

Trans-catheter aortic valve implantation (TAVI) work up

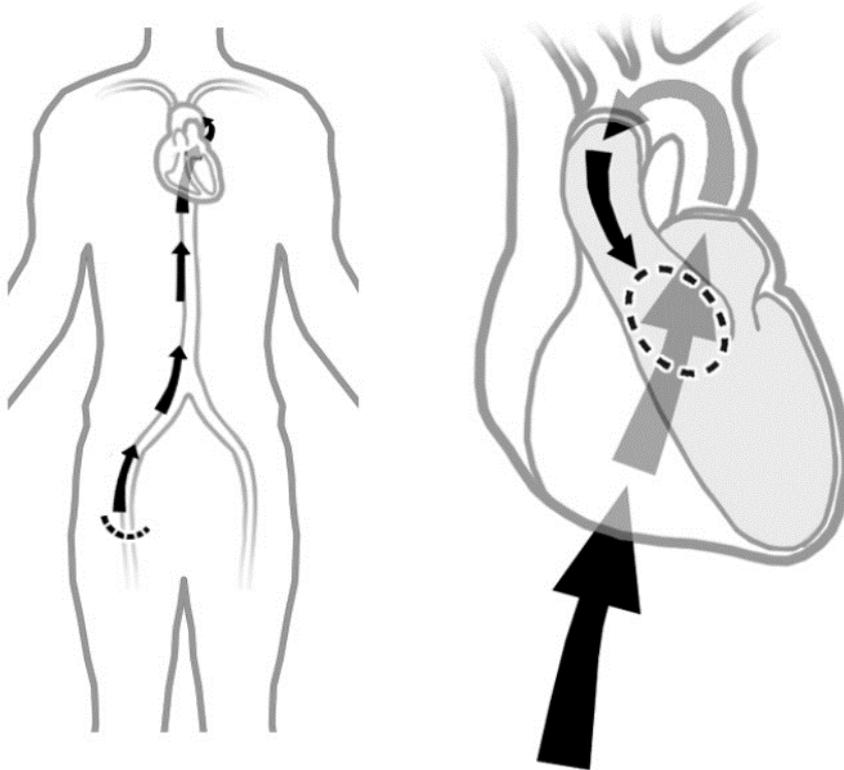
You have been referred for an assessment known as a 'TAVI work up' because you have been diagnosed with aortic stenosis. This factsheet explains the procedures that we may need to undertake when you come into hospital.

What is aortic stenosis?

You have been diagnosed with a condition called aortic stenosis. This means that the aortic valve that opens to allow blood to flow from your heart to the rest of your body has narrowed and does not function properly. The valve fails to open fully, making it harder for the heart to pump blood through the valve. This narrowing is often caused by a build up of calcium inside and around the valve which can happen over the course of a lifetime. Symptoms of aortic stenosis may include shortness of breath, chest discomfort and dizziness.

What is TAVI?

Trans-catheter aortic valve implantation (TAVI) is a way of replacing your existing valve with a new tissue valve, thereby improving how your heart works without having open heart surgery. You may have been referred for a TAVI procedure as the alternative (open heart surgery) has been deemed unsuitable for you by your cardiologist or cardiac surgeon. TAVI involves placing an artificial valve into your heart. During the procedure, a thin tube (also known as a catheter) is introduced through a small cut either at the top of your leg (your groin) or on the left hand-side of your chest. The TAVI valve sits within a small metal cage (also known as a stent) and is crimped onto the end of the catheter. When the catheter is correctly positioned within the heart, the heart is paced very quickly with a temporary pacing system. A small balloon is inflated and the valve opens up as the balloon expands. The balloon is then deflated, the pacing is stopped and the valve is held in position by the surrounding stent. The catheter is then removed and the artery is stitched closed. This procedure takes approximately two hours and is performed under either a local or general anaesthetic in a catheter laboratory.



Recovery begins in the cardiac intensive care unit (CICU). When it is appropriate to do so, patients are transferred to a cardiac ward before being allowed to go home. The estimated length of your hospital stay after a TAVI is between three to five days. We hope that having a new aortic valve will relieve you of some of the symptoms of aortic stenosis and potentially increase your life expectancy. Our main aim as a team is to improve your quality of life.

