

About Transcatheter Aortic Valve Replacement (TAVR)

Steward

What It Is

Definition

The aortic valve is located between the pumping chamber on the left side of the heart and the aorta, which is a major artery. The aorta carries oxygen-rich blood from the heart to the rest of the body. The valve should be closed while the heart is filling with blood. When the heart chamber squeezes to push blood into the aorta, the valve should open fully to allow blood flow.

Transcatheter aortic valve replacement (TAVR) is a means of replacing your aortic valve that is narrowed by a method which is much less invasive than traditional aortic valve replacement surgery.

Reasons for Procedure

TAVR allows physicians to replace a severely narrowed aortic valve due to aortic stenosis without a conventional chest incision.

Aortic stenosis is a condition that results from narrowing of the aortic valve in the heart. When this narrowing occurs it can put increased stress and pressure on the heart muscle. This can lead to many symptoms including chest discomfort or pain, shortness of breath, leg swelling, fatigue, or fainting. Left untreated, the heart muscle can weaken over time resulting in worsening of symptoms and premature death. The most common cause of aortic stenosis is degenerative (age related calcium deposits).

Alternatives to TAVR

- 1. Medical Therapy** – There are certain medications that may be prescribed to alleviate some of the symptoms of aortic stenosis. These do not stop the progression of the disease.
- 2. Conventional Aortic Valve Replacement** – Your aortic valve is replaced through a large incision on the front of your chest while on a heart-lung machine.
- 3. Balloon Aortic Valvuloplasty** – A balloon is inserted into your aortic valve through a catheter which temporarily enlarges the valve opening. This may result in a three to six month improvement of symptoms but has not been shown to prolong your life.

Possible Complications

If you are planning to have a valve replacement, your doctor will review a list of possible complications, which may include:

- Infection
- Bleeding
- Irregular heart rhythm
- Scarring
- Blood clot formation resulting in a stroke or kidney damage
- Valve does not function correctly
- Complications from anesthesia

Some factors that may increase the risk of complications include:

- Other heart conditions
- Lung conditions
- Chronic illness, including high blood pressure and diabetes
- Increased age
- Infections
- Smoking
- Obesity



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What To Expect

Prior to Procedure

Before your procedure you will meet with one or more of the physicians to discuss your history. You will then likely be referred for further testing which may help determine if the TAVR procedure is right for you. This testing may include:

- Cardiac Catheterization. A small catheter is threaded into your heart from a blood vessel in your arm or leg. This is done to obtain images of your coronary arteries.
- Transesophageal Echocardiogram. A small camera is passed through your esophagus to obtain high quality images of your heart.
- Computerized Tomography (CT) of chest, abdomen and pelvis. Contrast solution is injected into a vein followed by CT scan images to determine the best approach and valve size.

Talk to your doctor about your medication. You may need to stop taking certain medication for one week before surgery, such as:

- Blood-thinning drugs, such as warfarin (Coumadin)
- Anti-platelet drugs, such as clopidogrel (Plavix)
- Diabetes medications, such as metformin (Glucophage)

Your doctor may also ask you to:

- Do not eat or drink anything after midnight, unless told otherwise by your doctor.
- Arrange for a ride to and from the hospital.
- Arrange for help at home after the procedure.

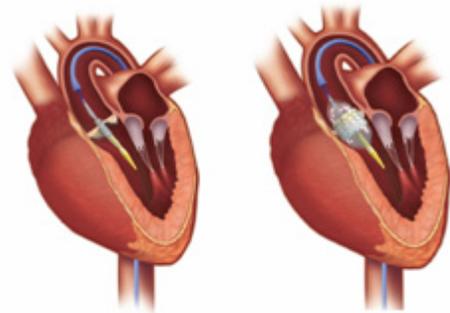
Anesthesia

TAVR is done with general anesthesia. You will be asleep.

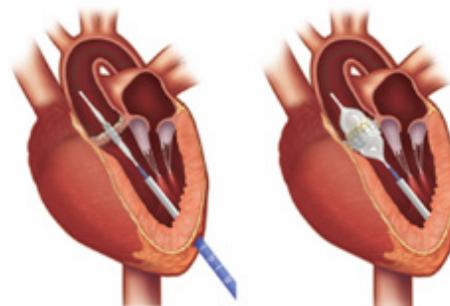
Description of the Procedure

The two most common approaches for the TAVR procedure are:

- *Transfemoral* – A catheter is inserted through the artery in your groin area and carefully passed up into the heart. Your new valve is then implanted through this catheter inside the narrowed valve.



- *Transapical* – A tiny incision is made in your chest wall and the new valve is implanted directly into your heart inside the narrowed valve.



After the Procedure

You will be monitored in an intensive care unit after surgery. When you wake up, you will notice that you are attached to a number of devices, including:

- Monitors to track your heart rate, breathing rate, blood pressure, and the percentage of oxygen in your bloodstream

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Steward

- A ventilator tube in your mouth and lungs to breathe for you, or an oxygen mask or tube to give you extra oxygen
- Tubes to drain extra fluid from your chest
- A tube that goes into your nose and down to your stomach to drain your stomach of excess fluid and gas
- A catheter in your bladder to drain urine
- An IV to provide fluids, electrolytes, and pain medicines directly into a vein

How Long Will It Take?

The surgery can take anywhere from 2 to 4 hours.

How Much Will It Hurt?

Anesthesia will block pain during the surgery. You will be given pain medicine to help manage the pain after the surgery.

Average Hospital Stay

The usual length of stay is 5 to 7 days. The length of stay will depend on your overall health and your recovery progress. Your doctor may choose to keep you longer if complications occur.

Postoperative Care

At the Hospital

You will be taken to the Intensive Care Unit (ICU) after your TAVR, where you will be cared for by skilled critical care physicians, physician assistants, nurse practitioners, nurses, therapists and technicians.

Once you are awake and able to breathe on your own, the breathing tube will be removed. The nurses will assist you with coughing, deep breathing and getting out of bed. These are important keys to your recovery. When you are ready to leave the ICU you will move to a hospital bed for your continued recovery.

At Home

It is very likely that you will go to a short term rehabilitation facility. The facility will be determined

by your medical needs in conjunction with a social worker, you and your family. At rehab the focus is to regain your physical strength and to return you to your everyday activities. While at rehab, nurse practitioners from our TAVR team will be in contact with the health care providers at the rehabilitation facility to assess your progress and provide continuity of care.

Recovering after Surgery/What to Expect

It is important for you to remember that the full recovery from your TAVR will take many months. Some patients tend to get discouraged when they have an occasional “bad” day. This is to be expected, and you may experience some setbacks during your recovery. All patients take their own course, and some make faster or slower progress than others. Most patients have improvement of symptoms in four to six weeks. A brief readmission to the hospital may be necessary for closer monitoring during your recovery.

When to Call Your Surgeon

After you leave the hospital, contact your doctor if any of the following occurs:

- Weight gain equal to or greater than 3 pounds
- Temperature greater than 100 degrees
- Chills
- Any wound drainage
- Shortness of breath at rest
- Increased leg swelling
- Chest pain

For more information, call the Steward Center for Advanced Cardiac Surgery at 617-789-2045.