

What are the potential risks/complications of the procedure?

While TAVI is a minimally-invasive procedure, it still carries significant risks. The two most frequent and serious risks are serious damage to the major blood vessels, and stroke.

Below is a summary of associated risks of TAVI procedure:

- Death (1 – 10%)
- Heart or blood vessel injury, such as perforation or damage of blood vessels, heart muscle valve structures that may require emergency surgery (1 – 10%)
- Heart attack (1 – 10%)
- Stroke (1 – 10%)
- Clot (1 – 10%)
- Hemorrhage (bleeding) requiring transfusion (0.1 – 5%)
- Hematoma (1 – 10%)
- Hypertension (high blood pressure) / Hypotension (low blood pressure) (0.1 – 5%)
- Kidney failure needing dialysis (0.1 – 10%)
- Kidney dysfunction (0.1 – 25%)
- Allergic dye reaction (0.1 – 1%)
- Anesthesia reaction (1 – 10%)
- Abnormal heart rhythms (0.1 – 25%)
- Heart conduction system injury, which may require a permanent pacemaker (1 – 10%)
- Fever (0.01 – 1%)
- Infection including valve infection (0.01 – 1%)
- Pericardial effusion / cardiac tamponade (bleeding into the heart sac) (0.1 – 1%)
- Nerve injury (0.01 – 0.1%)
- Arteriovenous (AV) fistula an abnormal passageway between an artery and a vein (0.01 – 0.1%)
- Short term use of intra-aortic balloon pump to assist heart function (1%)
- Lower limb ischemia / limb loss (0.5%)
- Emergency aortic valve surgery by conventional method (1 – 3%)

Nevertheless, potential risks of valve replacement vary significantly from person to person depending on age, overall health, and other factors. Discuss the risks in detail with your doctor before you consent to the procedure.

Always inform other doctors about your heart valve replacement before any medical or dental procedure. Before undergoing a MRI (magnetic resonance imaging) procedure, always notify the doctor or medical technician that you have an implanted heart valve. Failure to do so may result in damage to the valve that could lead to death.

Location



- A** Linkway @ Level 1 Via MRT station (Exit A)
- B** Linkway @ Level 1
- C** Linkway @ Level 4
- Drop off only
- Bus Stop
- Carpark
- Taxi Stand / Drop off
- Kent Ridge MRT Station @ Level 1



National University Hospital
5 Lower Kent Ridge Road, Singapore 119074
Tel: 6779 5555 Fax: 6779 5678 Website: www.nuh.com.sg

Contact Information

National University Heart Centre, Singapore

1 Main Building of NUH, Angiography Centre, Level 2.

Opening Hours: 8.30 am - 5.30 pm (Monday - Friday)

Closed on Weekend & Public Holidays

Website: www.nuhcs.com.sg

Getting to NUH

Circle Line Kent Ridge MRT Station

Commuters can transit at the Buona Vista MRT Interchange and alight two stops after at the Kent Ridge Station. The station is served by three exit-entry points.

Exit A: Right at the doorstep of National University Heart Centre, Singapore.

Exit B: Along South Buona Vista Road, which links to Singapore Science Park 1.

Exit C: Leads to NUH Medical Centre.

Information in this brochure is given as a guide only and does not replace medical advice from your doctor. Please seek the advice of your doctor if you have any questions related to the surgery, your health or medical condition. Information is correct at time of printing (Dec 2016) and subject to revision without notice. Copyright© is held by the publisher. All rights reserved. Reproduction in whole or in parts without permission is strictly not allowed.



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Make a donation and help us continue the fight for every heartbeat!

To make an online donation, log on to <http://www.nuhcs.com.sg/make-a-gift.html>

National University Heart Centre, Singapore

A member of the NUHS



Transcatheter Aortic Valve Implantation (TAVI)

What You and Your Loved Ones Should Know Before The Procedure

View patient education videos on **NUHCS YouTube** page!

STEP 01



STEP 02



Download a FREE QR Reader on your smartphone and scan the QR code.

The QR code will decode instantly. You'll be brought to www.youtube.com/user/NUHCS

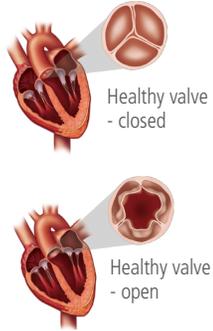


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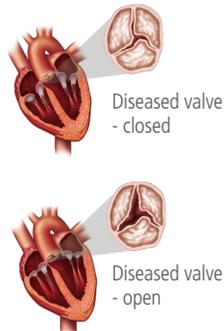
Why is Transcatheter Aortic Valve Implantation (TAVI) needed?

