Royal Brompton and Harefield hospitals

NHS

Royal Brompton Hospital

Your heart operation

Contents

This booklet gives you information about your heart operation. It does not replace the need for personal advice from a qualified healthcare professional. If you have any questions please ask us.

Why do I need heart surgery?

People need heart surgery for different reasons. The most common reasons are:

Coronary artery disease

The coronary arteries are major blood vessels that supply the heart with blood full of oxygen. In some people, if fatty material builds up inside the wall of the arteries (atheroma), these arteries become narrowed.

If this happens, the blood supply to the heart is reduced so the heart does not get enough oxygen. This causes chest pain called angina.

If a coronary artery becomes totally blocked, the result is a heart attack.

Damaged heart valves

The heart has four valves that control the flow of blood in and out of your heart.

Heart valves can get damaged through ageing, rheumatic fever or a heart attack. The valves may become:

- Stiff and their openings narrower restricting blood flow. This is called valve stenosis.
- Or floppy which may allow blood to flow in the wrong direction in the heart. This is called valve regurgitation.

If the valves are damaged, your heart needs to work harder to pump blood around your body. Over time, the heart becomes enlarged (bigger) and does not work well.

The condition when a heart does not work well is called heart failure. Symptoms include shortness of breath, tiredness and fluid retention.

Enlarged aorta (aneurysm)

The aortic artery is the main artery (blood vessel) in the body. It carries blood from the heart to the rest of the body.

The aorta can become enlarged (get bigger) and burst (rupture).

An enlarged aorta is an abnormality that is usually caused by a genetic disorder.

Types of heart surgery

Coronary artery bypass grafting (CABG)

What is CABG?

Coronary artery bypass grafting (CABG) involves taking a blood vessel from another part of the body. The blood vessel will be:

- a vein from a leg
- an artery from the chest wall
- or an artery from the forearm

The blood vessel is attached to the coronary artery below the narrowed area or blockage.

The replacement blood vessel is known as a graft. It diverts (bypasses) blood around the narrowing or blockage, improving blood supply to your heart muscle.

The number of grafts needed will depend on how severe your coronary heart disease is and how many of the coronary blood vessels are narrowed.

How is CABG carried out?

The first step is to take the blood vessel that is going to be used as a graft. The surgeon then reaches the heart by making a 25cm (10ins) cut down the middle of the breastbone.

A different procedure called a minimally invasive operation is available to some people who have only one blocked coronary artery. Instead of cutting through the breastbone, the surgeon makes a smaller cut in the side of the chest through which the surgery is carried out.

Your surgeon will discuss these procedures with you and explain which one will be used.

Benefits of CABG

A successful operation will increase the blood flow to your heart muscle. This will reduce symptoms such as angina (chest pain), shortness of breath and improve your overall quality of life.

The surgery also reduces the risk of future heart attacks and extends long term survival, especially in people who have diabetes.

Heart bypass surgery does not cure the heart disease that causes your arteries to become narrowed or blocked.

It is important to follow a healthy lifestyle to help the graft(s) work well and to prevent the narrowing of other arteries. There is more information on how you can improve your lifestyle on page 12 of this booklet.

Risks of CABG

Every medical procedure carries some risk and risks are different for each person. Your doctor or surgeon will discuss the risks with you before you decide to go ahead with a CABG.

The risks of CABG surgery include:

Atrial fibrillation – a fast, irregular heartbeat that usually settles after a few days. It rarely causes a major change to how the heart works or to the patient's overall level of health.

Bleeding – some people may need another operation after surgery to control bleeding.

Wound infection – this is more common in people with poorly controlled diabetes or other conditions that make them more vulnerable to infection. If you do get an infection, this can be treated with antibiotics.

Kidney failure – this is more common in people who already have kidney problems and can be treated with dialysis. A small number of people who have kidney damage need haemodialysis, a procedure where a machine is used to do the kidneys' job of cleaning the blood.

Stroke – this happens when a blood clot develops and travels to the brain, cutting off the oxygen supply. The risk is higher in people who have had a stroke or transient ischaemic attacks (TIAs, commonly known as mini-strokes).

