

Transcatheter Aortic Valve Implantation (TAVI)



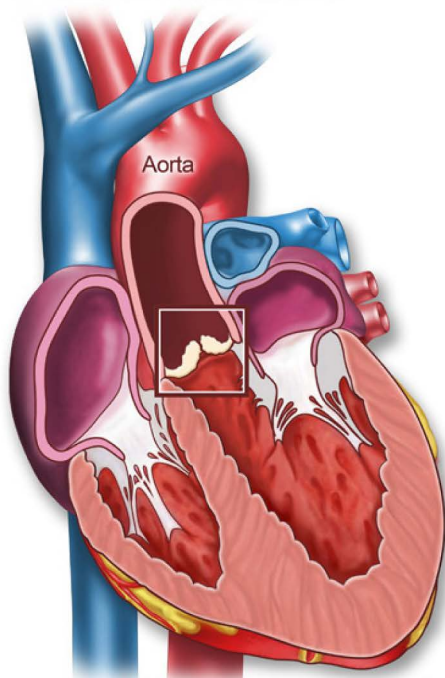
- Important information for all patients requiring a TAVI

About this booklet

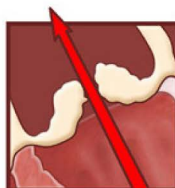
The purpose of this booklet is to tell you about Transcatheter Aortic Valve Implantation (TAVI) which is one of the treatments for a condition called aortic stenosis. This is where the main valve which allows blood to flow from the heart to the rest of the body has become narrowed. This may lead to symptoms of chest discomfort, breathlessness or black-outs. As the valve narrowing worsens, this can cause weakening of the heart muscle's pumping action (sometimes known as heart failure) and may become a life threatening problem with time.

What is aortic stenosis?

Aortic Stenosis



Aortic Valve with Stenosis



Restricted Blood Flow

Normal Aortic Valve



Normal Blood Flow

What causes aortic stenosis?

In most cases, aortic stenosis is due to wear and tear and is more common with age. In some cases, the valve has been abnormal since birth and becomes more narrowed or leaky over time. The valve may also become abnormal due to other conditions such as rheumatic fever.

Can aortic stenosis be treated?

If the valve is not severely narrowed, no specific treatment is required and patients will usually be offered routine check up appointments in the cardiology clinic to keep an eye on the valve. If the valve problem becomes worse, there are three main options:

Option 1 – open heart surgery

The most common treatment is called conventional open heart surgery, where the narrowed valve is removed and replaced with an artificial valve. During conventional surgery, a cut through the breastbone is made to open up the chest and reach the heart. The heart is then stopped artificially to allow the valve operation to take place and then restarted afterwards. During the operation a special bypass machine is used to pump blood around the body. This form of treatment has been performed for many years and is an excellent way to improve the function of the heart. However, it may not be suitable for all patients where other medical problems make the operation too risky.

Option 2 – TAVI

A newer form of valve replacement called Transcatheter Aortic Valve Implantation (TAVI) is now also available. In this procedure, the patient's own valve is not removed but a new valve is placed inside the old one and held in place by a very fine metal frame.

In a TAVI procedure, the new valve is inserted from the blood vessels in the groin or sometimes using a small incision in the chest wall. The heart does not need to be stopped for this procedure and a bypass machine is not used. This is a lower risk procedure than conventional surgery for some patients.

Option 3 – medication

The third option for treatment of aortic stenosis is with medication alone. This is most often with diuretics (water tablets) or other tablets to help the heart pumping action.

Other procedures such as Balloon Aortic Valvuloplasty (BAV) to stretch your own valve may be suggested to assess the heart's response to improving the valve narrowing and to give further information for the medical team to consider.

How do I know which treatment is best for me?

For many patients, valve replacement by conventional open heart surgery is the best option. However some patients have other medical problems which make open heart surgery higher risk and TAVI may be a better option. This is because stopping the heart and using a bypass machine puts some strain on the body and may lead to a high risk of complications for some patients.

Your cardiologist or surgeon will discuss your case and investigations with a group of doctors including cardiologists, cardiac surgeons and cardiac anaesthetists who specialise in aortic valve disease. This group is called a Multi-Disciplinary Team (MDT) and they will consider your case carefully to recommend which treatment they think is most suitable for you.

Before a final recommendation is made, you will need a series of tests to see what treatment is best suited to you. These will include:

- Routine blood tests
- A chest x-ray
- An Electrocardiogram (ECG) (electrical trace of the heart)
- An echocardiogram (ultrasound scan of the heart)
- A Computer Tomography (CT) scan of the main blood vessels
- An angiogram. This is a special x-ray test in which thin tubes are inserted through the blood vessels in wrist or groin under local anaesthetic. Dye is injected through the plastic tubes to show up the blood vessels around the heart.

