Transcatheter Valve Procedure

PATIENT GUIDE

An educational guide for patients undergoing transcatheter valve replacement therapy

UAB MEDICINE
HEART & VASCULAR SERVICES
Knowledge that will change your world
# Table of Contents

Introduction ................................................................. 2  
What is Aortic Stenosis? .................................................. 3  
Transcatheter Aortic Valve Replacement (TAVR) ....................... 5  
Hospitalization and Procedure ........................................ 8  
Recovery and Follow Up ............................................... 10  
Notes ................................................................. 15
Introduction

Welcome to UAB Hospital in Birmingham, Alabama.

The purpose of this booklet is to provide you and your family with information on aortic stenosis and transcatheter valve replacement therapy.

It includes details about aortic stenosis, including its symptoms and treatment. It also explains how we’ll care for you during your transcatheter aortic valve replacement and how to care for yourself once you return home. You’ll need this booklet throughout this process, so keep it close at hand.

Your doctors, nurses, and other members of the care team will discuss much of the information in this booklet with you. Please feel free to ask questions and express any concerns.

What is Aortic Stenosis?

Aortic stenosis is a narrowing of the aortic valve, the valve that allows blood to flow from the heart’s lower left chamber into the aorta and to the entire body. This narrowing prevents the valve from opening properly, forcing the heart to work harder. This causes pressure to build up in the lower left chamber of the heart, thickening the heart muscle. The pressure can lead to chest pain, blood backup into the lungs, and other symptoms. Severe forms of the condition can prevent enough blood from reaching the brain and the rest of the body. Eventually, the pressure can cause heart failure, fatigue, and dizziness. Aortic stenosis can occur when calcium builds up on the valve over several years, making it thick and hard. It also can be caused by a heart defect or infections of the heart that damage the valve. Aortic stenosis is not common, and it affects more men than women. It does occur in children but much less frequently. Severe cases often require surgery.

NORMAL VALVE

The leaflets or “flaps” in a normal, healthy aortic heart valve open wide enough to allow blood to flow easily from the valve into the aorta, where it is pumped out to the rest of the body.

STENOTIC VALVE

The leaflets or “flaps” in a stenotic or calcified aortic heart valve have become so narrow that blood no longer moves easily from the left ventricle into the aorta. This reduced blood flow also means that the body gets less oxygen, which may cause symptoms such as shortness of breath.
WHAT CAUSES AORTIC STENOSIS? THERE ARE THREE MAIN CAUSES:
1. Genetics: A person is born with a valve that has two leaflets (bicuspid) instead of three
2. Rheumatic disease
3. Aging: Buildups of cholesterol and/or calcium mineral deposits over the years

WHAT ARE THE SYMPTOMS OF AORTIC STENOSIS?
• Shortness of breath
• Fatigue
• Chest pain/tightness
• Syncope or presyncope (fainting spells)
• Swelling in feet or ankles
• Palpitations or “irregular heartbeat”

WHAT ARE MY TREATMENT OPTIONS?
There is no drug therapy for treating aortic stenosis. Replacing the valve through traditional open surgery or with a transcatheter procedure are the two options for treating severe symptomatic aortic stenosis.

Transcatheter Aortic Valve Replacement (TAVR)

PREOPERATIVE EVALUATION
• Initial evaluation in clinic by an interventional cardiologist and cardiac surgeon (including lab work, EKG, and echocardiogram)
• Heart catheterization is required to make sure there aren’t any blockages in the arteries that supply blood to the heart (this test can be done with your local cardiologist or at UAB Hospital)
• CT scan to determine the approach for the procedure, as well as valve size. This CT scan allows for 3D views of your native heart valve and of the arteries to your legs (this test must be done at UAB Hospital).
• Evaluation by a 2nd surgeon: For insurance coverage, you are required to be evaluated by two separate cardiac surgeons for surgical replacement of the valve vs. TAVR

TRANSCATHETER VALVES
Various types of valves may be used in a TAVR procedure. Some examples are pictured below.
THREE TAVR APPROACHES

There are three approaches that we routinely use for TAVR. The CT scan that you have will assist in your physician’s choosing the right approach for you. The three approaches are transfemoral, transaortic, and transapical.

- **Transfemoral Approach**
  The transfemoral approach is most commonly used if the arteries going to your legs are large enough. This approach allows the valve to be inserted through an incision in the groin without requiring an incision to the chest. The sheath used is about the size of a pencil.