To reduce the risk of stroke, we will give you medicines both during and after the operation to slow down the rate at which your blood clots. We may also ask you to wear compression stockings after your operation. These have been shown to reduce the risk of clots.

Death – the risk of death is higher for people who are very unwell before the surgery.

Alternative treatments to CABG

If alternative treatments are suitable for you, your cardiologist or surgeon will discuss them with you.

The main alternative is a procedure called coronary angioplasty.

This is a minimally invasive operation. It uses a balloon device to stretch open a narrowed or blocked coronary artery. Usually, a small metal tube, called a stent, is left in place to keep the artery open.

Other alternatives are:

- Medicine

Medicine may control the symptoms of your heart disease but cannot treat the underlying problem.

- No treatment

If you only have medicine or decide to have no treatment, your symptoms such as angina and shortness of breath will get worse and more frequent over time.

You will also have a higher risk of having a heart attack.

People with severe coronary artery disease may live a shorter life.

Heart valve surgery

What is heart valve surgery?

In heart valve surgery, damaged valves are either repaired or replaced. The valves that most commonly need surgery are the aortic and mitral valves. In some cases it is possible to repair a narrowed valve by simply opening it up (valvotomy). Sometimes a leaking valve can also be repaired.

Valves that are badly damaged need to be replaced.

There are 2 types of replacement valves:

- Mechanical valves which are made of metal and plastic.
- Tissue valves – which are made out of tissue from pigs, cows or from human donors.

Heart valve surgery usually involves making a cut of about 25cm (10ins) down the middle of the breastbone to access the heart.

You may be offered a different operation which involves making a smaller cut and may lead to quicker recovery times. If this type of operation is suitable for you, your doctor or surgeon will discuss this with you in more detail.

Benefits of heart valve surgery

Heart valve surgery should help improve the quality of your life by reducing symptoms such as:

- shortness of breath
- blackouts
- tiredness
- chest pain
- and fluid retention

It will also reduce the risk of your heart failure developing further and help you to live longer.

Risks of heart valve surgery

Every medical procedure carries some risk and risks are different for each person. Your doctor or surgeon will discuss the risks with you before you decide to go ahead with heart valve surgery.

The risks of heart valve surgery include:

Need for a permanent pacemaker

Heart valve surgery can disrupt the heart's regular rhythm. This will usually return to normal in the days after surgery. Sometimes this does not happen, and people need a permanent pacemaker fitted after surgery to regulate their heart rhythm.

The other risks of heart valve surgery are the same as those for heart bypass surgery (CABG) on page 5 of this booklet.

Alternatives to heart valve surgery

Medicine can be used to treat the symptoms of your condition but cannot cure the underlying problem.

Heart valve conditions can sometimes be treated using percutaneous procedures. Percutaneous means through the skin.

Percutaneous procedures involve making a small cut (incision) into a vein (blood vessel) through which long thin tubes are inserted and guided to the heart using X-ray images.

If your condition can be treated this way, we will discuss it with you.

What will happen if I do not have heart valve surgery?

Without heart valve surgery, your symptoms will get worse and more frequent over time.

Aortic surgery

In aortic surgery, the enlarged aorta is either replaced or repaired by placing a graft (a synthetic tube) around it to stop it from getting any bigger.

Benefits of aortic surgery

Aortic surgery will substantially reduce the risk of the aorta getting any bigger and bursting (rupturing) and will help increase your chances of living for longer.

Risks of aortic surgery

Every medical procedure carries some risk and risks are different for each person. Your doctor or surgeon will discuss the risks with you before you decide to go ahead with aortic surgery.

The risks of aortic surgery are the same as those listed for heart bypass surgery (CABG) on page 5 of this booklet. There may be more risks depending on your overall health and condition of your heart. These risks will be discussed with you.

Before your heart surgery

The date of your operation

A member of our theatre scheduling team will phone you to discuss the planned date for admission to hospital for your operation.

We recommend you accept the date offered. You can turn it down if you really want or need to. However, if you turn it down, your operation will be delayed, and your health may get worse.

