

# Your anaesthetic for heart surgery

Information for patients and carers



## Your anaesthetic for heart surgery

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

The team in the pre-assessment clinic, your anaesthetist and your surgeon will provide details about your specific treatment, benefits and risks.

There is a lot of information to take in, as the surgery and recovery for cardiac surgery is more complex than many other types of surgery. You should read this leaflet together with other information provided by your hospital.

### How should I prepare for heart surgery?

Research has shown that fitter patients recover more quickly from operations. If you do not need urgent surgery, you should think about your health and try to do what you can to get your body as fit as possible before your surgery.

#### Smoking

We know that if you smoke you are more likely to have complications after surgery. The good news is that stopping smoking even a short time before surgery can improve wound healing, make your lungs work better and shorten your stay in hospital. Your GP practice or your local Stop Smoking Service ([nhs.uk/smokefree](https://www.nhs.uk/smokefree)) will be able to offer help in reducing or stopping smoking, so ask them about the best options for you.

Information developed by Action on Smoking and Health (ASH) which is supported by the RCoA can be found here: [ash.org.uk](https://www.ash.org.uk)

#### Alcohol

Alcohol has many effects on the body. It makes the liver less able to make the building blocks necessary for healing. Make sure you are drinking within the recommended limits, or lower, to improve your body's ability to heal after surgery. You can find useful information on how to reduce alcohol and the benefits to you on NHS Choices ([nhs.uk](https://www.nhs.uk)).

#### Diet

Try to eat a healthy diet to best prepare your body for recovery after surgery.

If you are overweight, losing weight can help reduce the stress on your heart and lungs. It may also lower your blood pressure, improve your diabetic control, reduce your risk of blood clots after surgery and help you exercise more easily.

Discuss with your GP what resources and help are available to you.

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## Exercise

Exercise can help prepare your heart and lungs for the extra work around the time of an operation. Please discuss with your GP or surgeon exactly what it is safe for you to do.

However, if you are advised not to do any extra physical activity, then your surgery can still be provided safely.

## Existing medical conditions

If you have existing medical conditions, eg diabetes, high blood pressure, asthma or other chest problems, check with your GP well ahead of your surgery that your medication is up to date and you're taking the correct dose. This can help prevent delays to your surgery and give you the best chance of your operation and recovery going well.

If you are anaemic, you should talk to your GP about treatment to improve your blood count before surgery. This will give you more energy during your recovery and may stop you needing a blood transfusion.

If you are diabetic, it is important to have good control of blood sugar levels. This will improve wound healing and make you less likely to develop infections. Work with your GP and diabetes team to try and get your blood sugars as well controlled as possible before surgery.

## Teeth and dentures

If you have any loose teeth or crowns, please visit your dentist before your surgery. Teeth can be damaged when the breathing tube is put in place during your anaesthetic.

## How will I be assessed before the operation?

Most hospitals have a preoperative assessment clinic (pre-admission clinic). This clinic prepares you for your heart surgery and organises any tests needed on your blood, heart and lungs. You will usually have an anaesthetic assessment either in this clinic or as a separate visit.

An anaesthetist or preoperative nurse will want to know about your general health and activity levels. They will ask questions about medicines you take, any allergies you have, your heart problems and anaesthetics you might have had in the past. It's a good idea to bring with you a list of all the medicines you normally take (you can get a copy of this list from your pharmacist or GP).

They will also ask about your teeth, crowns or dentures and whether you have any problems opening your mouth or moving your neck.

A nurse or anaesthetist will let you know exactly when you need to stop eating and drinking before your operation. Usually you will be able to eat up to six hours and drink water up to two hours before the operation.

An anaesthetist or nurse will give you instructions about which medicines you should take on the day of surgery. These can be taken with a sip of water right up to the time of surgery if necessary.

At the preoperative assessment clinic you will have the chance to ask any questions and discuss any concerns you might have about the operation and the anaesthetic.

