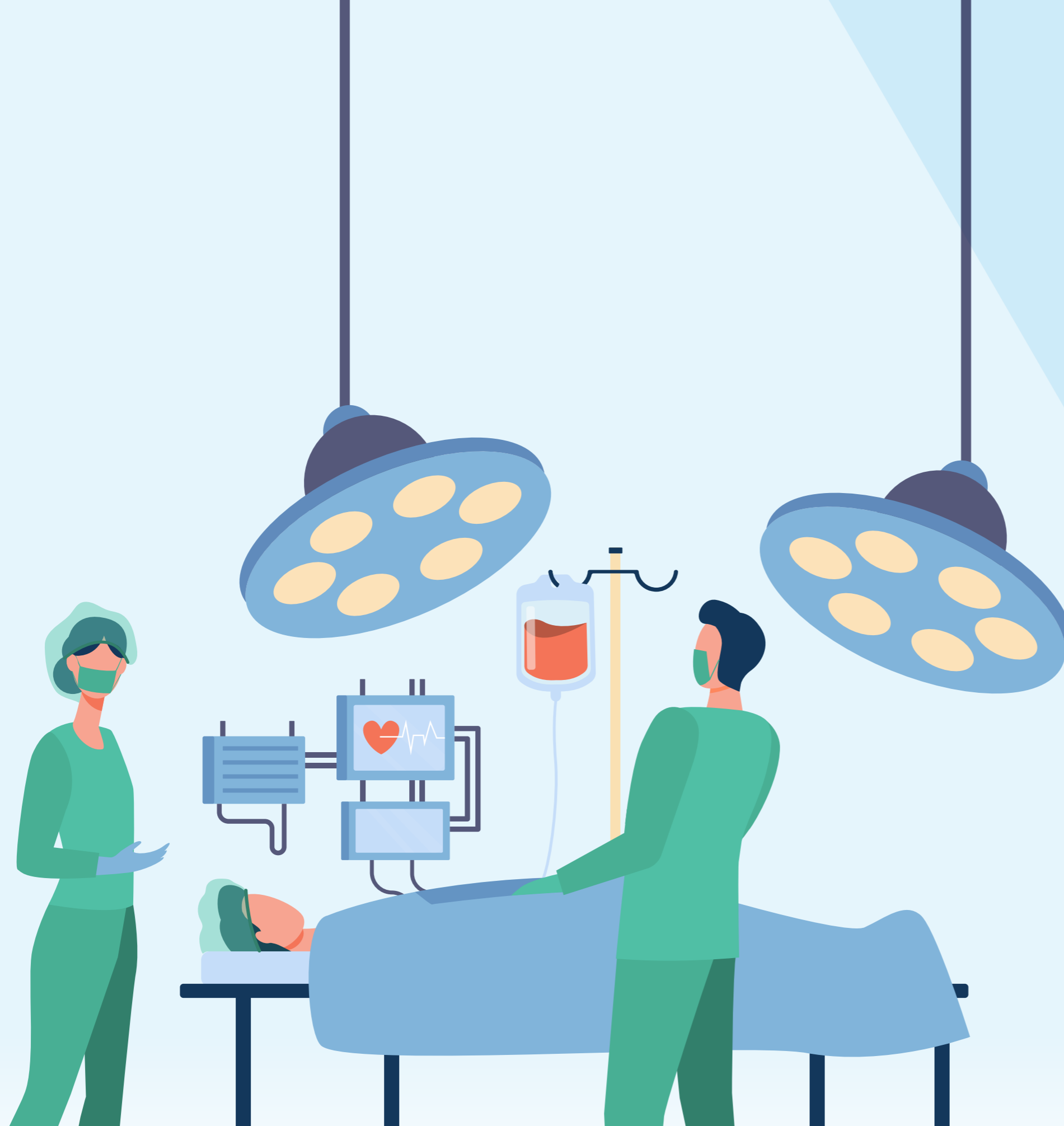


Your anaesthetic for heart surgery



Quality & Safety Advisory Committee

College of Anaesthesiologists of Ireland



Introduction

This leaflet gives you information about your anaesthetic for heart (cardiac) surgery and what you can expect before, during and after your operation.

The anaesthesiologist and your surgeon will provide details about your specific treatment, benefits and risks.

There is a lot of information to take in, as this type of surgery is more complex than other types of surgery. You should read this leaflet together with any other information provided by your hospital.

