Royal Papworth Hospital
NHS Foundation Trust

Aortic Surgery

Patient's guide and
agreement to consent form

This document contains a consent form which your surgeon will go through with you and ask you to sign if you are willing to proceed.

You will be given this booklet which will include a copy of the consent form.

This information booklet has been prepared to help you and your relatives understand more about your heart operation. It also gives you general information about what to expect from the time of your admission to your discharge home from Royal Papworth Hospital, and some practical advice on what to do when you get home.

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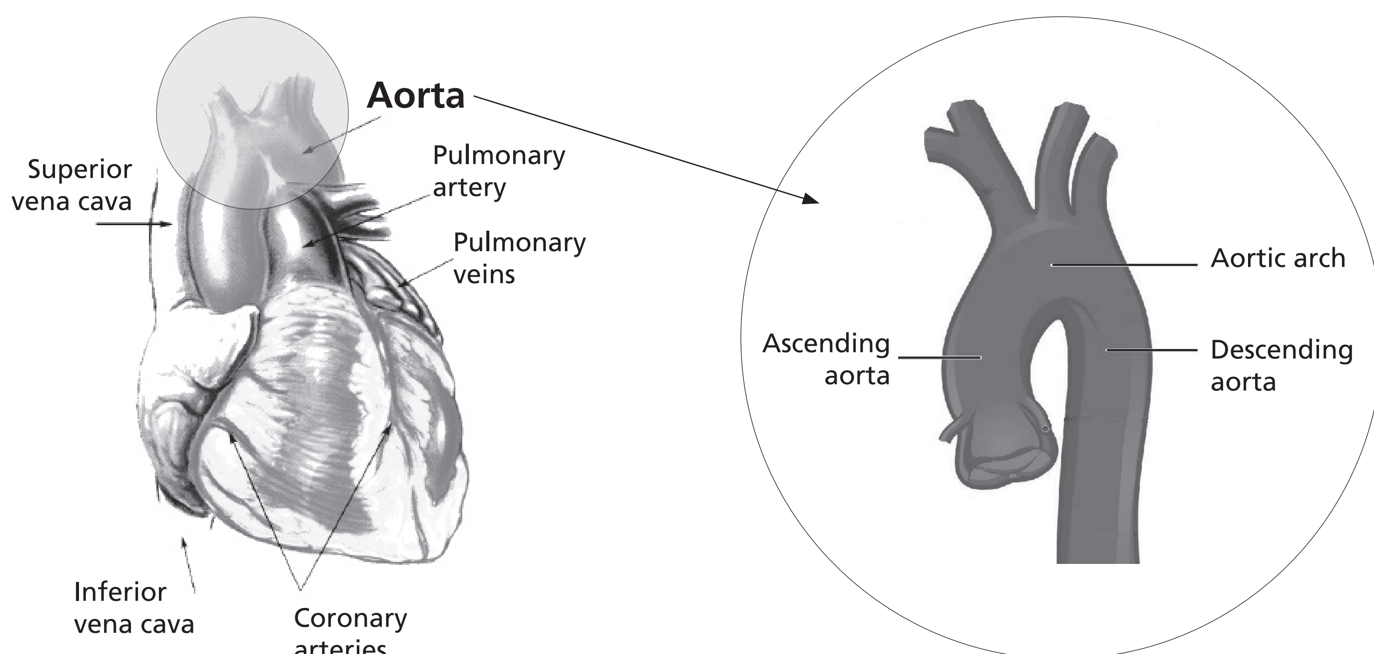
Your heart and how it works

The heart is a muscular pump. The right side of the heart receives blood from the body and pumps it to the lungs. There the blood picks up the oxygen that you have breathed in (all living tissues need oxygen to survive and they receive it from a network of blood vessels that lie within the lung).

The left side of the heart receives this oxygen-rich blood from the lungs and pumps it to all parts of the body. This is a continuous process.



Aneurysms

Aortic and ventricular aneurysm

An aneurysm is a ballooning of a blood vessel caused by a weak spot in the blood vessel wall. In the case of an aortic aneurysm the ballooning occurs in the main artery (the aorta) that leaves the heart.

I have been diagnosed with a thoracic aortic aneurysm. What does that mean?

The aorta is the main blood vessel carrying blood from the heart to the body. The thoracic aorta is the part within the chest. It starts at the aortic valve and goes up the front of the chest (ascending), arches to the back (arch) and goes down the back of the chest (descending) into the abdomen.

An aortic aneurysm is a swelling of the aorta, typically to more than twice the normal size.

Why is this a problem?

Most aneurysms are picked up incidentally - while investigating some other condition. An aneurysm implies a weakness in the aortic wall.

