

# Transcatheter Aortic Valve Insertion (TAVI)

## What is Aortic Stenosis?

Aortic Stenosis is the term used to describe the narrowing of the aortic valve. Aortic stenosis usually happens in older adults. It is typically caused by a build up of calcium on the aortic valve leaflets. Over time the leaflets become stiff making it difficult for the valve to fully open. This forces the heart to work harder in order to push blood through the aortic valve to your body.

## What are the symptoms of Aortic Stenosis?

- Shortness of breath
- Chest pain
- Blackouts with exertion

These symptoms usually happen with physical activity. Let your doctor know if you have any of these symptoms.

## How is Aortic Stenosis diagnosed?

People usually find out they have aortic stenosis after their doctor or nurse hears a heart murmur on a routine exam. A heart murmur is a noise heard by doctors or nurses when they listen to the heart with a stethoscope.

To check for aortic stenosis and see how severe it is, you will undergo some tests:

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### 1. Echocardiogram (Echo)

This is an ultrasound of your heart. It shows the size of the heart chambers, how well the heart is pumping, and how well the heart valves are working.



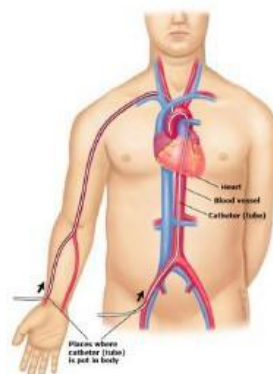
### 2. Electrocardiogram (ECG)

This test measures the electrical activity in your heart.



### 3. Coronary angiography (Angiogram)

This test assesses the arteries of your heart. This procedure is done in the Cardiac Catheterisation Lab (CV Lab). The doctor passes a tube into a blood vessel in your leg or arm up to your heart. This will show if any of the arteries in your heart are narrowed or blocked.



### 4. CT Scan



This test uses a series of X-rays to create detailed images of your heart and heart valves. It will measure the size of the aorta and look at the aortic valve more closely. It will also make sure the vessels in the leg are big enough to deliver the valve from the leg.

## What is the treatment for Aortic Stenosis?

Treatment depends on the severity of the stenosis, whether you are experiencing symptoms and if your condition is getting worse. If the stenosis is severe, one of the options for treatment is a procedure called Transcatheter Aortic Valve Insertion (TAVI).

## What is a Transcatheter Aortic Valve Insertion (TAVI)?

This is an alternative, less invasive procedure to replace the aortic valve than surgery. This involves passing a valve into the heart using X-ray and echocardiography guidance. The valve is usually inserted through the femoral arteries in the groin. The valve is then fitted inside the defective aortic valve. Your doctor will discuss alternative ways of delivering the valve if the arteries in the leg are not big enough to deliver from the leg. The TAVI valve is a tissue valve. It has a metal frame and leaflets made from the lining around the heart of a pig or a cow. We currently use the Edwards Sapien 3 Transcatheter Heart Valve, Boston Neo Accurate Heart Valve and Medtronic CoreValve.

**Boston Neo Acurate Neo**



**Edwards Sapien 3**



**Medtronic CoreValve**



## Complications of the procedure typically include:

- 1 - 2% risk of death
- 2 - 4% risk of stroke
- 5 - 10% risk of needing a pacemaker
- Bleeding at the groin sites

The risks will vary depending on your age and other factors that your doctor will explain when they meet you.

## Pre-Procedure Instructions

- You will need to fast from 12 midnight the night before your procedure.
- Instructions regarding what medications to take coming up to your procedure will be advised once you have a date for the procedure.
- **Please advise the TAVI nurse if you are on blood thinners.**
- Please bring an overnight bag and a list of your medication.

Do not bring any valuables to the hospital when you are coming for your procedure.