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### What happens at the time of the actual operation?

The anaesthetist who will look after you will visit you in hospital before your operation. In some hospitals your anaesthetist may offer you a sedative drug before your anaesthetic.

Before your operation you will be asked to change into a theatre gown. Your nurse will put bracelets on you to confirm your identity and, if necessary, any allergies. For some operations, you will put on compression stockings to help prevent you getting blood clots in your legs.

When you arrive at the operating theatre, the anaesthetic assistant will meet you and check all your details. They will then connect you to several machines (monitors). These include an ECG (to monitor your heart beat), a blood pressure machine and a clip on your finger or ear to measure the oxygen levels in your blood.

You will have two or three cannulas (plastic tubes or 'drips') put into your veins and an artery. Local anaesthetic will numb your skin so it should not hurt any more than a normal blood test. During this, you may be offered sedation to relax you and extra oxygen to breathe.

Another larger cannula is placed in your neck after you are anaesthetised. This is used to give certain drugs and will help tell how well your heart is pumping. This is usually done after you are asleep. If your anaesthetist 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.

After you are anaesthetised, a soft tube (catheter) is put into your bladder to show how much urine your kidneys are making. Your anaesthetist will also put an ultrasound tube (transoesophageal echocardiogram) 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.

### What happens during the operation?

The anaesthetic drugs are injected slowly through one of the drips in your arm. Once you are completely anaesthetised, the anaesthetist will place a breathing tube through your mouth and into your throat. A machine called a ventilator will then blow oxygen into your lungs, as well as the anaesthetic gas to keep you anaesthetised.

For many operations on the heart, surgery is not possible if your heart is beating. To help, your team will usually connect you to a special pump called a bypass machine (heart-lung machine). 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 anaesthetist and the technician who looks after the bypass machine will watch you closely during this time.

It is normal to lose some blood during heart surgery. Your team will inject fluids into your veins to replace any lost blood. Where possible, they will collect your own blood using a special machine and transfuse it back to you. You may, though, 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 than is needed for your safe recovery.

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### What happens after the operation?

After your operation you will be taken to the intensive care unit (ICU) or high dependency unit (HDU). You will need a higher level of nursing and medical care and more specialised equipment than can be provided on a normal ward.

At first, the team will give you drugs to sedate you. They will carefully watch your heart rate, blood pressure, breathing and kidney function. Your nurse will adjust the fluids and medication according to what you require.

They will connect you to a breathing machine (a ventilator) until it is the right time to bring you round completely.

An anaesthetist will then remove your breathing tube and give you oxygen through a mask over your mouth and nose. This usually happens four to six hours after the end of your operation. It can be later than this (even days) in complex cases or if you have breathing problems. Your surgeon and anaesthetist will discuss with you before your operation if they think this is likely to be needed.

When you wake up, you will still be connected to all the drips and monitors. You will also have one or two tubes that drain any fluids from your chest. There may be some fine wires attached to your heart (pacemaker wires) that your anaesthetist can use, if necessary, to control your heart rate. These are usually kept in for just a few days.

During and after your operation your anaesthetist will give you strong painkilling drugs into your veins through the drip to keep you comfortable. Once they take out your chest drains, you will be less likely to need strong painkillers and you will be able to take tablets instead.

Your nurse will check your pain levels regularly. It is important that you take enough pain relief so you can manage to take deep breaths in and cough well. It is important to cough up mucus to keep your lungs working well and prevent you getting a chest infection. A physiotherapist will explain the breathing exercises to you and show you how to cough well.

You will be able to have visitors while on ICU or HDU. Your nurse can advise you and family members on visiting times and the number of visitors allowed. Because you may be looked after in an area where there are very ill patients, it may not be suitable for young children to visit.

You will transfer to the ward when you no longer need all the monitoring and treatment in intensive care. This will usually be two or three days after your operation.

You can discuss with your surgeon how long they anticipate your recovery will take and when you might be able to return home.