As the aneurysm expands, the pressure exerted on the vessel wall increases and there is a risk of rupture or tear (dissection) in the aortic wall. Infrequently, aneurysms actually cause symptoms themselves, due to the swelling pressing on adjacent structures (difficulty swallowing, hoarseness or even pain), or if the aortic wall is stretched this may also cause pain.

Will I need surgery?

Each patient is unique. Your surgeon will assess the risk of your aneurysm rupturing or tearing. They will balance this risk against the risk of an intervention. In some cases intervention will mean surgery, in some cases intervention will be placement of a stent via the leg artery, and in some cases it will be necessary to perform both surgery and stenting.

Often, when planning for surgery unsuspected problems in the heart will be identified and will need to be addressed at the same time, for example aortic valve replacement or coronary artery bypass grafting.

What does surgery involve?

Surgery on the ascending aorta or arch requires an incision through the breastbone, the use of a heart-lung bypass pump to take over the work of the heart and lungs temporarily, cooling the temperature of the whole body, and special techniques to monitor and protect the brain and maintain its blood supply.

Surgery on the descending aorta requires an incision between the ribs on the left side, the use of cardiopulmonary bypass, and special techniques to monitor and protect the spinal cord and maintain its blood supply.

What are the potential risks?

There is a risk of death from any operation, and aortic surgery is no exception. Your surgeon will assess your individual risk based on the intervention required for your particular aneurysm, your age and any other medical conditions you may have, and whether you require any additional procedures.

Typically, the risk is in the range of 2-10%, although in some patients it may be higher. There is also a risk of stroke or paraplegia which is particular to aortic surgery and is discussed in the next paragraph.

Stroke and paraplegia

Patients with thoracic aortic aneurysms are very likely to have co-existing problems to the blood supply to the brain and spinal cord, although they may not have been aware of any signs or symptoms of this.

The surgical procedure to cut out the aneurysm and replace it with a synthetic graft, involves interrupting the blood flow to the brain or spinal cord and then the blood vessels supplying the brain and spinal cord are re-implanted into the graft. This carries a risk of injury to the brain (called a stroke), or an injury to the spinal cord (which could cause paraplegia).

A stroke can manifest as a weakness or paralysis in part of the body (face, arm, leg), difficulty with speech or understanding, or a generalised confusion.

Paraplegia can manifest as a weakness or paralysis, and a loss of feeling in the legs leaving the patient needing a wheelchair. There may be a loss of bladder and bowel control and of sexual function.

In both these settings there may be some recovery, especially early after the first symptoms but there is always the risk that the complication will be permanent.

Risk of stroke 1-10%
Risk of paraplegia 1-15%

If the surgery carries a significant risk of paraplegia, then your anaesthetist may place a spinal drain to improve the blood supply of the spinal cord during the operation.

The placement of the drain itself carries a small risk of injury to the spinal cord which could result in paraplegia or neurological injury (loss of sensation, reduced motor function), either directly or from bleeding around the drain.

However, the benefit of placing a spinal drain is believed to be greater than the risk of potential injury associated with it. As with the placement of any device into the body there is the potential for infection such as meningitis or insertion site infection, and all precautions and sterile procedures are followed in order to minimise this risk.

For some cases, the use of spinal monitoring called Motor Evoked Potential (MEP) may be required. It involves the placement of a number of electrodes in your scalp and the legs (once you are anaesthetised), so the spinal cord can be stimulated to check its function.

There could be minor bruises and skin damage associated with insertion of the electrodes. This monitoring will be removed after the operation before you wake up.

Hoarseness

Voice change is a particular risk of surgery on the aortic arch and upper descending thoracic aorta. This is due to a nerve to the left vocal cord which passes under the arch very close to the aorta. It is especially at risk in redo operations where scar tissue has already formed.

There may be some recovery up to six months after surgery but there is always the risk that the complication will be permanent.

Risk of hoarseness 1-10%

Other risks associated with major cardiothoracic surgery

During heart (and some lung) operations the body is cooled and warmed by the heart lung machine (cardiopulmonary bypass machine). To do this the bypass machine is connected to a heater/cooler unit, which is kept in the operating theatre.

Tests on these heater/cooler units in Europe and the UK have revealed a growth of a Mycobacterium species (which is a type of bacteria that is common in the environment but does not frequently cause human infections), with the potential for growth of other organisms.

There have been reports of a particular organism called Mycobacterium Chimera causing serious infections in a very small number of patients having operations on their heart valves, in some cases several years after the operation.

In the United Kingdom a small number of such infections have been reported since 2007. Given that around 35,000 heart operations on bypass are performed each year of which approximately 15,000 have been heart valve operations, this represents a very small risk.