## About the procedure

- TAVI procedures typically take place on Friday mornings. The procedure generally takes 1 to 2 hours. You will receive some sedation to help you relax during the procedure.
- The Cardiologist will put tubes into the arteries in your right and left groin sites. He/she will then guide the valve through this tube to the location of your narrowed aortic valve. The Cardiologist will ensure the new valve is working correctly. The tubes will then be removed. Pressure will be applied to both your groin sites to stop any bleeding at the groin.
- You will be instructed to lie flat for approximately 4 hours to allow the groin sites to fully heal.
- You will be transferred to the recovery area in the CV Lab for approximately 1-2 hours after the procedure
- You will then be admitted after the procedure to the Coronary Care Unit.
- You will have an Echo and ECG the day after the procedure to check the valve is working correctly.

The aim is that you will be discharged directly home by lunchtime on Sunday. Please ensure you have someone arranged to give you a lift home on this day. We do not recommend convalescence as hospital or nursing home environments can increase your risk of picking up an infection and ultimately your valve becoming infected.

## Post-Procedure Instructions

- These guidelines are general as every person's recovery is different. It is advisable you have someone to care for you for at least the first week after you are discharged.
- We recommend that you resume your regular daily routine within the week of discharge. However, we recommend you avoid strenuous activity for up to 4 weeks after the procedure.
- You may shower as soon as you wish. We recommend you walk on level ground at an easy pace. Take it easy walking up any hills or stairs. Stop and rest if you become out of breath. Daily exercise is vital to your healing. Build this up over time after your procedure.
- We do not recommend heavy lifting, pulling, dragging, gardening or driving for up to 4 weeks
- You do not need to avoid sexual activity after the procedure. As you build up your energy and your endurance you can judge for yourself when you are ready to return to your full sexual activity.
- Contact your local doctor if you experience any pain or swelling at the groin sites.
- Your new heart valve is MRI compatible this means it will not interfere with an MRI scanner if you need one.
- You will receive a document pre-discharge with the details of your valve on it. It is imperative you keep this safe as you may be asked to produce this if you need a scan.
- You must inform your dentist you have a new valve as you will need antibiotics if you need any work done even if it is just a routine cleaning.
- After discharge from hospital you will receive an appointment in the post to come back to Clinic for a check-up. You will have an Echo, ECG and be seen by a member of our Cardiology team. We will then transfer your care back to your primary cardiologist. You will require follow up once a year in relation to your TAVI procedure.

## Radiation

Ionising radiation is used to take images during this procedure. The Radiographer will optimise your X-ray examination, keeping your radiation dose as low as possible.

As X-ray is used, women aged between 12 - 55 years old will be asked to provide the first date of their last menstrual period (LMP) and sign a "*Pregnancy Status Declaration*" form. If your period is overdue, a urine pregnancy test will be taken before your procedure. If you are aware that you are pregnant please inform the Nurse/Radiographer attending to you.

## Radiation Warning

Your procedure, which your doctor has recommended, involves the use of ionising radiation (X-rays). We monitor the radiation dose used throughout the case. High doses of radiation may be associated with some health risks, such as slightly elevated cancer risk or skin reddening.

Although the doses of radiation usually incurred in a given procedure are small, it is possible (approximately 1 in 10,000 cases), that cumulative exposure received may produce a reaction such as skin reddening (very like sunburn). If levels measured indicate that the cumulative exposure could cause such skin reactions, then appropriate advice will be given and monitoring for any possible reactions instigated.

## Sedation

- Sedation can cause drowsiness and increase your risk of falling.
- Do not consume alcohol within 24 hours post procedure.
- Avoid making any legal decisions or signing any legal documentation.

## Useful Contact Numbers

- Structural Heart Disease Nurse 01 854 5471
- Cardiac Catheterisation Lab 01 803 2312
- Coronary Care Unit 01 8034700/4705

## Useful Websites:

[https://www.rsa.ie/Documents/Licensed%20Drivers/Medical\\_Issues/Medical%20Fitness%20Guidelines.pdf](https://www.rsa.ie/Documents/Licensed%20Drivers/Medical_Issues/Medical%20Fitness%20Guidelines.pdf)


<https://www.hse.ie/eng/health/az/c/coronary-angiography/risks-of-a-coronary-angiography.html>



## Catheterisation Laboratory

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