West Yorkshire
Association of Acute Trusts

NHS

Abdominal Aortic Aneurysm EVAR

(Endovascular Aortic 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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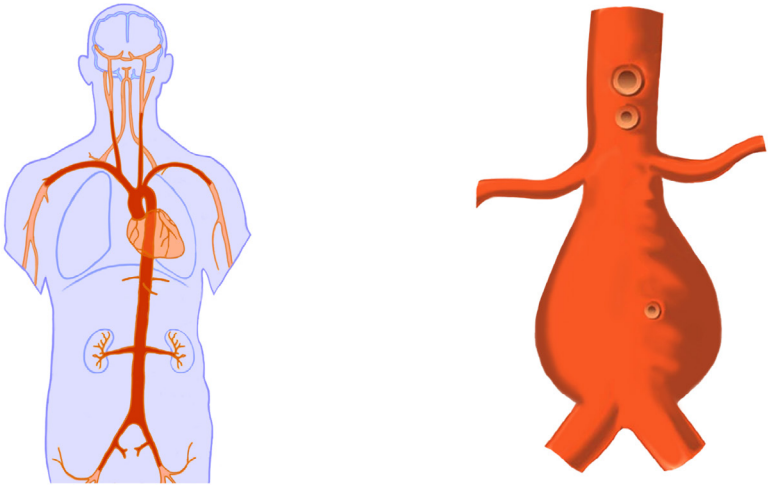
What is the aorta?

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

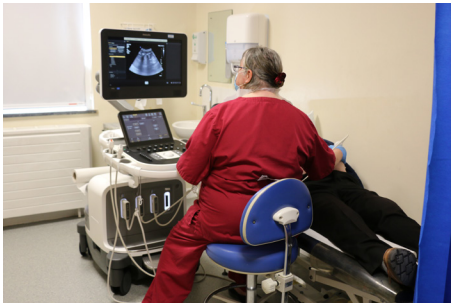
- Normal – aortic diameter less than 2.6 - 3cm
- Small/medium aneurysm – aortic diameter 3 - 4.4cm. 6-12 month ultrasound surveillance
- Large aneurysm – 4.5-5.4cm. 3 month ultrasound surveillance

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 an EVAR?

Endovascular Aortic Repair (EVAR) is keyhole surgery performed by interventional radiologists and/or vascular surgeons. The procedure is carried out via the insertion of a stent into the patient's groin, which is then guided to the site of the aneurysm where a metallic graft is put in place.

EVAR procedures are recommended to prevent AAA rupture, which can carry a high risk of death. Intervention is considered once an AAA reaches 5.5cm in diameter because at this point the risks associated with the procedure balance the risk of a rupture. Under this diameter, patients are monitored by regular ultrasound surveillance.

Pre-admission

You will be given specific instructions relating to fasting (when to stop eating and drinking), washing, and any medication you are taking at your pre-assessment appointment. 'It can be a good idea to bring any medication with you so the details can be recorded. Depending on your medical history, you will be asked to attend as either a day patient or you could be advised to stay as an inpatient for 2-3 days.

The pre-admission assessment is also a good opportunity for you to ask the treatment team any questions you may have about the procedure, although you can discuss any concerns you have at any time

The Anaesthetic

Most EVAR procedures are performed under local anaesthetic, although occasionally a general anaesthetic is required. Routine EVAR procedures usually take less than two hours to perform, without the need for any formal surgical incisions, as small needle punctures are used instead.

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.

Your procedure will be performed in an Interventional Radiology (IR) Suite, similar to the one you can see below.

Interventional radiology suite

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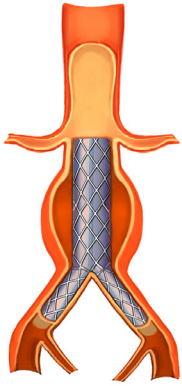

Graphical image of a stent in position as part of an EVAR.

The EVAR

A small hole is made in each groin and the leg arteries are exposed. A catheter (tube) and wire are placed into the arteries and guided into the aorta using x-rays. The catheter navigates beyond the section affected by the aneurysm and is used to position the stent graft over the diseased segment. The stent graft is deployed to 'seal the damaged section' and blood flow resumes through the new graft.

The operation usually takes between two to four hours. The wounds are closed with dissolvable stitches.

Recovery

Following your procedure, your recovery will be monitored on the ward or day-case area.You will notice various machines that are used to monitor your heart rate and oxygen levels. The medical teams will try and keep you free from pain by giving you painkilling medication.

After a few hours you will be able to eat and drink. You will also be allowed to get up and walk around that evening.

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

Returning home

Before you are discharged, your clinician will advise you on what pain relief may be required when you leave hospital.

Most EVAR patients are able to go home the day after the procedure, or within a few days, if everything has gone smoothly.

Recovery can be slow and you may feel tired for a number of weeks after your procedure. It is important you discuss your support options with your radiologist, family and GP in preparation for this period.

Arrangements will be made for you to attend for CT, ultrasound and medical imaging of the stent graft each year for the 10-year period after your EVAR procedure.

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 may resume driving as soon as you are able to perform an emergency stop safely.

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

Heavy lifting – Should be avoided for six weeks following the procedure.

Employment – Speak to your GP prior to any return to work. In most cases you should be able to do this between 6-8 weeks following your procedure.

Medications – You will be advised about this 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 complication. Following an AAA EVAR procedure, 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 death from EVAR is 3%. Around 10% of patients will develop a leak within the stent that will require further surgery.

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 post-operative fluid drip.

Groin infection/leak – Treated with dressings and antibiotics.

Sexual activity – Impotence may be experienced by 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.

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