This level of risk is so small that surgery should not be delayed, as the risks of delaying surgery are greater than proceeding.

Further reading: www.gov.uk/government/collections/mycobacterial-infections-associated-with-heater-cooler-units

Other risks

In addition to the risks that have already been described on page 2 and page 3, there is also a small but serious risk of bleeding (5-10%) and infection (5-10%). After cardiac surgery, one in three patients may develop a fast, irregular heart beat (called 'atrial fibrillation') which is usually treated with medication.

It is not uncommon after this type of surgery for patients to develop temporary kidney problems, called acute kidney injury. At Royal Papworth during 2014/2015 this was detected in about 30% of patients. This is diagnosed by changes in blood tests and/or a reduction in urine output.

It is important that you are well hydrated prior to surgery and the ward nurses will encourage you to drink water up until two hours before your anticipated operation is due to start.

Some patients will require a longer stay in CCA due to the increased complexity of their surgery. This may be for a few days or even a few weeks. In these patients a number of the vital organs may need to be supported temporarily, including the:

- Heart - using special devices or certain drugs
- Lungs - using artificial mechanical ventilation (breathing machine) or even a tracheostomy (tube in the windpipe)
- Kidneys - using a dialysis machine

Most patients notice that their short-term memory and thinking processes are rather slow to begin with, but usually this returns to normal within two months.

Preparation for your operation

Pre-admission
Because we know that coming in for your surgery can be worrying, Royal Papworth Hospital holds a pre-admission morning where you, accompanied by a relative or friend, are invited to the hospital to learn more about what to expect during your stay in hospital.

Most patients will attend the pre-admission clinic approximately one to two weeks before their surgery.

The clinic, which is run by the cardiac support nurses, is to give you and your relative the opportunity to find out more about your operation and your recovery. It also provides an opportunity for you to talk about any worries and anxieties you may have. You will meet some of the staff and can familiarise yourself with the hospital before you are admitted.

On arrival you will be greeted by one of the clinic coordinators, who will briefly explain what will happen to you during the morning.

During the pre-admission clinic you will have the following tests:

- **Chest X-ray**
  To look at the size and shape of your heart and the condition of your lungs.
- **Electrocardiogram (ECG)**
  This shows the electrical activity of the heart.
- **Blood tests**
  A blood sample is taken from your arm and various tests are carried out including your blood group.

You will also see the following people at the pre-admission clinic:

- A nurse will go through your medical history and any personal issues that may affect your discharge home.
- A cardiac support nurse will examine you and ask questions about your illness. You can discuss any concerns or questions you might have about your operation with the cardiac support nurse.
- A pharmacist will discuss your medication with you and will advise you if there are any medications you need to stop, and for how long they need to be stopped before your surgery.
- Your procedure will involve a general anaesthetic. An anaesthetist will assess you and tell you about the drugs that will be given to you before your operation and you will have an opportunity to ask questions. By signing the consent form you are consenting to receiving a general anaesthetic.

You will also be shown a film illustrating:

  - How to prepare for surgery - including support in stopping smoking, fitness and deep breathing exercises and dietary advice.
  - What to expect during your hospital stay - including physiotherapy help with preventing strain on your chest wound when getting up, climbing stairs and walking.
  - Your discharge and recovery - including the need to plan enough support at home.

- Trainees - Royal Papworth is a teaching hospital. Trainees from many professions are involved at all levels, from student nurses and doctors to specialist surgeons and anaesthetists. However, all training is done under close supervision. All Royal Papworth professionals (whether they are in training or not) only do tasks that they are competent to do.

Cancellations

On occasion it may be necessary to cancel your operation at short notice due to emergencies, though we do our best to ensure this doesn't happen. Your doctor and nurse will come and speak to you about what happens next if this occurs, and will endeavour to reschedule your surgery as soon as possible.

Blood transfusion

When having surgery it is likely that you will lose some blood. If only a small amount is lost your body will naturally replace this over the next few weeks. If more blood is lost, it may be necessary for you to have a transfusion so that you do not suffer any ill effects. Although blood transfusion is quite safe, there are some potential risks associated with this treatment. Your doctor or nurse will explain these risks to you and will offer you an information leaflet 'PI 10 - Receiving a transfusion - a patient's guide'.

In the UK the risk of contracting a viral infection, such as hepatitis or HIV from blood transfusion is extremely small. Very rarely patients receiving blood transfusion may experience an allergic reaction or develop other complications, such as haemolysis (breakdown of red cells in your blood) or a bacterial infection. The actual risk of contracting vCJD through blood is unknown but appears to be extremely small. There is also a very small risk of receiving unsuitable blood, however there are stringent procedures in place to minimise this risk.