Once you accept the planned date, the theatre scheduling team will send you a confirmation letter by email. Please tell us if you want to receive this letter by post instead.

As soon as you receive this letter, we recommend that you start making travel arrangements. You need to plan travel to the hospital for clinic appointments before surgery and for the planned date of admission to hospital for your operation.

Please note:

We have accommodation close to the hospital available for patients and families, if needed. However, this needs to be booked in advance.

For more information, please contact the accommodation office on **020 7351 8044**. Or you may need to arrange accommodation yourself.

What if my symptoms get worse?

If you feel unwell while waiting for your operation, please contact your GP. It may be that your treatment needs to be changed. You should see your GP if you:

- have unusual swelling in your ankles
- have a cough and/or are producing phlegm
- are not able to exercise as much as usual

Go to the nearest accident and emergency (A&E) department if your GP cannot see you straight away and you have any of the following symptoms:

- angina that is not relieved by rest or controlled by your usual medicine
- unusual chest pain
- pain in your arms, back or throat
- shortness of breath that is not relieved by rest
- fainting or dizzy spells for no reason

Remember:
Royal Brompton Hospital does not have an accident and emergency (A&E) department.

The Ortus app

We want to remotely monitor your heart symptoms while you are waiting for your operation using an app called Ortus-iHealth. We call this app Ortus, for short.

We will start your registration on the app as soon as we can. You will then be sent a text message with an online link.

Please complete your registration using the online link. You will then be able to start using the app. This app will help to:

- monitor your symptoms
- enable you to keep in touch with us
- contact us if any of your symptoms are becoming worse

The app will ask you to make 1 or 2 weekly entries about your symptoms. This information will be checked by our Ortus nursing team. If problems are detected, we will contact you to discuss them.

If you have not received a text message to start your registration, phone: **020 7351 8497**.

For any technical queries about the application, contact the Ortus iHealth support team by phone: **0333 090 1699** or email **support@ortus-ihealth.com**.

If you cannot access the app, please contact us and we can make other arrangements to monitor your condition. Phone: **020 7351 8497**.

Improve your health and fitness

Exercise

Increase your overall level of fitness by walking regularly. Being active will help you to recover more quickly after surgery. It also reduces the likelihood of complications after your operation.

Quit smoking

Smoking is one of the main causes of coronary artery disease and it damages your lungs. People with strong, healthy lungs tend to recover from surgery much more quickly than those with lung damage.

We know that many people find that having a heart operation gives them extra motivation to stop smoking.

There is support to help you give up smoking. Talk to your GP or local pharmacist. You can also phone the free National Smokefree Helpline on **0300 123 1044** or visit **www.nhs.uk/smokefree**.

Cut down on alcohol

Alcohol has many effects on the body. It makes the liver less able to make the building blocks necessary for healing. If you are drinking a lot of alcohol, cutting down before you come into hospital will improve your overall health. Please discuss it with your GP.

You can find useful tips to help you cut down on alcohol on the NHS Better Health website. Visit: **www.nhs.uk/better-health/drink-less**.

Control your weight

If you are overweight, losing weight reduces the risk of complications during or after having a heart operation. Help to lose weight is available from your GP or practice nurse.

Visit your dentist (for people having heart valve surgery only)

You need to visit your dentist before having heart valve surgery at our hospital. This will reduce the risk of bacteria entering your bloodstream through your gums and getting to your heart. Your dentist has to send us a signed letter confirming you are dentally fit before your surgery can go ahead. If you are having heart valve surgery, we will send you more information about this.

Before your admission to hospital

You will receive an initial phone call from our pre-assessment team and be asked to attend 2 clinic appointments at the hospital.

Initial phone call

Our pre-assessment team will phone you to go through some questions that will help us decide which tests you need and start planning for your admission.

During this phone call we will discuss how you will be admitted to the hospital:

- We will ask you to arrive at the hospital at 7am or 8.30am on the day of your admission.
- Or you may need to be admitted the day before surgery.