  - **Sapien XT Sheath:**
    The NovaFlex+ transfemoral delivery system guides the Edwards SAPIEN XT valve across the aortic arch and is positioned in the native aortic valve.

  - **Sapien XT Deployment:**
    The Edwards SAPIEN XT valve is expanded into place with a balloon, and the delivery catheter is ready to be removed.

  - **Sapien XT Function:**
    The Edwards SAPIEN XT valve is designed to function immediately in place of the diseased native valve.

- **Transaortic Approach**
  The transaortic approach is used when the arteries to your legs are too small or too calcified. Your doctor will put the sheath through a small incision in your upper chest. You will generally have one small drain placed next to this incision that will be removed 1-2 days after the procedure.

- **Transapical Approach**
  The transapical approach is used when the transfemoral or transaortic approach is not possible. The sheath is placed through an incision in your chest between your ribs to access the apex (the lowest part) of your heart. You will generally have one chest tube placed next to this incision that will be removed 1-2 days after the procedure.
WHAT SHOULD I EXPECT DURING MY HOSPITALIZATION?
We are here to take care of you when you have your procedure. This section will guide you through the preparation, procedure, and recovery process. Your nurse also will be happy to answer your questions. We start making plans for your discharge to home as soon as you’re admitted, starting with questions about your support system at home. While most of our patients are able to go home with their families caring for them, some patients may need the help of a home health care agency or a referral to a rehabilitation center. If we believe you may need one of these services, we’ll discuss this matter with you and your family and include the social worker and care manager, who can make arrangements for these services.

If you live alone, you’ll need to ask a friend or relative to help you for the first week. No one should go home alone and try to care for himself/herself without help. If you don’t have anyone to help you, ask your nurse to contact the social worker or care manager. Your nurse will teach you what you need to know before and after your procedure and for when you go home.

PREPARING FOR YOUR PROCEDURE
Getting ready: If you’re being admitted directly to the preoperative holding area on the day of your procedure, please refer to the instructions you were given. For patients admitted to the hospital prior to a procedure, the nursing staff will help you prepare. We’ll shave the hair on your skin from chin to ankles, and you’ll need to wipe down with a medicated cloth the night before your procedure after your hair has been shaved. After you’ve used the medicated cloth, do not apply deodorants, lotions, creams, moisturizers, powders, or makeup. Do not bathe or shower again, as the antiseptic should remain on the skin from the previous night. You also will wipe down with medicated cloths in the morning before you go to the operating room. We want you to brush your teeth, but just rinse your mouth. Do not swallow any water. You won’t be able to eat or drink anything after midnight unless the anesthesiologist tells us otherwise.

We’ll administer medications while you’re in the hospital. Please inform your nurse of any medications you were taking at home.

Valuables: Please give your family all of your valuables and personal items, including jewelry, eyeglasses, contacts, dentures, or partials, since you’ll go to the Cardiovascular Intensive Care Unit (ICU) after your procedure.

DURING YOUR PROCEDURE
Initially you will be taken to the preoperative holding area, which is located on the 5th floor of the UAB Hospital North Pavilion. You may be visited by anesthesia staff. You will then be taken to the operating room, and the anesthesiologist will give you anesthesia or sedation through an intravenous (IV) line. The TAVR procedure usually takes about an hour, but you will be away from your family for about 3 hours.

Your family will be shown where to wait during your procedure. An electronic status board located in the 5th floor waiting room will keep your family informed of your progress. At least one family member should stay in the waiting room at all times. Please let the patient and family care representative in the waiting room know how to reach someone if all family members must leave. If your family members have any concerns while you’re in the operating room, they should discuss them with the patient and family care representative.
Recovery and Follow Up

RECOVERING AFTER YOUR PROCEDURE

CICU: You’ll go directly from the operating room to the Cardiovascular Intensive Care Unit (CICU). This is a 20-bed unit where nurses are always watching and taking care of you. Your anticipated length of stay in the CICU is one day.

Family visits: Once you’re transferred to the CICU, the surgeon will meet with your family in a small waiting room outside the unit. After your arrival in the CICU, it will be about one hour before your family can visit.

The CICU has liberal visiting hours. On the first visit, all family members will be allowed to stay for 5-10 minutes. For subsequent CICU visits, only two visitors will be allowed at the bedside. Visitors may swap out as needed, but only two visitors can be at the bedside at any one time. Children under 12 years of age may be asked to wait outside of the CICU. Family members should coordinate these visits with the bedside nurse or charge nurse.

