

# Transcatheter Aortic Valve Implantation (TAVI)

You have been referred to St. Mary's General Hospital. We need to find out if getting an artificial heart valve by Transcatheter Aortic Valve Implantation (also known as TAVI) is right for you.

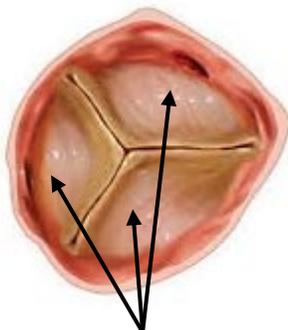
## What is aortic stenosis?

Aortic stenosis is a disease of your aortic heart valve.

It causes narrowing of the aortic valve. It can cause symptoms such as shortness of breath, chest pain, weakness, and feeling tired and passing out.

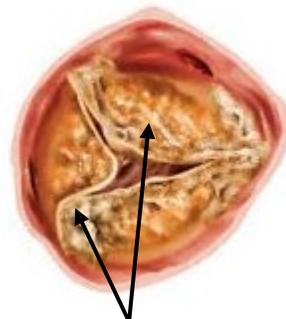
Aortic stenosis is often caused by calcium build-up on the valve leaflets. This occurs in some people as they age. We do not know why this happens in some people and not others.

**Normal Valve**



Valve Leaflets

**Severe Aortic Stenosis**



Calcium Build-up

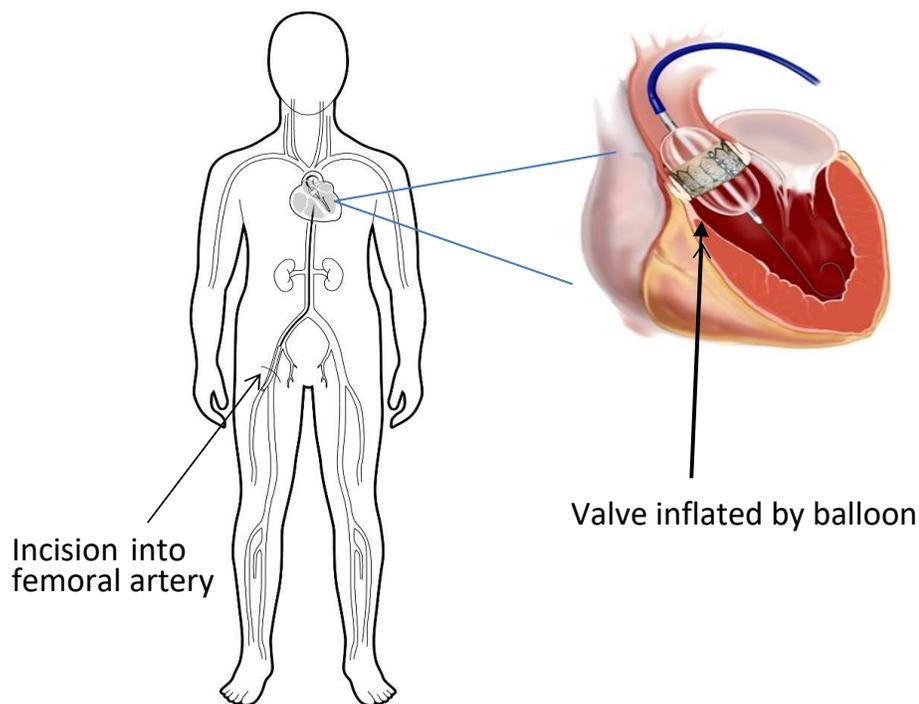
## What is Transcatheter Aortic Valve Implantation (TAVI)?

TAVI is a procedure for patients with severe symptomatic aortic stenosis who are not able to have open heart surgery. They may be considered high risk or have many other medical problems. TAVI is different from open heart surgery. Your surgeon does not cut through your chest bone and the recovery time is often shorter.

## How is TAVI done?

### Transfemoral approach:

A small cut is made in the femoral artery (a blood vessel in the groin or upper leg). Then, a small thin hollow tube, called a catheter, is inserted into the incision. The valve is compressed and then inflated by a balloon on the catheter. Once inflated, the new valve is placed inside your existing valve and the catheter is removed. The new valve starts working right away.