We will check that you are able to get to your appointments by car or public transport. Please note only patients with medical conditions that prevent them from using other transport and who do not have relatives or friends who can help them can use hospital transport.

More information is on our website: **www.rbht.nhs.uk/patients-visitors/for-patients/non-emergency-hospital-transport-for-patients**.

We will remind you to arrange accommodation if you or your family members need it.

We will also book your 2 clinic appointments at the hospital:

- Fitness for surgery clinic
- Pre-assessment clinic

The clinics are run by our team of highly trained clinical nurse specialists (CNSs).

We will send a letter with the details of the clinic appointments to your email address. If you do not receive it, please check your email junk folder.

Please tell us if you want to receive this letter by post instead.

Fitness for surgery clinic appointment

During the Fitness for surgery clinic appointment, we will ask you to complete some tests.

Tests you are likely to need include:

MRSA (methicillin resistant Staphylococcus aureus)

This test is to check whether you have MRSA bacteria on your skin or in your nose. This is a routine test for all people admitted to the hospital. It is an important test that helps to stop the spread of MRSA (sometimes referred to as a 'superbug').

Electrocardiogram (ECG)

An electrocardiogram is a simple, painless test which measures the electrical activity of your heart through electrodes (sticky patches) placed on your chest.

Blood tests

Blood tests can help us to check different areas of your general health. If you have a blood test your nurse can explain what we are checking for.

Chest X-ray

An X-ray lets us look at your lungs, as well as the size and shape of your heart.

Echocardiogram (echo)

An echocardiogram is a test that uses sound waves to build up a moving picture of the heart. It is similar to the ultrasound scan used in pregnancy and is extremely safe. It allows us to learn more about the function and structure of your heart valves and chambers. We attach electrodes to your chest to monitor your heart and take the echo with a small hand-held recorder.

Ultrasound, computerised tomography (CT) or magnetic resonance imaging (MRI) scan

All of these scans let us look at your heart and lungs in more detail. Your doctor or nurse will explain which scan you are having and why.

Carotid doppler

This is an ultrasound scan of the arteries in your neck (the carotid arteries). It allows us to examine the arteries for any signs of narrowing or blockage.

Lung function tests

You may need these tests if you smoke, have recently quit, or have a chronic lung condition, such as chronic obstructive pulmonary disease (COPD) or asthma. Lung function tests check how well your lungs are working. They are simple and painless tests where you just breathe into a mouthpiece.

Pre-assessment clinic appointment

During the pre-assessment clinic your general health will be carefully assessed along with your medical history to plan your care.

For this appointment, please be prepared to be with us for the full day to allow time for everything to be completed. There is a canteen in the hospital for you to get some lunch, drinks and snacks during the day.

We will ask you questions about your:

General health

How well you have been in the last 6 to 12 months?

Heart problems

- how long you have been suffering from them?
- what makes them better?
- what makes them worse?

Medical history

Blood pressure control, previous heart attacks, and strokes. Other medical problems you might have such as: diabetes, epilepsy, symptoms of gastric reflux, or asthma. Surgical procedures you have had in the past.

Medicines

Tablets or preparations that you take whether prescribed by your GP or bought "over the counter". This includes herbal remedies and other complementary therapies. It is a good idea to bring with you a list of all the medicines you take.

Allergies

Any reactions you have had to medicines, foods, or substances such as latex, contained in rubber gloves, balloons, and condoms.

Previous anaesthetics

Any problems or reactions that you or your family have had in relation to anaesthesia.

Airways

We need to know if you have any loose teeth, caps, crowns or bridgework. This is so damage can be avoided when breathing

tubes and monitor probes are placed in your mouth after you are anaesthetised. It is also important to know if you have any pain or stiffness on moving your neck or any impairment in the ability to open your mouth.

Support at home

We will ask questions about your living arrangements and assess whether you will need any additional support when you go home after your operation.

Meeting members of our team

Meeting the anaesthetist

An anaesthetist is a doctor who has specially trained in anaesthesia, the treatment of pain, and the care of very ill people (in intensive care). Your anaesthetist is responsible for your comfort and well-being before, during, and after your surgical procedure.