By signing the consent form, you are consenting to receiving a blood transfusion. If you do not wish to receive blood or blood products please make this known to your consultant.

If you receive a blood transfusion, you will be ineligible to donate blood in the future.

X-rays and other images

X-rays, other medical images and photographs may be used in your treatment. They may also be used in teaching or research. If this happens, your confidentiality is guaranteed.

On admission to hospital

Please follow the instructions detailed in your letter. If you are coming in the day before your surgery, please report to the main reception of the hospital.

If you are coming in on the same day of your surgery please report directly to the Day Ward reception. Private patients please report directly to main reception.

Who does the operation?

The operation is done by a team which includes surgeons, anaesthetists, surgical care practitioners, nurses, operating department practitioners and perfusionists.

Unless there are exceptional circumstances or emergencies, your own consultant surgeon will be a member of that team and will take overall responsibility for the conduct and outcome of the operation. We cannot guarantee that a particular person will perform the procedure. The person will, however, have appropriate experience.

Just before the operation

Hair removal
It is very important that you DO NOT shave or remove hair from your chest, arms, legs or groin as this will be done in hospital. Hair harbours a certain amount of bacteria, therefore, it is necessary for areas that are going to have an incision, or a drip (e.g. forearm) to have the hair removed safely, to prevent infection. Hair removal will be carried out either the night before or on the morning of your surgery by a member of staff.

Washing
The night before and the morning of your surgery you will be asked to wash with a special wash solution. This will be supplied to you from the pre-admission clinic if you are coming in on the same day as your surgery. YOU WILL NEED TO WASH YOUR HAIR WITH IT AS WELL.

Please follow the showering guidance available on the wards. This wash solution will help reduce the amount of bacteria on your skin before surgery and will help reduce the risk of your wound developing an infection.

Hand hygiene
Keeping your hands clean is an effective way of preventing the spread of infection. Please remember to wash your hands thoroughly and regularly, especially after using the toilet. This will reduce the number of bacteria on your hands.

Eating and drinking
As previously stated, It is important that you are well hydrated prior to surgery and the ward nurses will encourage you to drink water up until two hours before your anticipated operation is due to start.

Same day admissions
At 05:00 please have a light breakfast (i.e. tea and toast) and take any medications.

For all admissions the day before your surgery - *y*ou may continue to eat and drink as normal before you come into hospital.

Please affix patient label or complete details below.

Full name:

Hospital number:

NHS number:

DOB:

Consent 0029
Patient agreement to aortic surgery

Intended procedure/surgery

____

____

____

Statement of health professional

(To be filled in by health professional with appropriate knowledge of proposed procedure, as specified in consent policy). I have explained the procedure to the patient. *In particular I have explained:*

The intended benefits:

....

....

Significant, unavoidable or frequently occurring risks (see page 3).

Death .... %
Stroke .... %
Paraplegia .... %
Bleeding .... %
Infection .... %
Irregular heartbeat .... %
Need for a pacemaker .... %
Myocardial infarction .... %
Hoarseness .... %
Prolonged stay in critical care

Other ....

Any extra procedures, which may become necessary during the procedure:

☐ Blood transfusion (see page 5)

☐ Other procedure - please specify below:

....

....

I have discussed what the procedure is likely to involve, the benefits and risks of any available alternative treatments (including no treatment) and any particular concerns of this patient.

Consultant/Performer

Signed: ....

Date: ....

Name (PRINT): ....

Job title: ....

Contact details

If you require further information at a later date, please contact switchboard on 01223 638000 and ask to speak to your consultant's secretary.

Statement of patient

Please read the patient information and this form carefully.

If your treatment has been planned in advance, you should already have your own copy which describes the benefits and risks of the proposed treatment. If not, you will be offered a copy now.

If you have any further questions, do ask - we are here to help you. *You have the right to change your mind at any time, including after you have signed this form.*

- **I understand** what the procedure is and I know why it is being done, including the risks and benefits.
- **I understand** that the procedure requires a general anaesthetic and have read the information leaflet called 'Your anaesthetic for major surgery' (PI 170) and had the opportunity to ask questions.
- **I agree** to the procedure or course of treatment described on this form and have read this information leaflet on aortic surgery (PI 174) and had the opportunity to ask questions.
- **I agree** to the use of photography for the purpose of diagnosis and treatment and I agree to photographs being used for medical teaching and education.
- **I understand** that any tissue removed as part of the procedure or treatment may be used for diagnosis, stored or disposed of as appropriate and in a manner regulated by appropriate, ethical, legal and professional standards.
- **I understand** that any procedure in addition to those described on this form will be carried out only if necessary to save my life or to prevent serious harm to my health.
- I have listed below any procedures **which I do not wish to be carried out** without further discussion:

....