## Transapical approach:

An incision is made in the chest below the left nipple, instead of the femoral artery. This method is used in patients who have blood vessels in the legs that are too small for the catheter to deliver the valve.

## The artificial aortic valve

The artificial heart valve is made of bovine (cow) tissue. The valve is attached to a flexible mesh frame.

There are several valves used for TAVI. The TAVI team at St. Mary's General Hospital uses the Edwards valves.



Side view of the valve



Overhead view of the valve

*The size of an artificial valve used is based on the dimensions of your own valve. They range in size from that of a quarter to a toonie.*

## What are the risks?

The risks vary with each person. They are related to your health condition.

Your doctor will explain your risks to you before the procedure.

## **What tests do I need to have to find out if I am a candidate for TAVI?**

Some of these tests may need to be repeated at St. Mary's General Hospital after you have been seen by the TAVI team.

- Physical exam.
- Blood tests.
- Echocardiogram – A special type of ultrasound that uses sound waves to take pictures of your heart.
- Transesophageal echocardiogram (TEE) – A special test that uses sound waves to take pictures of your heart. The pictures are taken from inside the esophagus.  
This type of ultrasound gives a much clearer picture of your aortic valve than a regular ultrasound.
- Coronary and peripheral angiogram – A test where a doctor injects a special dye into your arteries. An x-ray camera then takes moving pictures. It shows your heart and the arteries that supply blood to the heart muscle and legs.
- CT scan – A test that uses an x-ray machine to take detailed pictures of the body. The CT scan will take pictures of your heart. Contrast (dye) is injected into a vein. It will show the structures of your heart, including your aortic valve. The CT scan will help doctors decide what size heart valve is best for you.

## **The TAVI Team**

The TAVI team is made up of several doctors, nurses and x-ray technologists. You will meet with one of the TAVI doctors in consultation. That doctor will discuss your case with all members of the TAVI team. On the day of your procedure you may meet a different doctor or surgeon. However, doctors work as a team and each doctor will be familiar with your history.

If you have any questions or concerns, please contact the TAVI coordinator at 519-744-3311 ext. 1992

## Weeks before your procedure

- You meet with a TAVI team cardiologist, surgeon and coordinator.
- You will have all needed tests.
- You will go to the Pre-Surgical Clinic.



- The clinic is located off the main lobby of St. Mary's General Hospital, next to the gift shop. SMGH is located at 911 Queen's Boulevard in Kitchener. If you are unsure where to find the clinic you can ask for help from one of the hospital volunteers. Volunteers can be found in the main lobby.

Your appointment will last 3 to 4 hours. It will include meeting an anesthesiologist, reviewing your medications and blood work. If you have a pacemaker, you may be asked to see the Pacemaker Clinic at SMGH before your procedure.

## Medication Instructions before TAVI

Pre-surgical clinic nurse will review all of your medications with you during your next clinic visit. It is important to take all of your regular medicines unless otherwise instructed below.

**Medicines to stop before TAVI:**

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**When to stop:**

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**Medicines to take the morning of TAVI procedure (with a sip of water only):**

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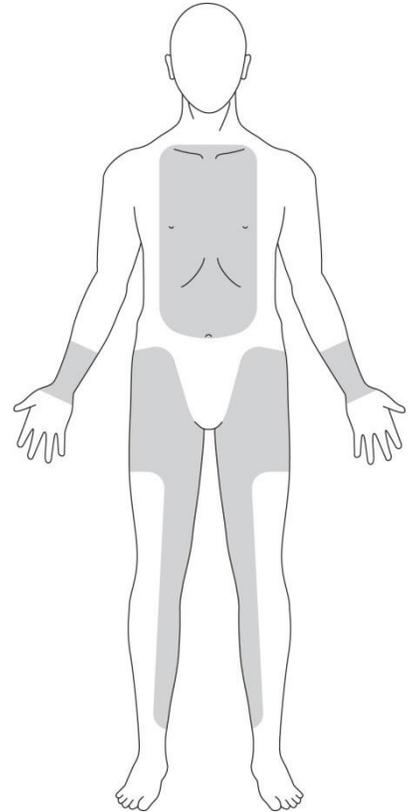
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**Night before your procedure**

- You may eat and drink until 12:00 midnight the night before your procedure.
- After midnight, you cannot have anything to eat or drink (this includes sucking candies and chewing gum).