A consultant anaesthetist will be in charge of your anaesthetic care. They are often with another qualified doctor, an anaesthetist in training, who will also be looking after you.

Depending on the type of surgery you need, you may meet an anaesthetist during your pre-assessment clinic appointment. The anaesthetist will assess your fitness for surgery and address any outstanding issues.

You will also meet an anaesthetist on admission to hospital before your operation. You will be able to discuss any concerns you have about having general anaesthetic.

For practical reasons, the anaesthetist who you see before your operation may not always be the same one who gives you the anaesthetic during the operation. However, the information you give them will be passed on.

Meeting the surgical team and giving your consent

You will be given time to discuss your operation with a member of your surgical team as part of your pre-assessment clinic appointment. Rarely, your surgeon may be called away to deal with an emergency on the day of your appointment.

If that happens, you will be able discuss your operation following your admission to hospital the day before your scheduled surgery. You will be able to ask any questions to make sure you understand your surgery. At the end of this conversation, you will be asked to sign a consent form. This says that you understand what is involved and agree to have the operation.

A phone call from a pharmacist

A pharmacist will phone to discuss and check medicines with you before you are admitted for surgery. They will give you important information about stopping or changing medicines before surgery, and other medicine or lifestyle advice.

If you have any questions about medicines, please discuss these with the pharmacist. Please have an up-to-date list of your medicines or your medicines to hand when you speak to the pharmacist.

Admission to the hospital

It is very important that you do not shave or remove hair from your chest, arms, legs or groin before coming into hospital. This is because shaving may damage the skin and increase the risk of infection. We will prepare your skin for surgery while you are in hospital.

You will be asked to shower at home before coming in for surgery, using an antimicrobial hair and body wash. We will give this to you at your pre-admission assessment.

If you are admitted for surgery the day before your operation, you will be asked to shower the evening before, and morning of, your surgery on the ward.

What do I need to bring in with me for my stay in hospital?

Toiletries

- Toothbrush and toothpaste
- Shampoo, liquid soap and shower gel
- Deodorant
- Shaving equipment for men
- Hairbrush/comb

Disposable flannels and clean towels will be provided daily by the hospital.

Clothing

- The clothing you bring should be light and comfortable.
- Avoid tight, elasticated, restrictive clothing, particularly at the ankles.
- Front-buttoning tops are recommended as it will be difficult to pull clothing over your head because of your wound.
- Female patients will need to bring in at least 2 bras. They should be non-wired and front fastening. It is important that your bras are the correct size. If you attend the pre-admission clinic in person, you will be measured as part of your assessment. If not, please go to a lingerie department or shop and get measured so that you bring or buy the right size bra.

Footwear

- Bring a pair of slippers that fit well and cover the whole of the foot.
- Avoid backless slippers and shoes.

- Non-slip socks will be provided.

Medicines

- Please bring in all the medicines you take, in their original boxes. This is so your doctor can accurately prescribe the medicines you require for your stay in hospital.

Valuables

- Please do not bring valuables or large sums of money with you.

Glasses, dentures and hearing aids

- If you wear dentures, bring a plastic denture pot with a secure fitting lid.
- If you wear glasses, bring a hard glasses case.
- If you wear a hearing aid, bring its storage box. This is so your hearing aid can be securely looked after, while you are in theatre.

Ear plugs and eye mask

- Ear plugs and eye masks are optional, but you could find them useful to help block out the noise and light at night.

Storage for your belongings

- You will have your own locker at your bedside to store your belongings. While you are having your operation, we will lock your belongings in a secure locked cupboard until you return to the ward.

Devices

- You will be able to use a mobile phone and laptop. There is access to free Wi-Fi on all wards. Ask your nurse how to connect to Wi-Fi. Please bring earphones with you so that you do not disturb other patients.

Day of your surgery

General anaesthetic

An anaesthetic stops you from feeling pain during an operation, procedure or treatment. General anaesthetic gives a state of controlled unconsciousness. This is like being asleep and you do not feel pain.