What happens at the time of the actual operation?

The anaesthesiologist who will look after you will visit you in hospital before your operation.

On the day of your operation

- You will change into a theatre gown
- Your nurse will put an identity band on
- A member of the anaesthetic team will meet you in theatre and check all your details

You will be moved to the operating room and greeted by a number of team members

- You will be connected to several machines (monitors), these include:
 - an ECG (to monitor your heart beat)
 - a blood pressure cuff
 - a clip on your finger or ear to measure the oxygen levels in your blood
- You may have some stickers placed on your forehead to measure how deeply asleep you are during your anaesthetic and the level of oxygen in your brain
- You will have two or three cannulas (plastic tubes or 'drips') put into your veins and an artery
- During this, you may be offered sedation to relax you and extra oxygen to breathe

What happens during the operation?

- The anaesthetic drugs are injected slowly through one of the drips in your arm while you breathe in oxygen through a face mask.
- Once you are completely anaesthetised (fully asleep)
 - The anaesthesiologist will place a breathing tube via your mouth
 - A machine called a ventilator will blow oxygen into your lungs
 - A soft tube (catheter) will be connected to your bladder
 - An anaesthesiologist will place an ultrasound probe (transoesophageal echocardiogram or TOE) through your mouth down towards the stomach to give pictures of your heart during the operation. This will be taken out before you wake up
 - A larger cannula is placed in your neck. This is used to give certain drugs. If your anaesthesiologist thinks there is a need to put it in before you are anaesthetised (using local anaesthetic to numb the skin), they will discuss this with you
 - Drains are placed in your chest at the end of surgery to monitor bleeding



- For many operations on the heart, surgery is not possible if your heart is beating.
- If this is the case for your surgery, your team will connect you to a special pump called a cardiopulmonary bypass machine (heart-lung machine).
- The cardiopulmonary bypass machine is managed by a team of perfusionists throughout the operation.
- This machine takes over the work of the heart and pumps the blood around your body. It also adds oxygen to your blood. This means the team can safely stop your heart beating for part of the operation.
- Many heart operations last between three and five hours. Your anaesthesiologist and the perfusionist will watch you closely during this time while the surgeon is operating, keeping you deeply asleep and comfortable.
- It is normal to lose some blood during heart surgery.
- Your team will inject fluids through the cannulas to replace any lost blood.
- Where possible, they will collect your own blood using a special machine (cell saver) and transfuse it back to you.
- You may, however, need a blood transfusion during or after your operation. Blood used for transfusions is carefully checked and modern blood transfusions are extremely safe.
- They will not give you any more blood than is needed for your safe recovery. You may also need other blood components, such as plasma or platelets.



What happens after the operation?

Routine post-operative care:

- After your operation, you will be taken to the cardiac intensive care unit (ICU).
- This is because you will need a higher level of nursing and medical care and more specialised equipment which cannot be provided on a normal ward.
- The ICU team will carefully watch your heart rate, blood pressure, breathing and kidney function, you will be connected to monitors to watch these.
- You may have some wires attached to a temporary external pacemaker, this is sometimes needed to maintain your heart rate after surgery.
- Your team will adjust the fluids and medication according to what you require.
- You will be sedated and comfortable while connected to the ventilator until it is the right time to wake you up from the anaesthetic completely.
- The breathing tube will then be removed safely. This usually happens within the first few hours after surgery, but can take longer (even days) in some complex cases or if you have breathing difficulties
- You will receive oxygen through your nose or a mask
- You will be given strong pain relief medications to control your pain to enable you to breath easily, cough and take part in physiotherapy
- These strong painkillers can be reduced when the chest drains are removed
- You will remain in the intensive care unit until you are fit to be discharged to the ward, which is over the next day or two, but can take longer in some complex cases.



High risk cases:

