West Yorkshire Association of Acute Trusts

NHS

Abdominal Aortic Aneurysm (AAA) Repair

(also known as 'Triple A Repair')

This leaflet is to help answer some of the questions you may have about your procedure. It explains the benefits and risks, as well as what you can expect when you come into hospital.

This information has been put together by clinical representatives from across the acute hospital trusts in West Yorkshire and will be reviewed in September 2025. If you require this information in a different format, please contact your treatment team through the details provided on your appointment letter.

West Yorkshire Vascular Service | WYVaS

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What is the aorta?

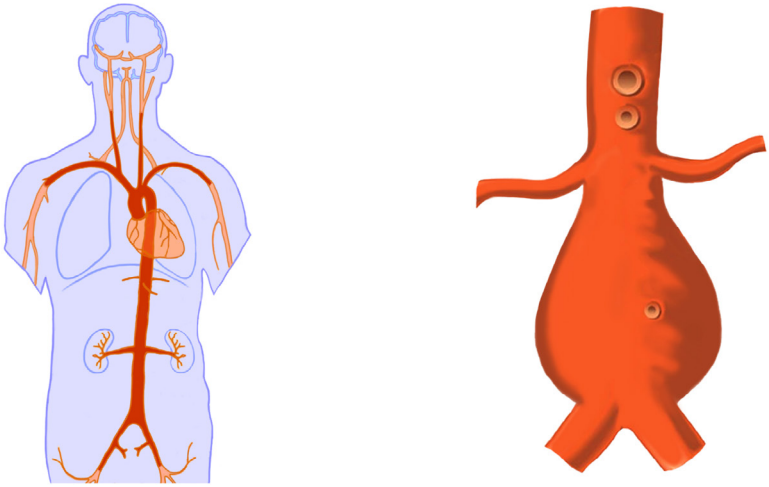
The aorta is the largest artery (blood vessel) in the body, originating from the heart and extending into the lower abdomen. The aorta is divided into four segments carrying oxygen rich blood to all parts of the body.

- Ascending - heart
- Arch - head, neck and arms
- Descending thoracic - chest
- Abdominal - abdomen

What is an Abdominal Aortic Aneurysm (AAA)?

The wall of the aorta is made up of several layers of tissue. Sometimes the wall can weaken, causing the aorta to dilate (enlarge) in size. The dilated segment is referred to as an aneurysm.

An aneurysm can occur in any artery of the body but is most commonly seen in the abdomen. This is known as an Abdominal Aortic Aneurysm (AAA).



Graphical images of the aorta (fig A) and the damage caused by AAA (fig B).

What causes AAA?

Aneurysms can affect men and women of any age. Often, the exact cause of the aneurysm is unknown, however there are a number of potential contributing factors:

- Genetic predisposition (family history)
- High blood pressure
- Hardening of the artery wall (high cholesterol)
- Obesity
- Smoking

The most common AAA patient group is men aged 65 and above with high blood pressure who smoke. 4 out of 10 aneurysms in this patient group will be diagnosed, of which 1% will require aortic repair. In women, the detection rate is six times lower.

How are aneurysms detected?

Aneurysms can take years to develop and, in the majority of cases, do not cause any symptoms. An aneurysm is often found during a routine imaging test performed for an unrelated health complaint, with the majority diagnosed following a CT scan (pictured above) that has been undertaken for another health issue.

The higher risk group (men aged 65 and above) are invited to attend the NHS AAA Ultrasound Screening Programme at their local GP practice.

CT scanner

Symptoms associated with AAA include:

- Sudden onset of severe back, abdominal or so called 'loin-to-groin' pain
- Collapse
- Palpable pulsating sensation in the abdomen

If you have been diagnosed with an AAA and you experience any new abdominal or back pain, you should seek medical attention urgently.

What happens next?

Once developed, an aneurysm will not reduce in size naturally. It will continue to grow until reaching a size at which intervention is required. Most aneurysms grow slowly and remain stable, however larger aneurysms grow quicker as the wall becomes weaker, increasing the risk of a leak or rupture.