Transcatheter Aortic Valve Implantation (TAVI) is used to treat severe aortic stenosis, a condition in which the aortic valve becomes narrowed, obstructing the outflow of blood from the heart and thereby requiring the heart to work harder to pump blood around the body.

HEALTHY AORTIC VALVE



DISEASED AORTIC VALVE



Symptoms of aortic stenosis:

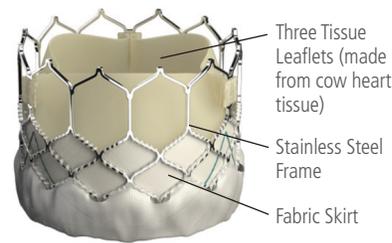
- Chest pain or tightness (angina)
- Feeling faint or fainting upon exertion
- Shortness of breath upon exertion
- Reduced exercise capacity

TAVI enables replacement of the aortic valve without opening the chest. This less invasive procedure is now available for patients considered to be at high-risk for open-heart surgery. This procedure is performed using the Transcatheter Heart Valve (THV), an artificial heart valve designed to be inserted into your heart so that it holds open and replaces your diseased aortic valve. It consists of a metal stent which secures the device in its intended position inside your own valve and valve leaflets to direct the flow of blood out of your heart.



TAVI now offers effective treatment to patients who are at high risk for conventional open heart surgery. It is also intended to prevent further damage to the heart from aortic stenosis and to prolong life, which medical therapy cannot do.

THV that replaces your diseased aortic valve



Benefits of TAVI:

- Shorter procedure and less pain
- Recovery time is significantly shorter than after open-heart surgery (about 2 – 4 weeks instead of 6 – 8 weeks) due to non-invasive nature of procedure
- Short term and long term relief of symptoms
- Normal aortic valve function
- Improvement in your overall life expectancy and functioning

What can I expect before the procedure?

You will undergo investigation to evaluate whether TAVI is possible and which of the two techniques for TAVI (Transfemoral or Transapical route) is most appropriate for you. The investigations will also identify any other considerations that need to be addressed for your treatment.

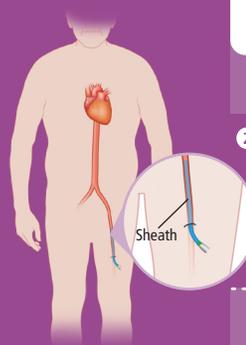
They include:

- Physical examination
- Chest X-ray
- Angiogram
- CT scans
- Blood tests
- Electrocardiogram

Be sure to tell your doctor what medicine you are taking and whether you have any allergies. Your doctor may ask you to change the medicine you are on before the procedure.

What happens during the procedure?

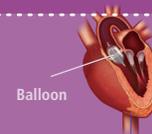
Transfemoral TAVI



1 You will be placed under general anesthesia (you will be in a deep sleep).

2 An incision will be made in your leg, where your doctor will put in a sheath (a short hollow tube) that is slightly larger than the width of a pencil, in your femoral artery (large artery in your upper leg).

Sheath is placed in femoral artery (large artery in your upper leg)



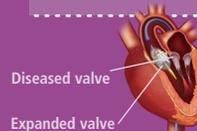
3 Your doctor will take a balloon and put in through the sheath into your blood vessel to reach your aortic valve. The balloon will be inflated with fluid to break open your narrowed valve, deflated, and then removed.

Valve compressed on balloon (about the width of a pencil)

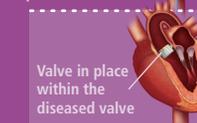
4 The THV will be placed on the delivery system (long tube with a balloon on the end), and compressed on the balloon (using a crimper) to make it small enough to fit through the sheath. It will be about the width of a pencil.

Valve compressed on balloon (about the width of a pencil)

5 The delivery system carrying the valve will be placed through the sheath and pushed up to your aortic valve, guided by a type of X-ray.

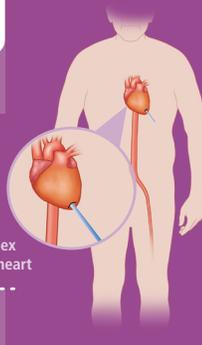


6 The balloon of the delivery system carrying the valve will be inflated with fluid, expanding this new valve within your diseased valve. Next, the balloon will be deflated.



7 Your doctor will make sure that your new valve is working properly before removing the delivery system and closing the incision in your leg. If your new valve is not working properly, your doctor may need to do an open-heart surgery or other additional surgery.

Transapical TAVI



2 An incision will be made in your chest between your ribs to access the apex of your heart. Your doctor will place a sheath (a short hollow tube) that is slightly larger than the width of a pencil through the apex and into the left ventricle.



Catch our video on TAVI on NUHCS' YouTube page!



www.youtube.com/user/NUHCS