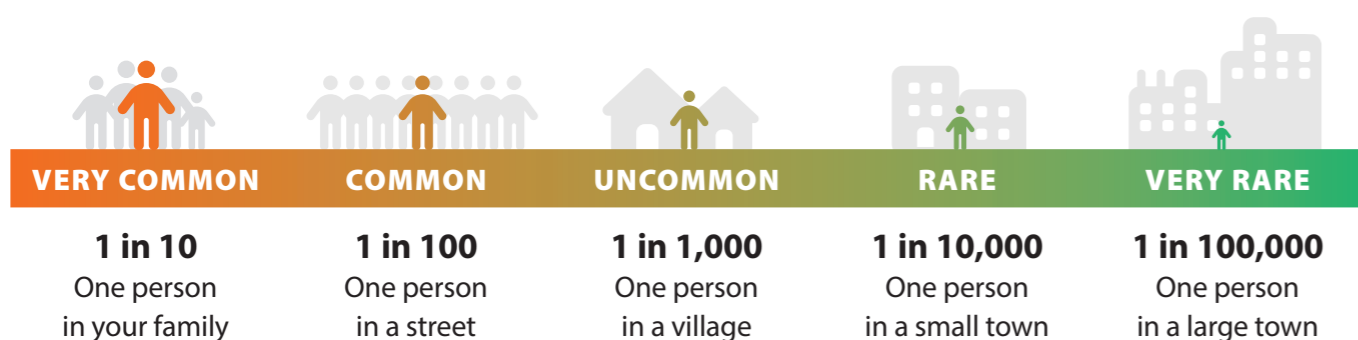
- Recovery from cardiac surgery can be more complex compared with other types of surgery.
- Depending on your expected surgery and medical history, you may need some extra treatments.
- Your surgical team and anaesthesiologist will discuss the risks with you before your operation if they think that you are likely to need them.
- The following are examples:
 - Your lungs may need help with ventilation for longer than normal and you will usually be sedated during this time. This is very common — around 1 in 10
 - If you need to be on a ventilator for more than a few days, the breathing tube in your mouth will need to be changed to a 'tracheostomy'. This is a tube going through the front of your neck directly to your airway. This is common — 1 in 100 cases. A tracheostomy tube can easily be taken out when it's no longer needed
 - 3 in 10 people who undergo cardiac surgery will have some abnormality of their heart rhythm during their recovery. Temporary pacing wires are often put in place by your surgeon during your operation to help your heart beat normally if needed. A small number of patients require a permanent pacemaker after surgery
 - Your kidneys sometimes need extra help to work properly and a dialysis machine may be used to clean your blood of waste products while your kidneys recover. This is common — around 1 in 50 cases. Your anaesthesiologist will need to put another large drip into one of your veins if you need this

What are the risks of complications from anaesthesia for cardiac surgery?

The risk of complications during or after your operation depends on the type of heart surgery you have, how well your heart is working and your general health before surgery.

During your anaesthetic for cardiac surgery

- There are risks with putting in lines, drips and monitoring. These include bleeding, infection and damage to other parts of your body they are close to.
 - These risks are common — 1 in 100 cases
- The risk of damage to your oesophagus (food pipe) from the ultrasound tube for the TOE
 - uncommon to rare — around 1 in 1,000 to 10 000 cases¹
- All the standard risks and side effects from general anaesthesia also apply to cardiac operations
 - feeling sick and having a sore throat afterwards is common
 - uncommon risks include damage to teeth, nerves and eyes
 - awareness is uncommon during cardiac surgery — a large study showed the risk of a self-reported case of awareness during cardiac surgery to be 1 in 8,600²
 - allergic reactions to anaesthetic drugs are rare — 1 in 10,000³



Disclaimer

We aim to keep the information in this leaflet accurate and up to date, but we cannot guarantee this. This leaflet provides general information for patients in Irish hospitals. It does not replace a discussion with your anaesthesiologist, who will tailor advice to your individual situation.

Please ask your anaesthesiologist or surgeon if you have any questions or concerns.

This leaflet includes text taken from the Royal College of Anaesthetists' (RCoA) leaflet 'Your anaesthetic for heart surgery, 2023' but the RCoA has not reviewed this as a whole. The original leaflet and similar leaflets about risks associated with having an anaesthetic or an anaesthetic procedure are also available via the Royal College of Anaesthetists website: rcoa.ac.uk/patients/patient-information-resources/anaesthesia-risk/risk-leaflets

References

1. Ramalingam, G. et al. Complications related to peri-operative transoesophageal echocardiography — a one-year prospective national audit by the Association of Cardiothoracic Anaesthesia and Critical Care. *Anaesthesia* 75, 21–26 (2020).
2. NAP5: Accidental Awareness During General Anaesthesia in the UK and Ireland. nationalauditprojects.org.uk/NAP5home.
3. NAP6: Perioperative Anaphylaxis. nationalauditprojects.org.uk/NAP6home.
4. rcoa.ac.uk/patients/patient-information-resources/anaesthesia-risk/risk-leaflets



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