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### What are the risks of complications from cardiac surgery?

The risk of complications during or after your operation depends on the type of 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 (the tube that food passes down from the back of your mouth to your stomach) from the ultrasound tube (transoesophageal echo) is rare – less than 1 in 10,000 cases.
- 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 to be 1 in 8,600
  - allergic reactions to anaesthetic drugs are rare.

To read more details of risks from general anaesthesia, please see:

[rcoa.ac.uk/documents/anaesthesia-explained](http://rcoa.ac.uk/documents/anaesthesia-explained)

#### During your recovery from cardiac surgery

Recovery can be more complex than after other operations. Depending on your specific case, you may need some extra treatment, for example:

- your lungs may need help with ventilation for longer than normal
- this is very common – around 1 in 10 cases. You will usually have sedation during this time. If this is 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
- it's normal for there to be some bleeding after the operation and your doctors and nurses will monitor this carefully. If the bleeding is excessive, the anaesthetist and surgeon may make the decision to take you back to theatre for a further operation to stop the bleeding
- three in every 10 people who go through heart surgery will have some abnormality of their heart rhythm during their recovery. Pacing wires are often put in place by your surgeon during your operation in case this happens. Afterwards they can be simply attached to a machine called a pacing box that can help restore your heartbeat back to normal, if needed
- there is a risk of stroke after heart surgery – depending on the type of surgery, this risk is between 3 and 5 in every 100 cases. It can cause temporary or long-lasting problems that affect how you move, speak and swallow. It can sometimes be fatal

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- 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 anaesthetist will need to put another large drip into one of your veins if you need this
- your heart may need help to pump well while it recovers. This is common – around 1 in 100 cases. In most cases your anaesthetist will give you drugs to do this, but occasionally artificial pumps are used until the heart can work by itself again
- there is a risk of infection inside the heart if you are connected to the bypass machine during the operation. The risk is rare – less than 1 in 5,000 cases.

Your surgical team will discuss the risks of these procedures with you before your operation if they think you are likely to need them. If you did need any of these extra treatments, the risk to you would usually be far less than not treating the complications.

Detailed information about cardiac surgery and possible complications can be found on the Society of Cardiothoracic Surgeons and the British Heart Foundation websites:

[scts.org/having-heart-surgery](https://scts.org/having-heart-surgery)

[bhf.org.uk/information-support/treatments/coronary-bypass-surgery](https://bhf.org.uk/information-support/treatments/coronary-bypass-surgery)

People vary in how they interpret words and numbers. This scale is provided to help.



### Where can I get further information?

Most hospitals produce their own information leaflets about heart surgery and many of these contain information about anaesthesia.

You can find more information leaflets on the College website [rcoa.ac.uk/patientinfo](https://rcoa.ac.uk/patientinfo). The leaflets may also be available from the anaesthetic department or pre-assessment clinic in your hospital.

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## Risks associated with your anaesthetic

Leaflets about specific risks associated with having an anaesthetic or an anaesthetic procedure are also available via the College website: [rcoa.ac.uk/patientinfo/risks/risk-leaflets](http://rcoa.ac.uk/patientinfo/risks/risk-leaflets). They supplement the patient information leaflets listed above.

## Disclaimer

We try very hard to keep the information in this leaflet accurate and up-to-date, but we cannot guarantee this. We don't expect this general information to cover all the questions you might have or to deal with everything that might be important to you. You should discuss your choices and any worries you have with your medical team, using this leaflet as a guide. This leaflet on its own should not be treated as advice. It cannot be used for any commercial or business purpose.

For full details, please see our website: [rcoa.ac.uk/patientinfo/resources#disclaimer](http://rcoa.ac.uk/patientinfo/resources#disclaimer)

## Tell us what you think

We welcome suggestions to improve this leaflet.

If you have any comments that you would like to make, please email them to: [patientinformation@rcoa.ac.uk](mailto:patientinformation@rcoa.ac.uk)

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