To monitor the aneurysm growth rate, an ultrasound is performed at timed intervals, determined by the diameter of the aneurysm.

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Aneurysm sizes and monitoring

- Normal – aortic diameter less than 2.6 - 3cm
- Small/medium aneurysm – aortic diameter 3 - 4.4cm. 6-12 month ultrasound surveillance
- Large aneurysm – 4.5 - 5.4cm. 3 month ultrasound surveillance

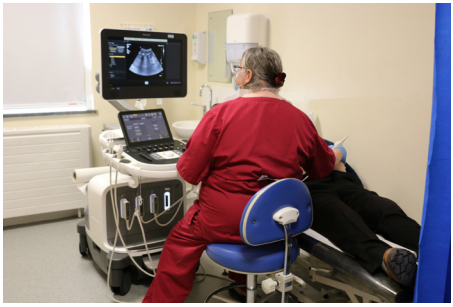
Patients with aneurysms measuring 5.5cm or above are referred to a vascular surgeon to discuss treatment options.

Ultrasound scan

You will be invited by letter to attend for a baseline or surveillance scan. It is important to check for any instructions about eating and drinking prior to your scan.

During the examination, you will be asked to lie flat on your back with your upper clothing pulled up to expose your abdomen. Gel will be placed on your skin and gentle pressure will be applied as the transducer moves across your abdomen.

You may be asked to roll from side to side. Once the diameter has been recorded the gel will be wiped away. The scan usually takes 10 minutes and the result is instant.



Ultrasound scan

Driving

Car drivers

- You must inform the DVLA if the aneurysm grows to 6cm
- Your licence will be suspended at 6.5cm (reinstated after repair)

HGV/Public Service Vehicle Operator Licence holders

- You must inform the DVLA you have an aneurysm
- Your licence will be suspended if your aneurysm reaches 5.5cm in diameter (it will be reinstated following repair)

Health insurance

Once diagnosed, you must inform your insurance provider before you travel.

What is AAA open repair?

AAA open repair is a vascular surgical technique to replace the damaged section of the aorta with an artificial blood vessel (graft) made of fabric. In some cases, a branching graft is also required to extend into the leg. This procedure is performed under a general anaesthetic.

This is a major operation and carries some risk. However, it is successful in most cases and the long-term outlook is good for most patients. The graft usually works well for the rest of your life.

Pre-admission

Before being admitted for surgery, you will have a pre-operative assessment. This will usually be carried out a few days to a week before you are due to have the procedure and is to confirm your fitness for surgery and provide you with further information about your stay in hospital.

Following a physical examination, which may include blood tests, an ECG (electrical tracing of the heart) and a chest x-ray, you will be asked about your medical history and any medication you are taking. It is a good idea to bring any medication with you to this appointment so the details can be noted.

The anaesthetic

The procedure will be performed under general anaesthetic. A small needle will be placed in the back of your hand. The anaesthetic will be injected through the needle and you will be asleep within a few seconds. A machine will then take over your breathing. You may require additional monitoring and fluids during the procedure, so a drip may be administered.

A catheter will also be inserted into your bladder to drain urine while your procedure takes place. Throughout the operation you will be closely monitored by an anaesthetist.

The procedure

The surgeon will cut either across or down the stomach to expose the enlarged segment of the aorta. Occasionally, the surgeon will have to make smaller cuts in one or both groins. The blood flow into the aorta is temporarily clamped above and below the AAA, with the affected segment removed and the artificial graft inserted in its place. The surgical clamps are then removed and blood flow resumes through the new graft and into the legs.

The operation usually takes between four to six hours. The wounds are either closed with dissolvable stitches or metallic clips that are removed around ten days after the operation.

