Abdominal aortic aneurysm (AAA) open repair operation

The aim of this leaflet is to help answer some of the questions you may have about having an abdominal aortic aneurysm open repair operation. It explains the benefits and risks of the procedure, as well as what you can expect when you come to hospital. If you have any further questions or concerns, please speak to a doctor or nurse caring for you.

What is an abdominal aortic aneurysm?
Arteries carry blood away from your heart to the rest of your body. Sometimes the walls of an artery can weaken. The pressure of blood flowing through the artery can cause the walls to stretch outwards until they form a balloon shape, and this ‘balloon’ is called an aneurysm. The most common artery to be affected is the aorta, which is the main artery in your stomach. This kind of aneurysm is known as an abdominal aortic aneurysm (AAA).

Why should I have an AAA repair?
If an aneurysm reaches a certain size, then surgically repairing it is advisable as there is a risk of it rupturing (bursting). A rupture can lead to bleeding and even death.

It is important to remember that your surgeon will only recommend treatment for your aneurysm if he or she believes that the risk of the aneurysm bursting is much higher than the threat posed by the operation.

What is an open AAA repair?
The traditional operation involves cutting open the abdomen to replace the aneurysm with an artificial piece of artery (a graft). Occasionally a smaller cut will be needed in one or both groins. This is a major operation and carries some risk. However, it is successful in most cases and the long-term outlook is good. The graft usually works well for the rest of your life.

The alternative operation is an endovascular aneurysm repair (EVAR). This is a minimally invasive ‘keyhole’ surgical procedure. Please see the EVAR leaflet for more information.

The type of operation recommended for you will depend on your fitness and the anatomy of your aneurysm. This will be discussed at your pre-operative appointment.

What happens during the operation?
You will have a cut, either down your stomach (from your belly button to the top of your stomach) or across your stomach.

The enlarged part of your aorta will be replaced by an artificial blood vessel (graft). Sometimes this will be a simple tube or sometimes, as in the illustration below, a branching graft is used.
The aneurysm is closed over the graft at the end of the operation to separate it from the overlying structures.

Your wounds are closed with either stitches under the skin that dissolve, or by metal clips that will need to be removed about 10 days after the surgery.

An abdominal aortic aneurysm

The position of the graft

**Will I feel any pain?**
You will be given a general anaesthetic, which means that you will be asleep during the operation. A tiny needle will be placed in the back of your hand. The anaesthetic is injected through the needle and you will be asleep within a few seconds. You may also have a small tube placed in your back called an epidural, which will help deliver pain relief medication after surgery. Alternatively, you may be given pain relief via a machine that delivers painkillers directly into your vein through a drip. The machine allows you to control the dosage yourself by pressing a button.

**What are the benefits of an open AAA repair?**

- The repair is durable. You are less likely to require further procedures on your aorta than after EVAR (1 in 10 patients require further surgery to repair leaks around the stent after EVAR).
- You are unlikely to need long-term follow-up with X-rays.

**What are the risks?**
As with any major operation, there is a risk of you having a medical complication. You may wish to read our leaflet, [Having an anaesthetic](#) for more information.

Possible complications after the operation include:

**Deep vein thrombosis (DVT) / Pulmonary embolism (PE)**
After any large operation there is a risk of DVT (deep vein thrombosis) or PE (pulmonary embolism). You will be on medication to reduce the risk, but this cannot remove the risk completely. If you do get a DVT or PE, you will need to take a course of tablets (warfarin) to thin the blood for a period of three to six months.
Chest infection
These can occur following this type of surgery, particularly in smokers, and may require treatment with antibiotics and physiotherapy.

Wound infection
Wounds sometimes become infected and this may need treatment with antibiotics. Serious infections are rare, but occasionally the incision may need to be cleaned out under anaesthetic.

Graft infection
Very rarely – in about 1 in 500 patients – the graft may become infected. This is a serious complication, and usually treatment involves removal of the graft.

Fluid leak from wound
Occasionally, the wound in your groin can fill with a fluid called lymph that may leak between the stitches. This usually settles down with time.

Bowel problems
Occasionally the bowel is slow to start working again after the operation. This requires patience. You will be given fluids via a drip until your bowels get back to normal.

Impotence
This may occur in men if nerves in the tummy are unavoidably cut during the operation. This occurs in about 1 in 10 men.

Loss of circulation
Loss of circulation in the legs or bowel, which may need to be treated with further surgery.

These complications are rare, but it does mean that a small minority of patients may not survive their operation or the immediate postoperative period (the period just after surgery).

Nationally, the risk of death from an open aneurysm repair is around 4.3%. In other words, nearly 96 in every 100 patients will make a full recovery from the operation.

Before going into hospital
Before aneurysm surgery, there are a number of tests that need to be done. These are done for two reasons:

- to assess your general fitness for surgery
- to assess your suitability for different types of aneurysm surgery.

The following tests may be done before your doctor decides whether or not to operate:

- blood tests
- electronic heart monitoring (ECG)
- echocardiogram (an ultrasound scan of the heart)
- breathing test
- CT scan (which shows an image of the size and position of your aneurysm)
- chest X-ray.
How can I prepare?
We will send you information about how to prepare for your hospital stay with your admission letter. Please read this information carefully.

We will review your regular medicines when you come to hospital for your pre-admission appointment. If you are taking any antiplatelet medicines (such as aspirin or clopidogrel) or any medicines that thin the blood (such as warfarin or a direct oral anticoagulant (apixaban, dabigatran, edoxaban or rivaroxaban)), then you may need to stop them temporarily before the procedure. If you are taking any medicines for diabetes (such as metformin) or using insulin, these may also need to be stopped temporarily or the dose altered near the time of the procedure. You will be fully informed of any changes that you need to make to your medicines at the pre-admission clinic – please ask us if you have any questions.

