



Transcatheter Aortic Valve Implantation (TAVI)

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Version 4

>About this leaflet

The purpose of this leaflet 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.

► TAVI animation

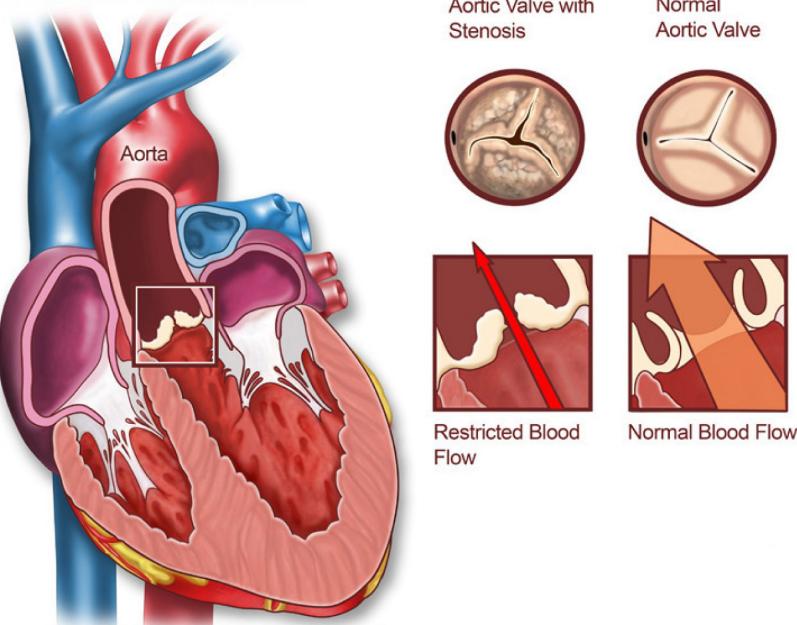
You may find it helpful to watch 2 short animations - one explaining the TAVI procedure and another describing what to expect during your recovery. Scanning the QR code will take you to these clear, step-by-step videos to help you feel more prepared.

When prompted, please enter the access code **gj2110**.



► What is aortic stenosis?

Aortic Stenosis



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 3 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 form of valve replacement called TAVI is 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 is for 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 specialist cardiac nurses 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 may need a series of tests to see what treatment is best suited to you.

These may include:

- Routine blood tests
- A chest x-ray
- An Electrocardiograph (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.

Dental

It is a good idea to have a dentist perform an examination prior to TAVI to rule out any significant decay.

Before your procedure

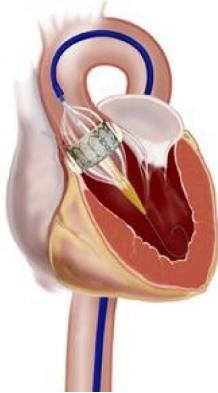
If you are suitable for the TAVI procedure, our Nurse Specialist will contact you and explain about the timing of the procedure and reassess your symptoms. You will also be seen by the Consultant or Nurse Specialist at our TAVI clinic prior to your procedure being undertaken. The TAVI team will explain 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 circumstances will be discussed also at the clinic in more detail.

► How is TAVI performed?

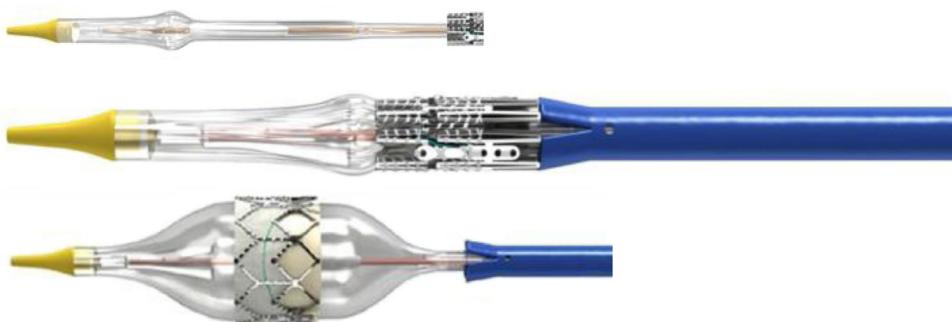
If TAVI is recommended, this is usually performed via the groin (femoral) arteries. However, in some patients these arteries are not suitable and alternative options will be considered. The best option for you will depend on the results of your tests.

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 minimise discomfort.



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 a different type of valve is used which is manually expanded into place. The cardiologist will select the best valve to suit your needs.



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:

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



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 sedation 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 have a short period in recovery. You will be monitored closely for a period of 12-24 hours.

Whilst in hospital, you may 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 and will depend on your overall rate of recovery.

Normally patients will go home 1 to 2 days following their procedure. This can sometimes be longer if your recovery is slower.

We will discuss all your discharge arrangements before you leave so that you have the correct help in place to aid your recovery. The do's and don'ts following your procedure are outlined at the end of this booklet.

You will have a telephone consultation on discharge and a local cardiology and cardiac rehab follow up.

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

This information aims to answer your questions about going back to your everyday activities after your trans-catheter aortic valve implantation (TAVI). If you, or your family have any further questions, or if you would like more information, please do not hesitate to contact the Nurse Specialists on 07966 382869.

Travelling after your procedure

The DVLA advises that you do not drive for 2 weeks after your TAVI procedure. You do not need to inform the DVLA about your TAVI, but we do advise you to tell your insurance company to avoid problems with any claims you may make in the future. If you have problems with your insurance, the British Heart Foundation (BHF) will be able to give you details of insurance companies. You can call the BHF on 0845 070 80 70.