....

Please affix patient label or complete details below.

Full name:

Hospital number:

NHS number:

DOB:

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- I have been told in the past by Public Health that I am at increased risk of CJD (Creutzfeldt-Jakob disease) or vCJD (variant Creutzfeldt-Jakob disease).

☐ Yes *(Health professional to refer to Trust CJD procedure DN92.)*

☐ No

Patient

Patient signature: ……………………………

Date: ……………………………

Name (PRINT): ……………………………

Confirmation of consent

(To be completed by a health professional when the patient is admitted for the procedure, if the patient has signed the form in advance).

On behalf of the team treating the patient, I have confirmed with the patient that they have no further questions and wish the procedure to go ahead.

Signed: ……………………………

Date: ……………………………

Name (PRINT): ……………………………

Job title: ……………………………

Statement of interpreter (where appropriate). I have interpreted the information above to the patient to the best of my ability and in a way which I believe he/she can understand.

Signed: ……………………………

Date: ……………………………

Name (PRINT): ……………………………

A witness should sign below if the patient is unable to sign but has indicated his or her consent. Young people/children may also like a parent to sign here (see notes).

Signed: ……………………………

Date: ……………………………

Name (PRINT): ……………………………

Important notes (tick if applicable).

☐ Patient has advance decision to refuse treatment (e.g. Jehovah's Witness form)

☐ Patient has withdrawn consent (ask patient to sign/date here)

Patient signature: ……………………………

Date: ……………………………

Name (PRINT): ……………………………

After your operation

The Critical Care Area (CCA)
Following your surgery you will be cared for in CCA. A member of the Critical Care staff will telephone your partner/relative when you arrive in the CCA.

Monitoring
During your stay you will be monitored and observed closely. You will have a nurse with you most of the time and she/he will explain everything that is going on.

While you are anaesthetised (asleep) you will be attached to a breathing tube and machine. As you wake up the breathing machine will be disconnected and the tube will be removed to allow you to breathe by yourself. An oxygen mask will be placed over your mouth and nose.

Various types of equipment will be used to record your heart rate and to monitor your progress.

There will also be:

- A drip in the side of your neck and in each arm. These are used to give you your medications including a regular painkiller.
- Two or three chest drains at the base of your wound to drain any excess fluid left from the operation.
- A small tube in your bladder to drain your urine, this is called a urinary catheter.
- Sometimes patients have some very thin wires protruding from their abdomens. These are pacing wires and are covered by a dressing and will be removed before you go home.

Most of these drips and tubes are put in while you are anaesthetised. They will be removed over the following few days after your surgery.

Visiting/contact

Family/partners (maximum of two visitors per patient) are welcome to visit after the patient has returned from theatre and has been settled in to the CCA. Alternatively the family/partner can telephone at any time and will receive a report from the individual nurse who is caring for the patient.

Post-operative stay in the CCA

Usually patients stay in the CCA overnight and will return to the ward with:

- Oxygen mask
- Drip attached to neck
- Urinary catheter

Post-operative care on the ward

On your return to the ward you will be receiving regular painkillers. It is very important that you let the nursing staff know if you are in pain as it is essential for you to be able to cough and breathe deeply in order to avoid a chest infection. It is advisable to take pain relief regularly to prevent pain from occurring.

The physiotherapist will visit you during this time and it is important that you continue with the breathing and limb exercises that he/she has taught you.

Day two onwards
Usually from day two after your surgery, the remaining drip and the urinary catheter will be removed. The physiotherapist will begin to help you with your walking, posture and climbing stairs, ensuring that you are as fit as possible before going home.

You will have a wound in the centre of your chest. Initially this will be covered by a dressing. All ladies will need the added support of their bra.

It is important to report if there is any discharge so that the necessary dressing can be placed over the site. Do not worry as this should resolve after a few days.

Please do not touch your wound, as this could increase the risk of bacteria moving from your hands to your wound. Do not be afraid to ask any member of staff to clean their hands with soap and water or the hand sanitiser and apply gloves before touching your wound.

After surgery you may have to wear special stockings to help the blood flow from your legs and to minimise swelling in the leg wounds. It is also important when resting to keep your legs elevated on the foot stool provided.

You will find that you feel very tired and are sleeping a lot. This is part of the body's way of recovering from major surgery. It is good to try and get back into a normal routine, i.e. sleeping longer through the night, with additional short sleeps in the day. It is not unusual to experience a disrupted sleep pattern for around six weeks after your surgery and some patients can experience vivid dreams and hallucinations during this time.