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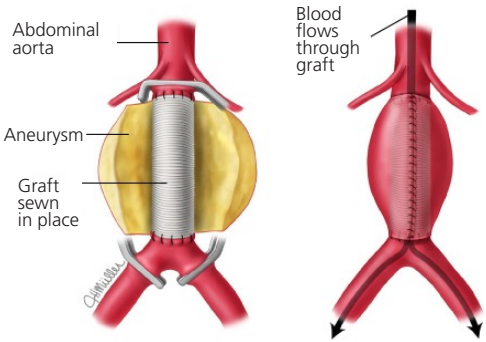
Open Surgery Repair



Recovery

Following your operation, you will usually spend one to two days in an Intensive Care Unit (ICU) or a High Dependency Unit (HDU) so your progress can be closely monitored. You will also remain on a breathing machine for a short period following your procedure, but you will be taken off as soon as you are well enough.

There will be various machines that are used to monitor your heart rate and oxygen levels and you may be connected to tubes containing medication or blood. The medical teams will try and keep you free from pain by giving you painkilling medication.

When you initially wake following your operation, you will notice various machines that are being used to monitor your heart rate and oxygen levels.

To reduce the risk of developing a blood clot, you will be given a small injection each day following your procedure until you are fully mobile and discharged from hospital.

As you begin to recover, the medical team will gradually reduce monitoring until you are well enough to transfer to a standard ward, where you will stay until discharge. This is usually around seven to ten days after your operation.

Returning home

Arrangements will be made with your GP practice or district nurse to check on you and your wound and to remove surgical clips or stitches as required. The recovery rate can be slow, and you may feel tired for several weeks after your operation. It is important you discuss your support options with your surgeon, family and GP in preparation for this.

Aftercare

Exercise – regular light exercise is recommended. Your surgeon will advise you about how much you can do and within what time period following your procedure.

Driving – you are permitted to resume driving once you can perform an emergency stop safely.

Bathing – once your wound is dry, you may shower and bathe as normal.

Heavy lifting –this should be avoided for six weeks after the operation.

Employment – you should seek advice from your GP prior to returning to work. In most cases, you should be able to return around 12 weeks after your surgery.

Medicines – you will be advised about medications prior to your discharge. You may be prescribed aspirin and a statin, which help to thin your blood and avoid the development of blood clots.

An appointment will be made for you to see your consultant as an outpatient to check on your progress and discuss any findings and subsequent treatment.

Complications

All major operations and procedures carry a small risk of serious medical complications. Following AAA open repair surgery, these can include:

- Graft infection
- Stroke
- Heart attack
- Ischaemic (lack of blood) to leg or bowel
- Kidney failure
- Deep Vein Thrombosis (DVT)/Pulmonary Embolism (PE) — blood clots

The risk of serious complication resulting in loss of life from an open repair is 7%.

Your surgeon will only recommend treatment for your aneurysm if it is believed the risk of aneurysm rupture is greater than the threat posed by an operation.

Other complications may include:

Chest infection – may require antibiotics and physiotherapy

Bowel motility – may require a postoperative fluid drip

Slow wound healing and infection – may require antibiotics

Sexual activity – impotence may be experienced by up to 10% of patients.

What can I do to help myself?

If you are a smoker, you should make every effort to stop. Smoking will continue to damage your arteries, increase the risk of heart attack and stroke, and will lengthen your recovery time. You should also try to eat a healthy diet and take regular exercise. All our hospital grounds are smoke-free.

Contact us

If you have any questions or concerns, please do not hesitate to contact a member of the medical team caring for you.

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NHS

The West Yorkshire Vascular Service (WYVaS) is an overarching single, shared regional vascular service to ensure that patients, regardless of where they live within West Yorkshire, have access to the same high-quality treatment.

Service provided by:
Airedale NHS Foundation Trust
Bradford Teaching Hospitals NHS Foundation Trust
Calderdale and Huddersfield NHS Foundation Trust
The Leeds Teaching Hospitals NHS Trust
The Mid Yorkshire Hospitals NHS Trust

West Yorkshire Vascular Service | WYVaS