

intra

Image  
Guided  
Healthcare

# Transcatheter Aortic Valve Implantation (TAVI) for aortic stenosis

CARDIOLOGY | STRUCTURAL HEART



# Your care lies within

Our image-guided procedures are minimally invasive meaning safer procedures with quicker and easier recovery.

Clean, precise, proven.



## Your care lies within

We are passionate about you regaining your quality of life; walking the dog, lifting a grandchild, returning to work. We are here to help you do that.

This guide covers information for patients undergoing a Transcatheter Aortic Valve Implantation (TAVI). It is designed to provide an understanding of why and what is involved. Please use this in addition to information from your doctor and nurse.

Cardiovascular disease (heart, stroke and blood vessel disease) continues to be the leading cause of death in New Zealand, accounting for 30% of deaths annually [1]. Every 90 minutes a New Zealander dies from heart disease [1].

Transcatheter Aortic Valve Implantation (TAVI) are carried out in an angiography suite ("catheter lab") at our Epsom location. Your cardiologist will be assisted by our team of nurses and other highly skilled personnel.

[1] Ministry of Health (2015) Mortality and Demographic data 2013 (provisional). Wellington: Ministry of Health.



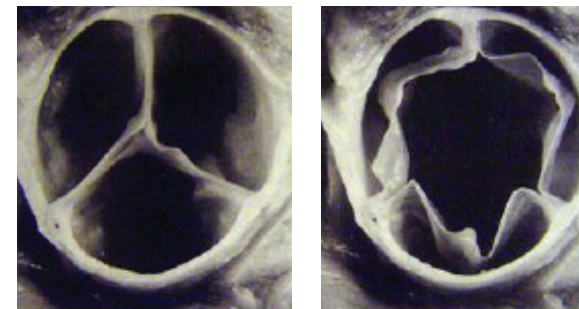
## What is Aortic Stenosis?

A healthy, normal heart valve allows blood to flow in one direction without obstruction. When a valve is narrowed, it is said to have "stenosis".

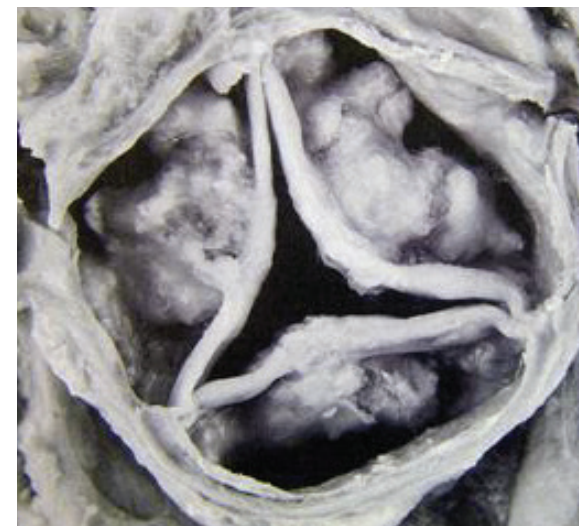
The most common valve problem is the narrowing of the aortic valve that lies between the left ventricle and the aorta. This is called aortic stenosis.

Aortic stenosis is usually due to calcium building up on the valve leaflets causing them to become rigid. Blood flow from your heart to your aorta and onward to the rest of your body is obstructed.

When the aortic valve is obstructed, your heart needs to work harder to pump blood to your body.



Normal aortic valve with thin supple leaflets.



In calcific aortic stenosis, leaflets are thick and rigid. They do not open properly,

Left untreated, aortic valve stenosis can lead to serious medical problems:

- Shortness of breath due to heart failure with build up of fluid in the lungs.
- Angina because of insufficient blood reaching the heart muscle.
- Blackouts because of insufficient blood reaching the head.
- Sudden death.

Between fifty to eighty percent of patients with severe aortic stenosis who have symptoms, and do not have a valve replacement will typically not survive beyond two years.

If you have severe aortic valve stenosis, you will usually need to have the valve replaced. Traditionally, major surgery was needed to replace the aortic valve. This is changing, depending on patient risk factors TAVI results show a lower death rate and lower stroke rate than surgical aortic valve replacement, is much less invasive and allows faster recovery.