The operating department

When you arrive in the operating department (theatre block), you will be met by one of the operating department assistants (ODPs) who work with the anaesthetists. They will check through your details and paperwork with you.

You will then be taken into the anaesthetic room or the operating theatre itself.

Monitoring

Before you are given general anaesthetic, you will have various drips, tubes and monitoring equipment attached. These will assist the anaesthetist during your operation. They include:

Electrocardiogram (ECG) – electrodes (sticky patches) attached to your limbs and chest which are connected to an ECG machine that monitors your heart rate and rhythm.

Pulse oximeter – a clip placed on your finger to measure the amount of oxygen your blood is carrying.

Blood pressure cuff – an inflatable cuff is placed on your arm to check your blood pressure before the insertion of an arterial cannula (small plastic tube).

Peripheral cannula – your anaesthetist will insert a cannula into a vein in your hand or your arm. From this cannula you will receive your anaesthetic medicines and any other medicine given intravenously (through the veins).

Arterial cannula – your anaesthetist will insert a cannula into the artery in your wrist to monitor your blood pressure continuously. If the arterial cannula is inserted while you are still awake, local anaesthetic will be used to numb your skin.

Further monitoring equipment will be put in place once you are asleep, including:

Central venous line – a large cannula placed in a vein in the neck for monitoring and giving medicine.

Urinary catheter – a small tube that goes into your bladder to collect urine to assess how well your kidneys are working during the operation.

Transoesophageal echocardiogram (TOE) – this uses soundwaves (ultrasound) from a probe to scan the heart and see how well it is working. The probe is passed down your throat into your gullet (oesophagus) for the scan. A TOE is routinely done when you have an operation on one of your heart valves and might be advisable also in other heart conditions. If you need a TOE, the anaesthetist will discuss it with you before your operation.

Induction of anaesthesia (falling asleep)

Your anaesthetist will give you oxygen through a clear plastic facemask. Anaesthetic medicines will then be injected slowly through the drip (venous line) in your arm. These medicines can cause your arm to feel cold and stiff as they pass through your veins. This will only last for a few seconds as you drift off to sleep.

Once you are completely asleep, the anaesthetist will place a breathing tube into your airway and you will be able to continue to breathe with the assistance of a machine called a ventilator.

Maintenance of anaesthesia (staying asleep)

During the operation your anaesthetic medicines will continue to be given either intravenously, or as a gas that you breathe into your lungs.

Blood transfusion

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 give it back to you.

You may, however, need a blood transfusion during or after your operation. Blood used for transfusion is carefully checked. You may also need other blood components such as plasma or platelets. Blood products will only be given to you if they are needed for your safety.

The recovery room and intensive care unit

After your operation you will be transferred from the operating theatre to a critical care area. You will still probably be asleep at this point.

Your anaesthetist will hand over your care to the critical care team. Your breathing will be assisted by a ventilator until it is safe to turn the sedation off and to let you wake up completely. The breathing tube will then be removed, and oxygen given through a clear plastic facemask.

When you start to wake up, you may realise that you still have the breathing tube. This is not painful and completely normal, as your muscles will be still too weak following the operation for you to breathe by yourself.

There will be a dedicated nurse assisting you and making sure that the breathing tube is removed as soon as you are breathing well.

When you wake up, you will still be attached to various drips, tubes and monitoring equipment.

In addition, you will have tubes in your chest that help drain blood and fluids from the area operated on.

You may also have some wires attached to the heart (pacing wires) that can be used to control your heart rate and rhythm after surgery. All these drips and tubes will be removed as soon as they become unnecessary.

Risks and complications of anaesthesia

Any heart surgery is a major operation. The risks of surgery and anaesthesia need to be assessed in relation to the risk of not having an operation.

Modern anaesthesia is very safe and for heart surgery the risk of the whole procedure far outweighs the risk of anaesthesia by itself. It is this overall risk which is important to a patient.

The risk increases depending on many factors, particularly the following:

- Age.
- General health problems such as smoking and obesity.
- Serious medical problems such as diabetes, kidney disease, liver disease and heart failure.
- Type of operation.

