West Yorkshire
Association of Acute Trusts

NHS

Angioplasty and Stent Insertion

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

Angioplasty and Stent

Angioplasty and stent insertion

Angioplasty and stent insertion are procedures where a fine plastic tube called a catheter is inserted into your artery to help repair any damaged sections and improve the blood supply to organs and different parts of the body.

It is likely that you have already undergone angiography, (CT, MRI or x-ray) or had an ultrasound doppler, to look at the blood supply to a certain organ or part of your body. If this has identified a narrowing (atherosclerosis) or blockage that is affecting the blood flow, then an angioplasty or stent insertion may have been recommended by your vascular specialist.

An angioplasty is a procedure used to widen blocked or narrowed arteries (the main blood vessels carrying blood and oxygen around your body). The term ‘angioplasty’ means using a very small balloon to stretch open a narrowed or blocked artery. However, most modern angioplasty procedures also involve inserting a short wire-mesh tube, called a stent, into the artery during the same procedure. The stent is left in place permanently to help the section of the artery remain open and allow blood to flow more freely.

Compared to surgical interventions, such as bypass surgery, balloon angioplasty and stent placement are much less invasive and are relatively low-risk procedures. They are normally carried out as a day cases using a local anaesthetic. This means you need to spend less time in hospital and will recover more quickly.

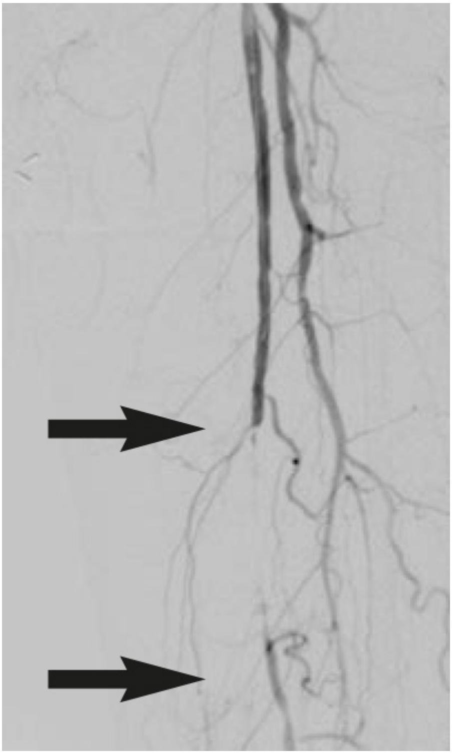


Image shows the blockage in the blood vessel (between the arrows).

What causes arteries to narrow?

Healthy arteries are flexible and smooth on the inside, meaning blood can easily flow through them. As a person gets older, fatty deposits (plaque) can start to build up, hardening the arteries and making them narrower. This process is called atherosclerosis.

As well as ageing, there are several other factors that contribute to the build-up of plaque. These include:

- An unhealthy diet that is high in fat
- High blood pressure
- Smoking
- Diabetes
- Family history

Pre-admission

Before the day of your angioplasty, you will have a pre-assessment appointment to check you are well enough to have the procedure. This may involve taking some blood samples and undergoing some other routine tests.

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 so the details can be noted. If you are taking any antiplatelet medicines (such as aspirin or clopidogrel) or any medicines that thin the blood (like warfarin), then you may need to stop them temporarily before the procedure. If you are taking any medication for diabetes or using insulin, these may also need to be stopped temporarily or the dose altered near the time of the procedure.

You will also be given specific instructions relating to fasting (when to stop eating and drinking) prior to your procedure. You can normally eat up to an hour before your procedure and you can continue to have water.

You will also be asked to bring an overnight bag (e.g. nightclothes, toothpaste, toiletries etc.) with you on the day of your procedure, as you may be advised to stay overnight (even if you are listed as a day-case patient).

The anaesthetic

Most angioplasty procedures are performed under local anaesthetic, which is used to numb the area around the catheter entrance point, which is normally your groin but can also be your wrist or neck. Throughout the procedure there will also be a nurse, or another member of clinical staff, looking after you.

Angioplasty and Stent

Interventional radiology suite

Angioplasty and stent

Once you have arrived in the ward or day case unit, you will be welcomed by the staff and changed into a theatre gown, as well as having your pulse and blood pressure checked. A small tube called a cannula will be placed into a vein in your arm, in case you need any medication during your procedure.