## What is Transcatheter Aortic Valve replacement (TAVI)?

Typically conducted under local anaesthesia, TAVI is a minimally invasive procedure whereby a new valve is inserted without removing the old, damaged valve.

The TAVI approach delivers a fully expandable replacement valve to the valve site through a catheter.

Once the new valve is expanded, it pushes the old valve leaflets out of the way and the tissue in the replacement valve takes over the job of regulating blood flow.

## Benefits

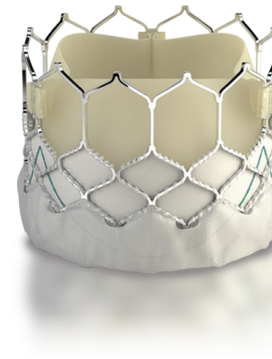
Compared to surgical replacement it is less invasive, is generally performed under local anaesthesia and does not require cardiopulmonary bypass. Furthermore, TAVI results in a shorter hospital stay and a faster recovery.

Some patients unsuitable for surgery may now be treated using TAVI.

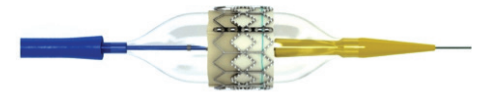
In addition, the incidence of death or stroke is 1-2 percent which is lower than conventional surgery.

## The procedure

### The Transcatheter Aortic Valve



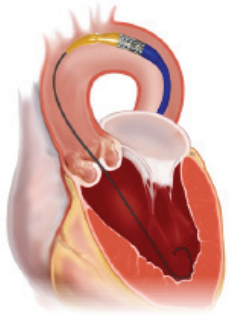
On delivery system.



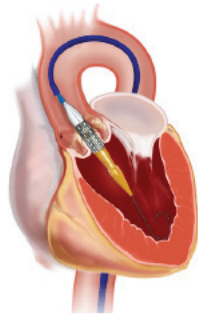
Deployed by balloon expansion.

- Stainless steel frame.
- Leaflets made from cow pericardium (the strong but thin membrane that surrounds a cow's heart).
- Deployed by expanding a balloon.
- A "skirt" limits leakage around valve.

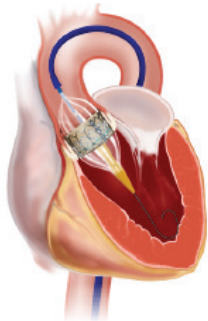
## Deployment of the Transcatheter Aortic Valve



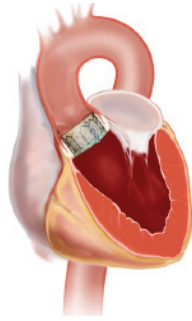
Passage of the new valve around the aorta



Crossing the native valve with the valve



Valve deployed by balloon expansion



Balloon removed

TAVI is conducted in an angiography suite at Intra, within the Mercy Hospital main building, Epsom, Auckland.

Your interventional cardiologist will be assisted by nurses and other highly trained personnel.

Access is gained via the femoral (groin) artery and the delivery catheter with the aortic valve prosthesis is advanced to the narrowed valve.

The new valve, loaded in a specialised delivery catheter, is advanced to the stenosed aortic valve through a small hole in the femoral artery in the groin.

Once correctly positioned, the balloon is expanded, deploying the valve.

The delivery catheter is then retrieved and the groin puncture site closed.

## Before the TAVI procedure

- **Fasting:** You must not have anything to eat or drink six to eight hours before you procedure, unless the anaesthetist tells you otherwise. You may continue to drink a small amount of clear fluids to take medications.
- **Medication:** Please inform your cardiologist and anaesthetist about all the medication you are taking. You may be advised to stop taking some medication temporarily for a few days before your procedure e.g. blood thinners.
- **Allergies or previous reactions to contrast (x-ray dye):** Please inform Intra staff at the time of booking your procedure if you have any known history of allergies, particularly allergies to x-ray contrast.
- **Diabetes:** If you are a diabetic you should inform your cardiologist and Intra staff at the time of booking your procedure. You may need to discuss your insulin dose with your anaesthetist and cardiologist.