You may also need additional tests including:

- A Trans-Oesophageal Echocardiogram (TOE). This is a more detailed ultrasound scan of the heart where you are asked to swallow a thin tube which is used to look at the heart through the gullet.
- An ultrasound scan of the arteries in your neck
- Lung function tests (breathing tests by blowing into a small tube)

Once all of the tests are complete and your case has been discussed with the MDT, you may be offered open heart surgery, TAVI, or medical treatment with tablets. Your cardiologist will discuss this fully with you.

Before your procedure

If you are suitable for the TAVI procedure, our Nurse Specialist will contact you and explain about the timing of the procedure and reassess your symptoms. You will also be seen by the Consultant and Nurse Specialist at our TAVI clinic prior to your procedure being undertaken. The TAVI team will explain your procedure in more detail and you and your family/carers will have time to ask any questions you may have. Some simple blood tests and heart tracings will be taken as final checks before you come into hospital.

It is also a good idea to think about what extra help you might need from family or friends once you are discharged home and to arrange this in advance. Your individual circumstances will be discussed also at the pre admission clinic in more detail.

How is TAVI performed?

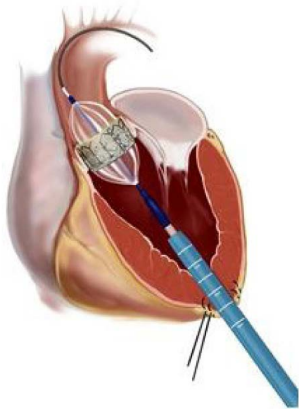
If TAVI is recommended, this is usually performed via the groin (femoral) arteries. However, in some patients these arteries are not suitable and alternative options will be considered. The best option for you will depend on the results of your tests.

If the procedure is performed through your groin, this is usually done under local anaesthetic. You will be awake and able to talk to the team during the procedure, though small doses of sedatives or pain killers are commonly used to minimize discomfort. If your procedure is not carried out through the groin, this will be performed under general anaesthetic and you will be asleep for the duration of the procedure. In such cases, after the valve is inserted, the incision is repaired with some stitches or wires and a small drain is left in place.

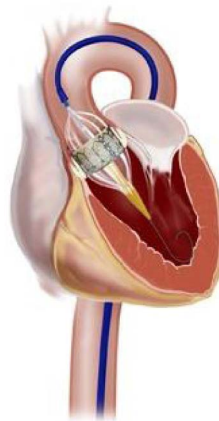
At the end of the procedure, we use a special closure device to stop the artery from bleeding or sometimes some stitches can be used.

You will often have special monitoring tubes placed in the blood vessels in the wrist or neck and a catheter may be inserted into your bladder to allow you to pass water freely during and after the procedure. These may stay in place after the procedure and will be removed as soon as you are stable on the ward following review by the doctor.

If you are asleep for the procedure you will have a tube passed into the windpipe and a further tube into the gullet to scan the heart during and after the procedure.

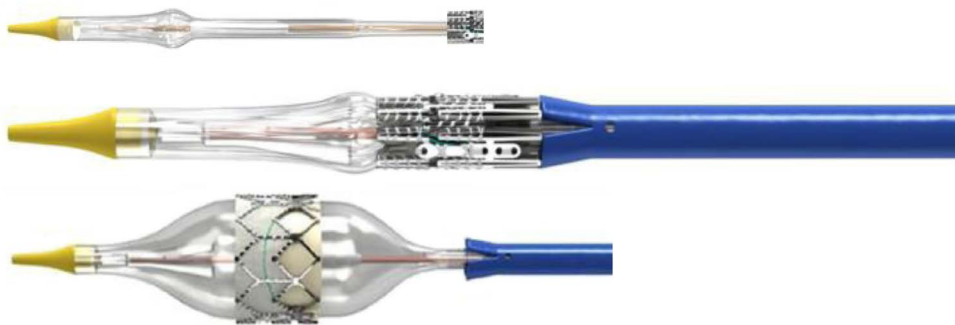


Trans-apical system



Trans-femoral system

In most cases with TAVI, your own heart valve is stretched open with a balloon and the new valve is inserted and expanded by another balloon. In some circumstances other TAVI devices may be recommended.



If you are awake during the procedure, you will have had some sedation but may feel a little light headed when the balloon is inflated or when the TAVI valve is being expanded. This will pass quickly.

The new valve is held in place by the surrounding tissues. The new valve function is then checked by a heart scan before the procedure is completed.

What are the risks of the procedure?

As with any operation, there are risks of complications from this procedure. However, there are also risks from leaving the valve untreated. Your cardiologist or surgeon will weigh up these risks and benefits carefully with you as the risks can vary according to your clinical condition.