Risks of anaesthesia during heart surgery

Very common (1 in 10 people) to common (1 in 100 people)

- Feeling and being sick (nausea and vomiting), headache, feeling sleepy.

- Sore throat.
- Minor damage to the lips or tongue.
- Risks as a result of inserting tubes, drips and monitoring include:
  - bruising/bleeding
  - infection
  - damage to other parts of your body.
- Chest infection.

Uncommon (1 in 1,000 people)

- **Damage to teeth:** Damage to your teeth is uncommon but might happen as your anaesthetist places a breathing tube in your airway. It is more likely if you have weak teeth, a small mouth or jaw, or a stiff neck.

Rare (1 in 10,000 people) or very rare (1 in 100,000 people)

- **Damage to the eyes:** sometimes the surface of the eye might get damaged from contact, pressure or exposure of the cornea (the transparent front part). This is usually temporary and is treated with drops. Serious and permanent loss of vision is very rare.
- **Damage to your food pipe (oesophagus)** from the ultrasound tube for TOE (see page 23). If you need a TOE, the anaesthetist will discuss this risk with you.
- **Serious allergy to medicines:** Allergic reactions are noticed and treated very quickly. Very rarely, these reactions lead to death even in healthy people.
- **Awareness:** This is when someone wakes up and becomes conscious during part of an operation under general

anaesthetic. Advanced monitoring techniques for measuring the activity of the brain during anaesthesia reduce the risk of awareness happening.

- **Brain damage and death:** It is very rare for an anaesthetic to cause brain damage and death directly. They usually happen due to complex surgery, complications and a person's overall health. There are about 5 deaths for every one million anaesthetics given in the UK.

For more information about anaesthesia visit Royal College of Anaesthetists website: **rcoa.ac.uk/patientinfo/risks/risk-leaflets**.

Pain medicines

After the operation your anaesthetist will ensure that you receive strong pain medicines to keep you comfortable. Pain medicines are usually given in the following ways:

- **Infusions:** Powerful pain medicines such as morphine are usually given by drip (intravenously). This infusion may be controlled by your nurse while you are still asleep.

  A patient-controlled analgesia (PCA) system will be used once you wake up. This is a method that allows you to control your own pain relief. When you are in pain, you press a button that delivers a safe, pre-set amount of medicine. There is no risk of addiction or overdosing. Most people receive pain relief in this way after their operation.

  Your nurse will explain this process to you once you are awake and will closely monitor you to see if you need of more pain relief medicine.

- **Tablets or liquid:** Once you are eating and drinking again, you will be given this type of pain medicine throughout the day. Tablets or liquid can be used along with PCA. They usually take about 30 minutes to work.

- **Suppositories:** If you are having problems swallowing or are feeling sick after your operation, we can give you suppositories. These are waxy pellets that are pushed gently into your bottom. These medicines melt and get absorbed into your body.

- **Regional anaesthetics:** We give regional anaesthetics called paravertebral blocks and intercostal blocks to some people. They are put in place before an operation to prevent pain after surgery. If you are eligible for such type of pain medicine, your anaesthetist will discuss it with you and explain the technique thoroughly before your surgery.

The nurses who will look after you in the recovery room or the intensive care unit, will ask you on a regular basis whether you feel comfortable.

It is important that you take enough pain medicine so you are able to take deep breaths in and cough up mucus, to keep your lungs working well and prevent you getting a chest infection. If you experience pain and discomfort after your operation, let the nurses and doctors know. They can arrange for you to be given more pain medicine. We can also refer you to our pain management team.

Physiotherapy

It is very important that you can breathe deeply and cough effectively, because it will help you recover from your operation. A physiotherapist will explain breathing exercises to you and help you to cough. The critical care nurses will also encourage you to do breathing exercises regularly.

Recovering from your operation

When will I move back to the ward?

Most people are well enough to move back to the high dependency unit (HDU) on the day after their operation. Some people take longer to recover than others and need to stay a little longer on the intensive care unit.

What will happen when I am back on the ward?

Once you are back on the ward you should recover quickly. Most drips and tubes will be removed within 2 or 3 days of the operation and each day you should notice an improvement in how you feel.