We will ask you to fast prior to your surgery. Fasting means that you cannot eat or drink anything, except water. We will give you clear instructions on when to start fasting. It is important to follow these instructions. If there is food or liquid in your stomach during your operation, it could come up to the back of your throat and damage your lungs. Please continue to take your regular medicines with a sip of water before 6am on the morning of your operation, unless you have been told otherwise.

Consent - asking for your consent
We want to involve you in decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form. This states that you agree to have the treatment and you understand what it involves.

If you would like more information about our consent process, please speak to a member of staff caring for you.

What happens after the operation?
After the operation, you will spend the first night in overnight intensive recovery (OIR) so that your progress can be closely monitored. It is usually necessary for you to remain on a breathing machine for a short period after the operation but you will be taken off this as soon as possible.

The following morning you will see your surgeon and the anaesthetist, and they will decide whether you will be transferred to the intensive care high dependency unit (HDU) or to V-Bay (vascular bay) on Luke Ward. This will depend on the amount of monitoring you require. Following this sort of surgery, the bowel can stop working for a while, but you will be given all the fluids you require through a drip until your bowel can cope with fluids by mouth.

As with any major open surgery, there will be some blood loss and it may be necessary for you to have a blood transfusion.

As you start to recover over the following few days, the various tubes will be removed. If you are in intensive care or HDU, you will return to Luke Ward until you are fit enough to go home (usually 8–10 days after the operation). You will be seen by the physiotherapist every day from the first day of your operation to help you get moving. It is important that you get out of bed and practice deep breathing in order to avoid getting a chest infection. You will gradually be reintroduced to food and drink.
What do I need to do after I go home?
If your stitches or clips are the type that need removing, this is usually done while you are still in hospital. If not, we will arrange for either a practice nurse at your GP surgery or a district nurse to remove them and check your wound. Your dressing will also usually be removed before you leave hospital. If you still need a dressing when you go home, we will arrange for a practice nurse or district nurse to change it regularly.

You will feel tired for many weeks after the operation but this will improve as time goes by. In the meantime, you may find the following advice useful:

Exercise
Regular exercise, such as a short walk, combined with rest is recommended for the first few weeks, followed by a gradual return to normal activity.

Driving
You will be able to drive once you can safely perform an emergency stop. This will normally be three to four weeks after surgery, but if in doubt check with your own doctor. You should inform your insurance company that you have undergone major surgery to make sure that you are covered.

Bathing
Once your wounds are dry you may bathe or shower as normal. This will normally be before you leave the hospital.

Working
If you have a job, you should be able to return to work between six and twelve weeks after surgery. Your GP will advise you of this when you see him/her for your fit note (also called a sick note).

Lifting
You should avoid heavy lifting or straining for six weeks after the operation.

Medicines
You will usually be sent home on aspirin and a statin (cholesterol-lowering medicine), if you were not already taking them. This makes the blood less sticky (thick) and reduces your cholesterol levels. If you are allergic to aspirin, or if it upsets your stomach, an alternative drug may be prescribed.

What can I do to help myself?

Smoking
If you are a smoker the single most important thing you can do to help yourself is to give up smoking. Stopping smoking will also help to protect all of your arteries, making it less likely that you will suffer from a heart attack or stroke. Giving up is not easy but there is a smoking cessation service and support groups that can help. Please speak to your vascular specialist nurse or call the Trust stop smoking service on 020 7188 0995, or call the NHS Smoking Helpline on 0300 123 1044.
Activity
Gentle exercise, such as walking and cycling, is recommended to help improve your overall level of fitness. Exercise helps your body to produce healthy cholesterol and this helps to protect your arteries against bad cholesterol.

Blood pressure
High blood pressure is known to increase the risk of an aneurysm rupturing. It is very important that you have your blood pressure checked regularly, at least every six months. If you have been prescribed medication for high blood pressure, you must make sure that you take it according to the instructions given.

Diabetes
If you have diabetes, it is important that your blood sugar levels are well controlled.

Blood cholesterol (fatty substance in your blood) levels
You should eat a healthy, balanced diet and try to lose any excess weight. It is important to reduce the level of cholesterol in your blood. Your vascular nurse can refer you to a dietitian if needed. You may be prescribed medicine to help lower your cholesterol level (such as a statin) and low-dose aspirin to help prevent blood clots from forming.

Will I have a follow-up appointment?
After you have left hospital, you will receive an appointment to see your surgeon approximately six weeks later.

You will contacted by one of our aortic vascular nurse specialists shortly after you have been discharged to see how you are getting on.

Contact us
If you have any questions or concerns before or after you have left hospital, please contact:

Aortic pathway clinical nurse specialist, t: 07824 523 807 (Monday to Friday, 8am-4pm)

Vascular specialist nurses, t: 07825 503 902 (Monday to Friday, 8am-4pm)

You can also contact Luke Ward, t: 020 7188 3566 or Sarah Swift Ward, t: 020 7188 8842 (24 hours) and speak to the ward sister or nurse in charge.

The above contacts can put you in touch with a vascular consultant if needed.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.guysandstthomas.nhs.uk/leaflets

Pharmacy Medicines Helpline
If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

Pharmacy Medicines Helpline, t: 020 7188 8748 9am to 5pm, Monday to Friday