



## Transcatheter Aortic Valve Implant/Replacement (TAVI / TAVR)

You have been diagnosed with a condition called aortic stenosis. TAVI, or trans-catheter aortic valve implantation, is one method of treating this condition and may be recommended for appropriate patients.

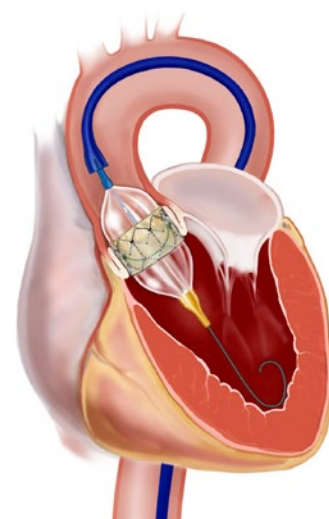
### What is aortic stenosis?

It is when the aortic valve (the 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, fatigue and dizziness. The most common intervention for heart valve replacement is open-heart surgery. However, a less invasive way of performing the surgery has been developed where the valve replacement is done without open heart surgery known as Transcatheter Aortic Valve Implantation/Replacement (TAVI/TAVR). The majority of TAVI valves can be inserted via the femoral artery (the main artery at the top of your leg). A multi-disciplinary team consisting of Cardiologists, Cardiothoracic Surgeons, Cardiac Imaging Specialists, Geriatrician and Nurse Co-ordinator will have discussed your case to ensure that TAVI is the most appropriate option for you.

### What is TAVI?

Trans-catheter aortic valve implantation (TAVI) is a way of replacing your existing valve with a new artificial tissue valve, thereby improving how your heart works without having open heart surgery. The procedure aims to relieve you of some of the symptoms of aortic stenosis, improving your quality of life and potentially increasing your life expectancy.

During the TAVI procedure, a thin tube (catheter) is introduced into your femoral artery through a small cut at the top of your leg into your groin. The replacement valve sits within a small metal cage (also known as a stent) and is attached onto the end of the catheter.



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Evolut R Valve

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A temporary pacing wire is inserted into a vein in your neck or leg and advanced to the right ventricle (pumping chamber of the right side of your heart), it is then connected to a temporary pacemaker (a small battery operated box, which can control heart rate). This is done to allow the Doctor to control your heart rate during deployment of the valve. The temporary pacing wire is typically removed during the procedure but in rare case may be left in for a few days.

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. An alternate type of valve is one that slowly self-expands into position eliminating the need for rapid heart pacing and inflation of a balloon. Your heart team will decide on the most appropriate valve type for you. Your own diseased valve will not be cut or removed. X-rays and transoesophageal echo are performed during the procedure to assist with correct positioning of the new valve. The catheter is then removed and the small incision is closed. The transfemoral TAVI procedure usually takes one hour but can be up to three hours.

### **Special Considerations:**

TAVI is a relatively new treatment option and long-term durability of the new valve beyond 5 years is still to be determined, although data up to 9 years is encouraging.

You will be required to have ongoing medication and follow-up with your Cardiologist after your procedure.

If you require any other invasive procedures, including any dental treatment it is important to let your treating doctor or dentist know about your valve replacement as you may require antibiotics prior to the procedure to reduce the risk of the new valve becoming infected.

### **Common risks and complications include:**

- Swelling, bruising or haematoma at the puncture site
- Femoral artery aneurysm or pseudoaneurysm (false aneurysm) which may require surgical repair or stent placement

- Hypertension or hypotension (high or low blood pressure)
- Abnormal heart rhythms – a permanent pacemaker may be required
- Bleeding from the groin – a blood transfusion may be required
- Increased risk of wound infection, chest infection, heart and lung complications, and blood clot in the leg or lungs for people who are obese

### **Uncommon risks and complications:**

- Infection requiring antibiotics
- Worsening or failure of kidney function sometimes requiring dialysis
- Stroke (blood clot or bleeding in the brain) which may cause permanent disability
- Heart attack caused by the new valve blocking the coronary arteries
- Lung collapse – this may need antibiotics, physiotherapy or tube insertion to remove air or fluid from the chest
- Blood clot in the leg causing pain and swelling; in rare cases part of the clot may dislodge and go to the lungs

### **Rare risks and complications:**

- Perforation or damage of vessels, myocardium or valve structures which may require emergency major surgery
- Valve moving from where it was initially placed. The valve may need to be removed with a special catheter or open heart surgery
- Opening or tear in the lining of the Aorta (aortic dissection)
- Infection settling on the new valve (endocarditis)
- Significant leakage around the new valve
- Death as a result of this procedure is rare

There may also be risks specific to your individual condition and circumstances. Please discuss any concerns with your Cardiologist.

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