If you hold a commercial license, you will need to inform the DVLA who will advise you further. Provided you have had no complications you will be able to fly 1 week after your TAVI.

Despite this, if you are planning a holiday, it may be better if you wait at least 6 weeks before travelling, as it is unlikely that you will get the best out of your break before then. If you wish to fly within 3 months of your procedure, check with your doctor and the airline, as each have their own policies. Also, remember to ensure that you have valid travel insurance – you can contact the BHF for advice.

How should you care for your wound

You will have a small incision/wound at your groin area and may also have a small dressing at your wrist. It is normal for your groin to be tender for a few days after the TAVI. It is also normal for a bruise to develop. However, extreme pain or excessive bruising are not usual, and if you are concerned seek medical advice.

You can shower when you get home but avoid rubbing the wound site. Do not have a bath for up to 5 days or until the wound is completely closed. To avoid irritation, and reduce the likelihood of infection, do not put creams, talcum powder or soaps directly onto the groin site for up to a week after the procedure. The small clear or white dressing can be removed after 3-5 days.

If your groin starts to bleed you should apply pressure to the area keeping your leg as straight as possible (lying down if you can). If the bleeding does not stop after 10 minutes, dial 999. Do not drive yourself to A&E.

For the first couple of weeks, avoid:

- carrying heavy shopping
- vacuuming
- doing any heavy gardening
- doing any activity which requires you to take weight through your arms and may cause a strain on your chest or stomach

What exercise should I do?

Walking is the best form of exercise you can take following a TAVI and it is essential for your recovery. You may find that the amount you can manage varies from day to day.



For the first 1 or 2 weeks after your surgery it is best to exercise little and often. Begin by walking around the house and taking short walks outside. Once you are comfortable walking on flat ground, try walking up hills slowly, resting as necessary.

For the first few weeks you should avoid any strenuous exercise, including swimming, dancing and cycling. Your local Cardiac Rehabilitation team should make contact with you following your discharge and are a great source of input.

When can I return to normal activities?

Everyone is different, so recovery times can vary. As soon as you are walking comfortably around the home you can carry out light housework such as washing up, dusting, laundry, small amounts of ironing (while sitting down) and light weeding in the garden. None of these activities should make you feel extremely breathless – if they do, you may be working too hard and need to slow down.

Will I have a follow-up appointment?

Unfortunately, we do not see you back here for clinic however we will undertake a telephone consultation with you one to 2 weeks following discharge. We will send a letter to the Hospital Doctor that referred you for our TAVI in addition to your GP detailing the procedure you've had done and listing your medication on discharge. As above, one of our nurse specialist team will be in touch with you once you are home to discuss further input.

What should I do if I have a problem at home?

If, after discharge, you have any further queries or general concerns, please do not hesitate to contact us. We are always happy to help.

Important information

After your TAVI you may feel a little short of breath when first out walking, however, if you experience any of the following symptoms with exercise or at rest, please contact your GP or NHS 24 for further advice:

- Chest pain
- Increasing shortness of breath
- Increasing swelling of your ankles, 1 or both
- Any signs of infection, for example any discharge, redness, temperature or inflammation around the wound/s area.
- A hard tender lump under the skin around the area of the incision (a pea sized lump is normal)
- A cold foot on the same side as the procedure was carried out

Some additional things to be aware of

Although it is less invasive than having open heart surgery, having a TAVI can be very traumatic and as well as affecting your physical health, it can affect you emotionally. This is a normal part of recovering from the procedure and these feelings should pass.

Some people who have had a TAVI have reported the following symptoms after their procedure.



Some are caused by the procedure itself and others by the sedation given. The symptoms are usually temporary and will settle over the first few days or weeks after the procedure.

Patients who have had a TAVI in the past have reported altered sense of smell/strange taste in the mouth. This is caused by the anaesthetic and it is common for people to lose their appetite. Try to have small meals little and often.

Other possible symptoms include:

- **Blurred vision/dots in front of eyes:**

This occurs as a result of the surgery. It is recommended that you do not have an eye test within the first 3 months after your surgery to allow this to settle.

- **Nightmares/hallucinations or difficulty sleeping:**

Sleep disturbance is common following any operation and will usually settle once you are at home and get back into your normal routine. You may find it is initially best to sleep on your back for comfort.

- **Muffled hearing/heightened awareness of heart beat:**

You may be particularly aware of this when you are lying on your side at night. Again, this is perfectly normal, but can cause concern. Try a different sleeping pattern to see if this helps

- **Voice sounds different or hoarse:**

This occurs normally as a result of a breathing tube being put in your throat during the operation.

Not every patient will have a tube put down their throat. This symptom should improve over time.

- **Sore or numb bottom:**

It is important to remain as active as you can after your surgery and not sit in one position for long periods.

- **Constipation:**

This can occur as a result of inactivity and the strong painkillers you need to take after the procedure. You can ask us for a laxative to help this. Please tell your nurse if your bowels have not opened before you go home.

- **Loss of concentration/memory problems:**

Many people find they are unable to concentrate on things like reading a book or newspaper. Be patient with yourself – as you recover your concentration levels should return to normal.

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 University National Hospital (GJUNH) 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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Further 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

TAVI nurse contact information

For any enquiries, please call our nurse specialists on mobile number 07966 382869.

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

All of our publications are available in different languages, larger print, braille (English only), audio tape or another format of your choice.

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