Major risks that can occur either during the procedure or the subsequent few days include:

- Death
- Emergency open heart surgery
- Bleeding or damage to the blood vessels needing further surgery or blood transfusion
- Stroke or mini stroke
- Heart attack
- Kidney failure needing dialysis

Other serious risks include:

- Bleeding into the sack round the heart
- Need for a permanent pacemaker because of slow heart beat
- Reaction to dye
- Reaction to the anaesthetic
- Infection

Less serious risks include:

- Abnormal heart beat
- Non emergency further surgery on the valve
- Bruising around the wound
- Valve leak

Rarely, your medical team may find that it is not possible to insert the new heart valve during the procedure. This will usually be for technical reasons which only become obvious when the procedure begins. In this situation, the doctors treating you may decide to perform a valvuloplasty alone. This is when the aortic valve is stretched open with a balloon but the new valve is not inserted.

As all patients will have had detailed investigations before the TAVI procedure, unexpected findings are unusual. The chances that the new valve will not be implanted during the procedure are approximately <5%.

Occasionally patients may become confused or disorientated after the TAVI procedure. This may be related to the procedure itself, the anaesthetic or the patient's general health in combination with a stay in hospital. It commonly settles in a day or so but rarely can be more prolonged.

What happens after the procedure?

After the procedure, you will be transferred to our Coronary Care Unit (CCU) or our Intensive Care Unit (ICU), then later to a cardiology ward. All of your tubes inserted during your procedure will be removed as your condition improves.

Whilst in hospital, you will have a series of further tests which may include ECGs, blood tests, x-rays or scans. The need for these tests will be decided by your cardiologist or surgeon and will depend on your overall rate of recovery.

Normally patients will go home between two and five days after the procedure. This can sometimes be longer if your recovery is slower. Occasionally prolonged stays in our ICU or other wards are required.

We will discuss all your discharge arrangements before you leave so that you have the correct help in place to aid your recovery.

Under normal circumstances we would see you back at our TAVI clinic for review. However, due to the current COVID-19 pandemic, this is currently being replaced by a telephone consultation.

What are the benefits of the procedure?

A successful procedure relieves the narrowed valve and improves the overall heart function. This will usually improve symptoms of chest pain, breathlessness and blackouts. This may improve your overall quality of life and your life expectancy.

Going home after TAVI

When you are ready to go home, you should feel an improvement in your symptoms (eg chest pain, breathlessness and blackouts) and your recovery will continue at home. You may need more support in the short term as the rate of recovery can vary from person to person.

You will be seen by the specialist nurse after the procedure and given advice about driving and travelling. Other general activities and exercise will also be discussed. You will also be referred to the Cardiac Rehabilitation Service, who are a good source of support and will assist you in returning to normal activities.

About driving

The Driver and Vehicle Licensing Agency (DVLA) advises that you should not drive for four weeks after your procedure. You do not need to inform the DVLA about your procedure, but we do advise you to tell your insurance company to avoid problems with any claims you may make in the future. If you hold a commercial license, you will need to inform the DVLA who will advise you further.

About flying

If you had a cut made in your groin during your TAVI procedure, you will be able to fly after one week.

If you had a cut made in your chest during your TAVI procedure, you will be able to fly after two weeks.

Despite this, if you are planning a holiday, it may be better if you wait at least six weeks before travelling, when you will have had your follow up. If you wish to fly within three months of your procedure, check with your doctor and the airline beforehand and ensure you have valid travel insurance.

General advice

We will give you advice on tablets that we ask you to take and any further care of your wound or dressings.

Some patients develop some swelling, mainly in their ankles. If this does occur, contact your General Practitioner (GP) as you may need some extra water tablets.

If we are happy with your condition at our follow up clinic, we would then normally discharge you back to the care of your local hospital. They will then arrange regular follow up care nearer to your home to reduce travelling.

Although most patients notice a definite improvement in their quality of life after having a TAVI procedure, some might have further problems with the heart over time. This is why you will continue to be looked after by your local hospital.

Please contact the TAVI Nurse Specialist or your GP if:

- you have any worries or questions;
- you develop any unusual pain, swelling or bleeding;
- you experience a fever or sharp rise in your temperature; or
- you notice any new swelling particularly in your legs/ankles.

TAVI nurse contact

Monday to Friday, you can contact our Nurse Specialist on 0141 951 5183 or mobile number 07966 382869.

At weekends you can contact CCU on 0141 951 5202 for advice.

Alternatively, you can contact our main reception on 0141 951 5000.

Taking part in research

Research is very valuable in improving care for patients in the future who may have similar problems to your own. New medical or surgical procedures are always subject to a great deal of investigation to find out ways of improving them, or to decide which patients they should be offered to. The team at The Golden Jubilee Hospital is involved with clinical research and you may be invited you to take part in this.

Your cardiologist or surgeon will discuss any potential studies in detail with you. It is important that you are aware that any research is strictly voluntary and that your care will in no way be affected if you decide not to take part.

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Where can I get more information?

- The National Institute of Clinical Excellence (NICE) website:
www.nice.org.uk/guidance/ipg421
- If you do not have access to the internet, your cardiologist can provide a copy of this document
- Your cardiologist or cardiac surgeon
- British Heart Foundation
www.bhf.org.uk/heart-health/treatments/tavi

Notes

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