Initially your appetite will be poor, so just try to eat a little when you can. This helps with wound healing. Indigestion and constipation are also common, as normal function slows down during surgery. Do let your nurse know as he/she can give you medicines to help.

Some patients suffer from nausea as a result of the anaesthetic and the drugs. Do ensure that you inform the nursing staff should this happen to you as it can be treated. You will get up and about quite quickly. Two to three days after surgery you will be able to walk around.

At first you will need help to wash, change and move about. By day three or four you should be able to walk to the bathroom and look after yourself. You may bath or shower if you wish. You will be encouraged to start dressing into comfortable day clothes so please come prepared, including light supportive shoes or slippers.

Before going home you should be dressing in normal clothes, walking outside and up and down stairs.

After-effects of the surgery

Blues day
Commonly patients suffer a day called the 'blues day'. A few days after surgery you may feel low, perhaps tearful for no apparent reason. Don't worry, these emotional changes are a result of having major surgery and generally only last a day or two. Some patients also experience this when they get home.

Pins and needles
Some patients experience pins and needles in their arms and hands. This is normal and should settle over time.

Heart rate
After the operation you may feel your heart beating fast, irregularly or missing a beat (atrial fibrillation). This is common after heart surgery and is a reaction to the heart being handled. You may be attached to a monitor for a short time.

Eyesight
Following heart surgery you may find that your vision is blurred. This is not unusual and is a result of being on the heart-lung bypass machine. This may last a day or two, but may last up to six weeks.

Breathing
You may experience an occasional involuntary intake of breath. This is normal and will decrease with time.

Preventing hospital-associated blood clots (Venous Thromboembolism - VTE)
A hospital-associated blood clot can occur in patients when they are in hospital and up to ninety days after a hospital admission. There are two kinds: a deep vein thrombosis (DVT) that forms in a deep vein, most commonly in your leg or pelvis, and a pulmonary embolism (PE) which occurs if a clot becomes dislodged and passes through the blood vessels to the lungs. The term VTE is used to cover both DVT and PE.

Admission to hospital can increase your risk of developing VTE as patients tend to lie or sit still for long periods of time. On admission, and again as necessary during your stay, you will be assessed for your VTE risk. Most patients admitted to Royal Papworth are given preventative treatment as a matter of routine.

You may be given exercises to perform, special support stockings to wear, and/or anticoagulant medicine ('blood thinners').

There are also ways in which you yourself can help to reduce your risk of VTE:

- Try to get up and walk about as soon as possible and as much as possible - the physiotherapists and nurses will help you with this in the early stages of your recovery.
- Unless you are placed on a fluid-restricted regime, drink plenty of fluid to keep hydrated.
- Try to remember not to sit or lie with your legs crossed. The nurses will remind you!
- As with all aspects of your stay, if you have any queries or concerns, please ask a member of staff.

What happens when I go home?

You may be discharged from the ward within five to ten days following surgery. This depends on the type of operation you have had. The doctors, nurses and physiotherapists looking after you will make sure that you are fully prepared for your discharge and will be happy to answer any questions that you may have.

You will be given a letter to take to your GP explaining what has happened to you during your stay in hospital. During your first week at home it is an advantage to have someone with you.

Should you have any questions or need any advice after your discharge then you are welcome to call the **Cardiac Support Nurse Link Line: 01223 638100**, Monday to Friday 09:00-17:00, except Bank Holidays.

You will receive a letter from the hospital with your outpatient appointment.

If you have not received it within two weeks of being discharged, please contact the Cardiac Outpatients call centre on 01223 638933 between the hours of 09:30-16:00 Monday to Friday.

Medication

You will be sent home with a supply of tablets. When you are ready for discharge your nurse or a member of the pharmacy staff will explain the drugs, which you will need to take at home.

While you were in hospital you will have been offered painkillers (analgesics) on a regular basis.

The breast bone (sternum) will take up to 12 weeks to heal completely. Therefore you may feel pain, tingling or pins and needles in different places across your chest, back and shoulders for some time.

Once you have been discharged, we advise you to keep taking your painkillers on a regular basis. When you feel ready to cut them down, try stopping the ones during the day first, continuing to take them when you get up in the morning and before you go to bed, as this will help to ensure a good night's sleep.

Any other tablets which you need to take home will be explained to you prior to discharge and these will then be reviewed at your clinic appointment.

Wounds

Dissolvable stitches do not need to be removed following surgery. However, if you have had any drains, you will have one stitch per drain that will need to be removed. This is normally performed before discharge, but may be removed by the nurse at your GP's surgery.