The TAVI team

The TAVI team consists of a number of experienced consultants in the fields of cardiology, cardiac surgery, cardiac anaesthesia, ICU and cardiac imaging - all of whom have a specialist interest in TAVI.

What is a TAVI work up?

The TAVI work up is a series of hospital tests that are essential for the following reasons:

- to make sure that TAVI will be a safe procedure to offer you
- to ensure that your aortic stenosis is severe enough to treat (so you feel the benefit)

The tests and procedures of the 'work-up' may include the following:

- a chest x-ray to look at your lungs
- an ECG to check your heart rhythm

- lung function tests to see how well your lungs work
- a transthoracic echocardiogram (externally looking at your heart with ultrasound)
- a CT aorta (a special x-ray that looks at the middle section of your body)
- a coronary angiogram to look at the coronary arteries that supply blood to your heart; if you have blocked arteries you may need coronary stenting
- an aortic balloon valvuloplasty where the aortic valve is widened using a balloon prior to the new valve being implanted. A wire is passed along the blood vessel, up to the heart, until it gets to the aortic valve. The doctor uses x-ray imaging to see the wire. Once the wire is in place, a balloon is passed along the wire and into the damaged valve. The balloon is pumped up where the valve is narrowed. This widens the valve, as far as possible. The balloon may be pumped up several times. At the end of the procedure the wire and balloon are removed. There is about a 5% risk of heart attack, stroke, bleeding or death with this procedure.

You may already have had some of these procedures, in which case the TAVI team will decide whether they need to be repeated.

What happens after a TAVI work up?

After you have completed the TAVI work-up you will be able to return home. Your case will then be discussed at a heart valve team meeting (a group of cardiologists, cardiac surgeons, lung specialists, intensivists) who will need to approve your case as being suitable for TAVI.

You and your doctor will be notified of the decision, and if accepted a date will be arranged for the procedure. You will be admitted the day before the procedure.

Consent for TAVI

Before you undergo a TAVI you will need to acknowledge that the doctor has explained:

- your medical condition and the proposed procedure, including additional treatment if the doctor finds something unexpected. I understand the risks, including the risks that are specific to me.
- the anaesthetic required for this procedure. I understand the risks, including the risks that are specific to me.
- other relevant procedure options and their associated risks.
- your prognosis and the risks of not having the procedure.
- that no guarantee has been made that the procedure will improve my condition even though it has been carried out with due professional care.

- the procedure may include a blood transfusion.
- tissues and blood may be removed and could be used for diagnosis or management of my condition, stored and disposed of sensitively by the hospital.
- if immediate life-threatening events happen during the procedure, they will be treated based on my discussions with the doctor or my Acute Resuscitation Plan.
- I was able to ask questions and raise concerns with the doctor about my condition, the proposed procedure and its risks, and my treatment options. My questions and concerns have been discussed and answered to my satisfaction.
- I understand I have the right to change my mind at any time.
- I understand that image/s or video footage may be recorded as part of and during my procedure and that these image/s or video/s will assist the doctor to provide appropriate treatment.

Risks of TAVI

In recommending this procedure your doctor has balanced the benefits and risks of the procedure against the benefits and risks of not proceeding. Your doctor believes there is a net benefit to you going ahead. This is a very complicated assessment. There are risks and complications with this procedure. They include but are not limited to the following:

Common risks & complications (> 5%) include:

- Minor bruising at the puncture site.
- Abnormal heartbeat lasting several seconds, which settles by itself.
- Major bruising or swelling at the groin/arm puncture site.
- A stroke. This can cause long term disability.
- Death is possible following the procedure or due to the underlying heart condition.

Uncommon risks & complications (1- 5%) include:

- Abnormal heart rhythm that continues for a long time. This may need an electric shock to correct.
- Embolism. A blood clot may form and break off from the catheter. This is treated with blood thinning medication.
- The valve may leak or can be damaged.

Rare risks & complications (< 1%) include:

- Surgical repair of the groin/arm puncture site or blood vessel.
- Heart attack.
- Loss of kidney function due to the side effects of the x-ray dye.
- Infection. This will need antibiotics.
- An allergic reaction to the x-ray dye.
- A higher lifetime risk from x-ray exposure.
- A hole is accidentally made in the heart or heart valve. This will need surgery to repair.
- Damage to the nerve in the leg.
- Emergency heart surgery due to complications with this procedure.
- Skin injury from radiation, causing reddening of the skin.