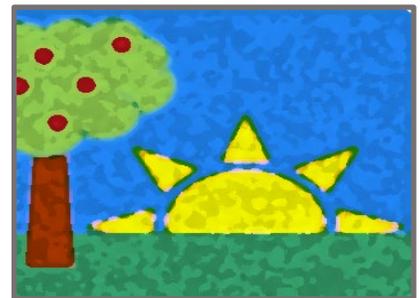


- The night before your procedure and the morning of your procedure, wash and rinse your hair first using your normal shampoo. Make sure you fully rinse the shampoo from your hair and body.
- Wash your body with regular soap. Make sure you completely rinse off the soap from your body.
- Pay close attention to the shaded areas as shown on the diagram; nipple to nipple, collar bone to bellybutton, both wrists, inside of both legs and both groins. Avoid scrubbing your skin too hard.
- Pat yourself dry with a clean freshly washed towel. **DO NOT** apply any powders, lotions or deodorants.
- Dress with freshly washed clothes.



## Morning of your procedure

- You will be given instructions by the pre-surgical clinic on what medications you may take the morning of your procedure. Take them with only a sip of water.
- Wash your body as you did the night before.
- Remove contact lenses, make-up, nail polish, earrings and all other jewelry.
- **DO not eat or drink.**



## Day of your procedure

### Bring:

- Your Ontario Health Insurance Plan (OHIP) card.
- All your current medications in their original containers.
- A pair of slippers with a back and non-slip sole.
- Personal care items, such as a toothbrush, toothpaste, shampoo, soap and a housecoat.



Leave money, credit cards, jewelry and valuables at home.

When you arrive at St. Mary's General Hospital, go to Cardiac Catheterization Reception located on the second floor.

After you are registered, you will be moved down the hall to the patient preparation area.

- Your nurse will shave an area on both of your groins, chest and possibly wrists.
- Your family may wait in the 2<sup>nd</sup> floor waiting room. The doctor will talk to your family after your procedure.

## Procedure

- Before going into the procedure room you will be asked to empty your bladder.
- You will notice that the procedure room is very busy. Nurses, doctors and x-ray technologists are all preparing for your procedure.



- You may be put to sleep by an anesthesiologist. If so, you will have a breathing tube. If you are not put to sleep you will be given medication to help you relax.
- You will have small tubes in both of your groins, wrists and neck.
- If you undergo the transapical approach, you will have an incision on your left chest wall. You will also have a tube in your chest to collect any fluid drainage.
- You will have a temporary pacemaker placed during the procedure. Let the doctors know if you already have a pacemaker.
- The procedure takes about 2 hours.

## What should I expect after the procedure?

- If you have a breathing tube it will be taken out when you are awake and breathing on your own.
- You will go to the Intensive Care Unit to recover.
- For the first couple of hours your nurse will remind you to keep your legs straight. You may still have tubes in your groins.



- You will have to lie flat in bed for 4 – 5 hours. This will prevent you from using the bathroom, but a bedpan or urinal will be provided for you if needed. Please expect that only minimal nutritional intake can be provided for you at this time.
- You will slowly increase your mobility with the help of nurses and/or physiotherapists. You will likely be expected to get out of bed the evening of your procedure.
- You will be wearing a cardiac monitor.

- You will have blood tests and electrocardiograms (ECGs) done the morning after your procedure.
- You will have an echocardiogram (ultrasound of your heart) done before you are sent home.
- Your nurse and/or doctor will check your groin sites to make sure they are healing properly. There may be bruising at the site where the tubes were placed. Bruising may spread down your leg.
- If you are not already on, you will be started on medications that thin your blood.
- Expect to stay in the hospital overnight. The usual length of stay is 1 – 3 days. Be prepared to go home the day after your procedure.
- If you live alone, you should have a family member or a friend stay with you for few days after your procedure.

You may also wish to go to a retirement home for few days after your procedure for help while you recover. There is a cost for this type of care. Call your Local Health Integrated Network office (formerly CCAC) for more information. You will have to make these plans before your procedure.

## Going home

- Have a family member or a friend bring you clothes and shoes the day after your procedure.
- Buildup your activity level as tolerated. We recommend you walk at a pace that you are still able to talk. Listen to your body and go at your own comfort level.