The Progressive Care Unit: You will go from the CICU to a nursing unit on the 5th floor of UAB Spain Wallace Building. When you get to your room, we’ll check your blood pressure, pulse, and temperature and listen to your lungs. Your family can visit once you’re settled in. The hostess in the CICU waiting area will let your family know when you’ve moved to your hospital room. Your family may bring your gown, pajamas, robe, slippers, and personal care items at this time.

AFTER YOUR PROCEDURE: HOW YOU CAN HELP YOURSELF

Some of the best ways to help yourself after your procedure are to take deep breaths and cough and to get out of bed and walk.

Keep your airways open: The nurse will show you how to use an incentive spirometer. After using it, you should take several deep breaths and cough every 1-2 hours during the day and when you’re awake at night. Your family can help you remember when to do this. Using the incentive spirometer, deep breathing and coughing will clear your lungs and help prevent fever.

Get moving: You’ll be sitting in a chair for at least 30 minutes in the evening on the day of your procedure. Post-op day 1: You should walk at least four times a day. A nurse or physical therapist will help you at first, then your family should help you. Slowly increase the distance and frequency of your walks.

Walking will help you in several ways: It helps the soreness go away sooner, it helps prevent blood clots from forming in your legs, and it helps you cough mucus out of your lungs. Also, walking is crucial in helping you regain strength and feel better. The heart is a muscle that gets stronger with exercises such as walking. When the heart gets stronger, you’ll feel better, because the heart is doing a better job of pumping blood through your body.
WHAT TO EXPECT AS YOU RECOVER

Arrhythmias: Some patients will develop abnormal heart rhythms after valve procedures, so each of our patients has a heart monitor.

Traveling home: Most of our patients travel home by car. It doesn’t matter whether you ride in the front or back seat; sit wherever is most comfortable to you. You may wear a seatbelt; it will not harm your incisions. If you have a long trip home, you should stop roughly every hour to get out and walk around. This will help prevent blood clots from forming.

Under no circumstances should any patient who has had a heart procedure drive himself or herself home from the hospital. Someone else should drive you for at least the first two weeks.

Discharge: Most patients go home 2-5 days after valve replacement. Patients with a transfemoral approach will usually be discharged 2-3 days after, and patients with a transaortic or transapical approach usually will be ready for discharge 4-5 days after.

WHAT TO EXPECT AT HOME

When to call the doctor: You won’t likely have problems after your procedure, but if you notice any of the following symptoms, please call either your local doctor or our valve clinic office:

• Extreme fatigue
• Shortness of breath
• Severe dizziness
• Increased swelling
• Increased redness or tenderness at the incision points/puncture sites or drainage from the incisions
• Fever/chills

It is important to notify our office of any hospital admissions for one year after your procedure, even if the reason for admission is not heart-related.
FOLLOW UP WITH YOUR DOCTOR

You will need to come back to UAB for follow-up at 30 days and 1 year after the procedure. This follow-up is important to make sure your valve is functioning properly.

After you return home, you should see your local doctor – preferably the one that referred you here for your procedure – so that he/she can listen to your heart and lungs.

OTHER CONSIDERATIONS

Fluid intake: It isn’t wise to drink a lot of fluids for the first two weeks after a valve procedure. Fluid limits are different for everyone, but typically your intake should be limited to 1.5-2 liters per day. Drinking more than this may lead to increased swelling and excess fluid.

Exercise: Exercise can improve the function of your heart, help reduce stress, and make you feel better. Walking, very light weightlifting, and water workouts are types of activities that will improve muscle strength and energy levels. Walk and exercise at your own pace. You may need to pause and catch your breath. You should watch for signs of being over-tired or over-stressed while exercising, including:

- Being so short of breath that you cannot carry on a conversation or say more than a few words
- Being so short of breath that it does not get better when you slow down or stop the activity
- Dizziness or feeling faint
- Chest pain, tightness, or pressure
- Pain in your shoulders, arms, neck, or jaw
- Skipping heartbeats or very fast or slow heart rate (pulse)

DENTAL PROCEDURES

Wait at least three months after your procedure before undergoing any dental or surgical procedures. Inform every doctor or dentist who takes care of you that you’ve recently had a heart procedure. You will need to take antibiotics before you have a dental procedure or certain types of surgery.