Ladies should continue to sleep wearing their bra for a minimum of 6 weeks post their surgery to support the healing chest wound.

You may have a bead at the top and bottom of your chest wound. These will need to be snipped off by your practice nurse.

Once you go home, if you notice that your wound begins to 'ooze', becomes red or 'angry' looking or 'hot and tingly', or if you feel feverish, contact your GP for advice.

If you still require wound dressings on discharge, this will be done either at your home by a district nurse or by the practice nurse at your doctor's surgery.

Patients who have a leg wound, where the vein has been taken, may experience some

numbness along the wound and find that the leg becomes swollen and bruised. This is quite normal and may be helped by putting your foot up on a high stool to rest. The swelling will resolve over a period of time, usually six to eight weeks but in a few cases can take up to six months.

Patients who have an arm wound where the radial artery has been used may find that the hand and wrist may be slightly swollen and may feel numb for a few weeks after surgery.

Resuming activity

Most people find that it takes around six to eight weeks after the operation for them to make a full recovery. Obviously there is considerable variation depending on the severity of the heart disease and the type of operation performed.

In general recovery tends to be quicker after coronary artery bypass grafts than after valve surgery. Age is relevant, since older patients tend to require a longer recovery period than younger patients. As a general rule, do what you can without becoming short of breath and then increase the number and demands of the activities gradually. The physiotherapist will offer you rehabilitation and you will be contacted by them six to eight weeks post-discharge.

Bathing
This can be done as soon as you feel strong enough. You may find it easier to use a shower if one is available, as sometimes getting in and out of a bath may be difficult until the breast bone heals. You may find bathing tiring at first so bath before bedtime.

Housework
Light work (e.g. dusting or drying up) can be introduced into your regime when you feel fit and able for it, usually within the first one to two weeks you are at home.

Gardening
Light gardening such as weeding may be done four weeks after discharge. Mowing the lawn and heavy digging etc. should not be done for 12 weeks. This will allow the breast bone to become stronger after healing.

Work
It should be possible to return to work after two to three months, depending on your job. The decision to return to work should be taken in consultation with your GP and your employer.

Driving
You may drive four to eight weeks after your operation. Your GP will need to agree that you are ready before you resume driving. When you do resume driving expect to feel some heaviness or discomfort around your shoulders or arms as you move the steering wheel.
It is illegal to drive if you are not wearing your seat belt, but you might find placing a cushion or padding under the seat belt is more comfortable. You must inform your insurance company about your operation.

Exercise
Your physiotherapist will give information about how to build some form of exercise into your lifestyle. Action makes the heart grow stronger. After 12 weeks, if the wounds have healed, the following may be resumed:

- **Bowling**
- **Fishing**
- **Walking your dog on a lead**
- **Golf**

Racquet sports and road cycling
Should not be attempted for 12 weeks - if you have an exercise bike this can be used as soon as you feel able.

Gentle swimming
Can be resumed after 12 weeks if the wounds have healed.

Sleep
It is not unusual to experience a disrupted sleep pattern for around six weeks after your surgery.

Sexual activity
Most doctors suggest waiting for around four weeks after the operation before resuming sexual intercourse. It may be a case of confidence and anxiety about your wound. If you remain relaxed and possibly adopt a more passive role then you will return more easily to your normal routine.

As a general rule
Avoid any heavy lifting, pushing or pulling (e.g. vacuuming or carrying the shopping) for the first 12 weeks. This allows time for the breast bone to become stronger after healing.

Cardiac rehabilitation

This aims to give you all the information and support you need to make the best possible recovery. Cardiac rehabilitation usually includes exercise sessions and health promotion. It will help to rebuild your confidence and can be good fun too!

Research has shown that following cardiac rehabilitation people are able to do more, feel more confident, less stressed and enjoy a healthier lifestyle.

Following your stay in hospital you will be referred to your local cardiac rehabilitation team. The team will telephone or write to you and arrange an appointment to discuss you and your progress and ongoing options for rehabilitation. Generally this will be from around six to eight weeks after your surgery.

Health promotion

Diet
It is important to maintain a healthy body weight. Try to eat less processed foods as these tend to be higher in fat and/or sugar and try to increase your consumption of wholegrains, fresh fruit and vegetables. Including more fish and lean white meat and reducing your red meat consumption is also encouraged.

It is advisable to cut down the amount of animal fat in your diet (such as butter and cheese) and replace with plant based oils/ spreads (such as olive oil, rapeseed oil and groundnut oil).

Alcohol
Can be taken in moderation.