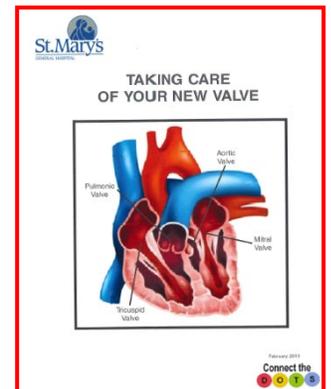
- Take short walks daily that you may slowly increase with time. For example:
  - Week 1 – walk 5 minutes 5 to 6 times daily.
  - Week 2 – walk 10 minutes 3 times daily.
  - Week 3 – walk 15 minutes twice a day.
  - Week 4 – walk 30 minutes daily.



- Avoid tough activity or heavy lifting (nothing over 10 pounds) for 2 weeks.
- Do not strain when having a bowel movement
- You cannot drive after your procedure. Ask your doctor when you can start driving again.
- You will be given medication prescription before going home. Ask your nurse or doctor if you have any questions.

You will likely be started on a blood thinner medication that you need to take for 1 to 6 months. The two most common medications are called Plavix (Clopidogrel) or Ticagrelor (Brilinta). You will also need to take Aspirin lifelong. If you are already taking a blood thinner like Coumadin one of the above medications may not be given.

- Antibiotics may be given before some procedures and surgeries to help decrease the risk of getting endocarditis (an infection of the lining of the heart and valves). You will have teaching and be given **endocarditis booklet** during your hospital stay.



- Remember to always tell your doctor, nurse practitioner and dentist of your replaced valve. You will need to take antibiotics before each visit to the dentist. Your dentist or family doctor can give you the prescription for antibiotic.

- Take good care of your teeth and gums. People with dentures should have checkups twice a year to make sure that their gums are healthy and their dentures fit properly.



## Care of your access site

Look at your access site every day. It may be tender and slightly red, have a small lump or mild swelling, or have clear discharge. You may have bruising that spreads down your leg.

### Taking a bath or shower.....

If your procedure was done through a small puncture site in your groin:

- You may shower the day after your procedure.
- You may have a bath after the access site is healed. Healing is when the site is dry with no open areas and no drainage. This is usually within 72 hours.



If you had a cut in your groin or side of your chest:

- You may have a sponge bath for the first 5 days.
- You may shower 5 days after your procedure.
- You may let soapy water run over your cuts but do not scrub them.
- Gently pat your cuts dry.
- Do not take a bath until your cuts are healed. Your cuts are healed when they are dry with no open areas and no drainage.

## Call your doctor if you notice

- Pain at the access site.
- An increase in bruising or swelling from when you left the hospital.
- A lump larger than a golf ball at the access site.
- Redness, warmth to touch or pus draining from the access site. These may be signs of infection.
- Fever greater than 38°C or 101°F, or chills.



**If your doctor is NOT available, go to  
An Urgent Care Centre  
Or nearest Emergency Department**

## If you develop any sudden bleeding, swelling or severe pain

- Apply direct pressure over the site and call **911** right away

## Follow-up appointments

- Family doctor – 1 week.
- Cardiologist – 4 to 6 weeks.
- TAVI doctor – 1 to 3 months.
- Cardiac Rehabilitation Centre if ordered by your doctor.

## Visiting hours

- There are no specific visiting hours. We ask that your family not visit during shift change. This occurs between 6:30 to 7:30 in the morning and at night. There may be times that your health care team will ask your family to leave the unit. This can happen when they need to do assessments, care rounds, tests and treatments. We will always try to keep you and your family informed and involved.
- We ask that only family and close friends visit the Intensive Care Unit.
- Please do not visit if you are ill.

## Fragrance restricted

We are a fragrance restricted hospital. Please do not wear or bring perfume, cologne, aftershave, scented hair spray or scented products.

## We are smoke free

St. Mary's General Hospital is smoke-free. This means that smoking is not allowed anywhere on the grounds, including parking lots, garages and vehicles.



For support or help to stay smoke-free:

- We can provide you with nicotine replacement products that make your hospital stay more comfortable. Talk to a member of your health care team at SMGH.
- Contact Smoker's Helpline toll-free at 1-877-513-5333 or [www.smokershelpline.ca](http://www.smokershelpline.ca)
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