Your angioplasty will be carried out by a radiologist - a doctor who specialises in using medical images to diagnose and treat patients. A radiographer will operate the x-ray equipment. The procedure will take place in an interventional radiology suite, similar to the one pictured, where x-ray machines are used to see the arteries under repair. We need to keep everything as clean as possible during the angiogram, so both the radiologist and the nurse will be wearing theatre gowns and sterile gloves.

You will lie on your back on the x-ray table and a device will be placed on your finger to monitor your breathing and pulse. A cuff on your arm will be used to check your blood pressure throughout the procedure.

An area near to your groin, or occasionally your wrist or neck, will be exposed and cleaned with antiseptic fluid and numbed with local anaesthetic before a small cut is made to access one of your arteries. The rest of your body will then be covered with a large drape or towel and a needle is inserted into your artery. A fine wire is then passed through the needle. The needle is then withdrawn and a short tube called a sheath is placed over the wire into the artery.

The radiologist will then insert a long flexible tube called a catheter through the sheath and advance it to the damaged section of artery. The radiologist will use the x-ray equipment to make sure the catheter and wire are moved into the right position before the wire is withdrawn. A special dye is then injected through the catheter, so the radiologist can see your arteries during the procedure. Please be aware the table and the x-ray camera will move throughout the procedure.

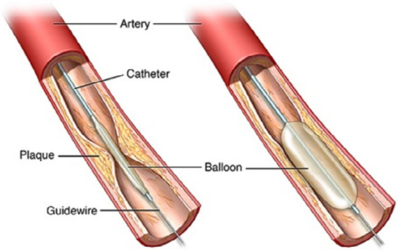
A thin, flexible wire is then passed down the inside of the catheter to the narrowed area of the artery. A small, sausage-shaped balloon, which has been passed over the wire to the narrowed area of your artery, is inflated for about 20 to 30 seconds. This squashes the fatty material on the inside of the artery to widen it and help improve your blood flow. This may be done several times.

While the balloon is inflated, the artery will be completely blocked, so you may experience a little discomfort. Your radiologist will be able to give you pain relief if you find the procedure uncomfortable.

In some cases, the balloon will not keep the blood vessel open wide enough, so we may decide to insert a stent. A stent is a small metallic tube that holds the blood vessel open, so blood can flow normally. The stent will be left inside your artery after the balloon is deflated and removed.

Once the radiologist is satisfied the x-rays show all the information required, the balloon, wire, catheter and sheath will be removed and firm pressure will be applied to the entry point for several minutes to prevent any bleeding. Alternatively, a small plug may be inserted.

You should expect the procedure to take around 45-60 minutes.



Recovery

You will be taken to a Radiology Day Case area on a trolley where the nursing team will carry out routine observations, such as taking your blood pressure and pulse. They will also check the entry site to make sure there is no bleeding. During this period, you will need to stay lying down for between one to six hours. This helps the wound around the entry site to heal.

Depending on your circumstances, you will:

- Remain in the ward or day case unit and be discharged home from there. You will need collecting from hospital and someone must stay with you overnight. If you live alone, we may ask that you stay overnight on a ward
- Be admitted to the ward for an overnight stay. We may ask that you stay overnight if your procedure took longer than expected, your recovery was not straightforward, or you live alone. You will be discharged the next day.

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

You should not drive, or do anything strenuous, for approximately 48 hours after your procedure. Following that, you should be able to return to normal activities. You can shower or bathe as normal 24 hours after the procedure.

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

Angioplasties and stents are very safe and relatively painless procedures but, as with all elements of surgery, there is a small risk of complications.

Possible minor complications include:

- An infection where the cut was made, causing the area to become red, hot, swollen and painful – this may need to be treated with antibiotics
- Nausea
- Minor bleeding or bruising
- A mild reaction to the dye, such as an itchy rash – this can usually be controlled with medicine

Possible serious complications include:

- **Kidney damage due to the dye** – This is usually temporary
- **A heart attack or stroke**
- **Damage to a blood vessel, causing internal bleeding** – further surgery may be needed to repair the damage
- **A serious allergic reaction to the dye (anaphylaxis)** – causing dizziness, breathing difficulties or loss of consciousness

These serious complications are very rare. For example, an estimated 2 in 100 people may experience damage to an artery, but this is often managed by radiologist at the time.

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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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

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