Most people pass through the following stages during their recovery. Remember that every person is different and so this is just a guide:

Stage 1 (generally day 1) – HDU

- You will still be connected to some drips and tubes.
- A nurse or physiotherapist will help you sit in a chair and spend some of the day out of bed.
- You will be able to eat and drink small amounts.

Stage 2 (generally day 2) – return to the ward

- We will remove most of your drips and tubes. If you have had heart bypass surgery with a vein from your leg, we will remove the bandage from your leg.
- Your nurse or physiotherapist will encourage you to take regular short walks around the ward.
- Your nurse will help you with personal hygiene, if needed.
- You will be able to dress in your own clothing.

Stage 3 (generally days 3 to 4)

- You will be able to walk longer distances.
- You will be able to have a shower – a nurse can help if needed.
- You should have a better appetite.

Stage 4 (generally day 5)

- You should be able to climb stairs.
- If your mobility is limited, or you are worried about climbing stairs, a physiotherapist will help you with this.
- Plans for your return home will be finalised – including support from social services, if needed.

Stage 5 (generally days 6 to 7)

You will go home.

When can my friends and family visit?

Your friends and family can visit you as soon as you are well enough. You are likely to be very tired after your operation and we suggest that you only have 2 visitors at a time.

To reduce the risk of infection in hospital, visitors should always wash their hands before and after visiting you. They should also use the hand cleansing gels which are at the end of every bed and at the entrance to the ward. Please ask your friends and family not to visit you if they are feeling unwell.

Going home

When will I go home?

Different people take different amounts of time to recover after heart surgery. It is difficult to predict exactly when you will go home. Most people are ready to go home a week after their operation.

What will happen before I go home?

We know that leaving hospital after an operation can be both a happy and a worrying time. Our staff will do everything they can to make you feel prepared.

Different members of our team will discuss with you what to do to help your recovery back at home. We will give you a 2-week supply of your medicines and a copy of your discharge summary that we also send to your GP.

We have a booklet called **After your heart operation** about going home after your heart operation. We usually give you this to read before your operation. If you have not received a copy, please ask for it when you are admitted to hospital.

Getting home

You will not be able to drive for at least 6 weeks after your operation, so please arrange for someone to take you home. If you are planning to use public transport, please make sure that someone is able to travel with you.

Parking

Royal Brompton Hospital has no parking for patients and relatives.

There are 3 disabled parking spaces on the Sydney Street site, which are available on a first-come first-served basis and are limited to stays of 4 hours.

There is metered parking on the streets around the Sydney Street site, which varies from a maximum stay of between 2 and 4 hours.

The parking attendant will allow you to park in front of the main entrance of the hospital for 15 minutes if:

- if you are dropping someone off who is being admitted for heart surgery
- picking someone up who has had heart surgery

If there is no space, you may be asked to park in one of the metered bays on the street until a space becomes available.

Hospital transport

We can only arrange hospital transport for people who are in medical need and cannot get to and from our hospitals in any other way. Unless you have a medical need for hospital transport, you will be asked to make your own arrangements.

Contact us

Please contact us if you have any questions about coming into hospital, your surgery, or recovering after the operation.

Phone the pre-assessment team on **020 7351 8497** Monday to Friday, 9am to 4pm.

Your notes

If you have concerns about any aspect of the service you have received in hospital and feel unable to talk to those people responsible for your care, call PALS on:

- Royal Brompton Hospital – 020 7349 7715
- Harefield Hospital – 01895 826 572

You can also email gstt.rbhh-pals@nhs.net. This is a confidential service.

Royal Brompton Hospital
Sydney Street
London
SW3 6NP
Phone: 0330 12 88121

Harefield Hospital
Hill End Road
Harefield
Middlesex
UB9 6JH
Phone: 0330 12 88121

Website: www.rbht.nhs.uk

Royal Brompton and Harefield hospitals are part of Guy's and St Thomas' NHS Foundation Trust

Language and accessible support services

If you need an interpreter or information about your care in a different language or format, please contact the department your appointment is with.

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