Please bring with you any medication and any recent blood test results, ultrasound results or x-rays.

On the day of your admission you will be admitted to a hospital ward and later transferred to Intra for your procedure.

## After the procedure

- Patients will be transferred to a Mercy Hospital ward for recovery.
- Patients may have a temporary pacemaker in a groin vein.
- There may be bruising at the puncture site.
- Hospital stay after TAVI varies from one post-procedural day to more depending on the patient.

## Going home & recovery

**Medication.** Your cardiologist will discuss with you what medication you should take.

**Exercise.** You should build up activity gradually so that in a few weeks you are back to full activity.

**Follow-up.** You will need to visit your general practitioner. Your usual cardiologist will usually make an appointment to see you. If not please phone your usual cardiologist for an appointment.



## FAQ

### How long will I need to stay in hospital?

Because the procedure is performed under local anaesthesia the recovery varies from one post-procedural day to more depending on the patient.

### What is the likelihood of a stroke?

Depending on patient risk factors the incidence of a stroke or death is 1-2 percent and less than after conventional aortic valve surgery.

### How can I be considered for TAVI?

In order to be considered for a TAVI procedure, you need a referral from a cardiologist. Please contact our friendly team at Intra and we can help you through this process.

### Is TAVI reimbursed by Health Insurance Providers?

The majority of health insurance providers now offer reimbursement for TAVI. This must be approved by the insurance provider based on their eligibility criteria.

### Will I have any pain after the procedure?

Not usually.

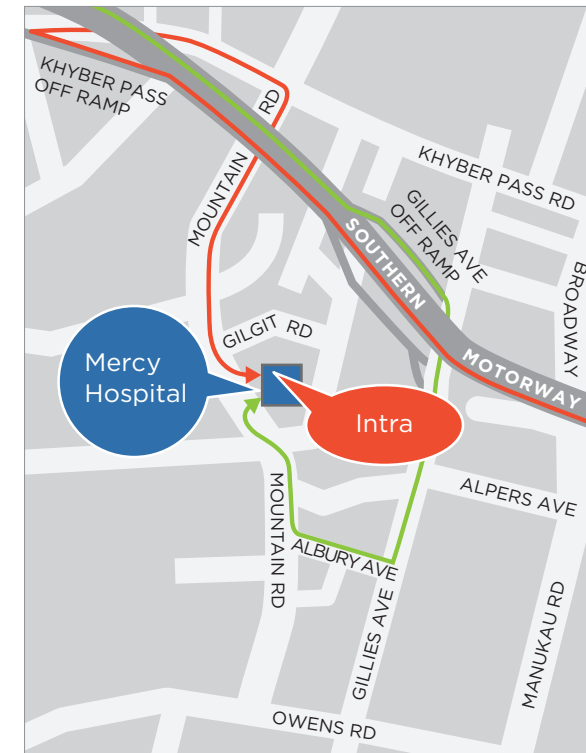
### Who do I contact if I have concerns after the procedure?

In the first days after your procedure you can contact Intra staff and subsequently your referring cardiologist or your GP.

## How to find Intra Epsom

Please report to the Admissions Desk on the ground floor of the main building of Mercy Hospital, 98 Mountain Road, Epsom, Auckland. You will be taken from Admissions to Cardiac Investigation Unit (CIU).

The direct telephone line for CIU for use during the day of your procedure is: 09 623 5752.



1st Floor, Mercy Hospital,  
98 Mountain Road, Epsom,  
Auckland 1023, Gate 1.

### Key:

Northbound motorway traffic

Southbound motorway traffic

### Parking

Patient drop-off and free short term parking (up to 60 minutes) available at Mercy Hospital Main Entrance. Free onsite parking (180 minutes and some all day parking) is available from Gate 3, off Mountain Road.

P: +64 9 630 1961 (office hours)

P: +64 27 482 0763 (after hours)

F: +64 9 630 1962

E: [admin@intracare.co.nz](mailto:admin@intracare.co.nz)

W: [intracare.co.nz](http://intracare.co.nz)









E: [admin@intracare.co.nz](mailto:admin@intracare.co.nz)  
W: [intracare.co.nz](http://intracare.co.nz)