In January 2016 the Department of Health made the following recommendation:

- You are safest not to drink regularly more than 14 units per week, to keep health risks from drinking alcohol to a low level.
- If you do drink as much as 14 units per week, it is best to spread this evenly over 3 days or more. If you have one or two heavy drinking sessions, you increase your risks of death from long term illnesses and from accidents and injuries.

www.gov.uk/government/uploads/system/uploads/attachment_data/file/489795/summary.pdf

Note: if you are taking Warfarin anticoagulant tablets, excessive alcohol can interfere with the anticoagulant process, therefore caution is advised.

Smoking
If you have been a smoker, do not be tempted to start smoking again. If you would like help with smoking cessation, the hospital staff will be able to provide details of local QUIT organisations, who offer help and advice. We can refer you to this organisation if you wish.

Monitoring results (audit)

At Royal Papworth Hospital we always try to improve our service to patients and to improve the results of operations. To do this we have to keep a very close eye on operations and on their results. If you have an operation at Royal Papworth the details of the operation and the outcome will be entered into a computer database.

We analyse the data regularly to see how well we are doing and to look for ways to improve. The data are also submitted to national and international bodies which monitor heart surgery. They may be published in medical journals. All information is made completely anonymous to protect your confidentiality.

Guidance for health professionals

What a consent form is for
This form documents the patient’s agreement to go ahead with the investigation or treatment you have proposed. It is not a legal waiver - if patients, for example, do not receive enough information on which to base their decision, then the consent may not be valid, even though the form has been signed.

Patients are also entitled to change their mind after signing the form, if they retain capacity to do so. The form should act as an *aide-memoire* to health professionals and patients, by providing a check-list of the kind of information patients should be offered, and by enabling the patient to have a written record of the main points discussed.

In no way, however, should the written information provided for the patient be regarded as a substitute for face-to-face discussions with the patient.

The law on consent
See the Department of Health’s *Reference* guide to consent for examination or treatment for a comprehensive summary of the law on consent (also available at www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyandGuidance/DH_103643).

Who can give consent
Everyone aged 16 or over is presumed to be competent to give consent for themselves, unless the opposite is demonstrated.

If a child under the age of 16 has ‘sufficient understanding and intelligence to enable him or her to understand fully what is proposed’, then he or she will be competent to give consent for himself or herself. Young people aged 16 or 17, and legally ‘competent’ younger children, may therefore sign this form for themselves, but may like a parent to countersign as well.

If the child is not able to give consent for himself or herself, someone with parental responsibility may do so on their behalf and a separate form is available for this purpose. Even where a child is able to give consent for himself or herself, you should always involve those with parental responsibility in the child’s care, unless the child specifically asks you not to do so.

If a patient is mentally competent to give consent but is physically unable to sign a form, you should complete this form as usual, and ask an independent witness to confirm that the patient has given consent orally or non-verbally.

When NOT to use this form
If the patient is 18 or over and is not legally competent to give consent, you should use ‘Consent form 4’ (form for adults who are unable to consent to investigation or treatment - available from the Department of Health - www.dh.gov.uk) instead of this form.

Legally a patient will not be competent to give consent if:

- They are unable to comprehend and retain information material to the decision and/or
- They are unable to evaluate and use this information in coming to a decision.

You should always take all reasonable steps (for example involving more specialist colleagues) to support a patient in making their own decision, before concluding that they are unable to do so.

Relatives **cannot** be asked to sign this form on behalf of an adult who is not legally competent to consent for himself or herself.

Information
Information about what the treatment will involve, its benefits and risks (including side-effects and complications) and the alternatives to the particular procedure proposed, is crucial for patients when making up their minds.

The courts have stated that patients should be told about ‘significant risks which would affect the judgement of a reasonable patient’.

‘Significant’ has not been legally defined, but the GMC requires doctors to tell patients about ‘serious or frequently occurring’ risks. In addition if patients make clear they have particular concerns about certain kinds of risk, you should make sure they are informed about these risks, even if they are very small or rare.

You should always answer questions honestly. Sometimes, patients may make it clear that they do not want to have information about the options, but want you to decide on their behalf.

In such circumstances, you should do your best to ensure that the patient receives at least very basic information about what is proposed. Where information is refused by the patient, you should document this in the patient’s notes.

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A member of Cambridge University Health Partners

Telephone numbers you may need during your admission to hospital

Main Hospital Switchboard	01223 638000
5 North	01223 638525/01223 638520
5 South	01223 638515/01223 638535
3 South	01223 638304/01223 638306
Critical Care	01223 638400
Cardiac Rehabilitation	01223 638429

Cardiac Support Nurses helpline 01223 638100
(Monday to Friday 09:00 - 17:00 except Bank Holidays)

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