TRANSCATHETER AORTIC VALVE REPLACEMENT (TAVR)

Making the decision

Henry Ford Health System®

CENTER FOR STRUCTURAL HEART DISEASE
HENRY FORD HOSPITAL

Your provider has found that you have a diseased aortic valve and asked the Center for Structural Heart Disease at Henry Ford Hospital to see if you would be helped by a special procedure called Transcatheter Aortic Valve Replacement (TAVR).

'Transcatheter' means we use a catheter (a small flexible and hollow tube) to place a new valve in the heart. This is done by making a small opening in an artery, threading the catheter with the new valve on the end through the vessels and into the right position. The valve is then opened in-place. During the procedure, you will receive anesthesia so you are asleep and will have a tube in your throat to help you breathe. Unlike open heart surgery, there is no need to make a large opening in the chest for the procedure, nor does it require use of a bypass machine.

This booklet is for you to read, share with your family or friends, and to bring with you to clinic appointments. Think about questions that you or your family might want to ask, and write them down. During your clinic appointment, we will explore your questions and explain anything you are not sure about.

WHY DO YOU NEED TO HAVE YOUR AORTIC VALVE REPLACED?

You have been told you have a disease of your aortic valve called aortic stenosis.

The 'aortic' valve is one of four valves in your heart. These valves make sure blood flows through the heart in the right direction. The aortic valve is the last valve the blood passes through when the blood leaves the heart. 'Stenosis' means a narrowing of the valve opening.

Aortic stenosis most often occurs as people grow older. Over time, the valve becomes thick, stiff and hard; the valve opening becomes smaller over time making it increasingly hard for the heart to push blood out of the heart.

The blood slowly backs up into the lungs, which may cause you to feel short of breath, fatigued, have chest heaviness or feel faint or lightheaded.

Until now, the usual treatment for severe aortic stenosis has been open heart surgery. Open heart surgery means the person's chest and heart itself are opened so the heart may be operated on directly. The diseased valve is removed and replaced with a new valve. During the surgery, the person's blood is circulated outside the body through a special machine called a heart-lung bypass machine. This is called a surgical aortic valve replacement (SAVR). For many people, surgical valve replacement is the best option.

SURGICAL VALVE REPLACEMENT MAY NOT BE THE BEST OPTION IF:

- You are older and have other problems like lung or kidney disease.
- You have had previous open heart or chest procedures.
- You are not strong enough for the recovery of a major surgery.
- You have had radiation to the chest.

IS TAVR THE RIGHT CHOICE FOR YOU?

In order to decide whether TAVR would be a choice for you, the doctors and care team need to gather information about you, your heart, your blood vessels and your overall health.

This is not just the care team's decision. If TAVR is offered, you may choose to continue with your current treatment or talk with your doctor about other options.

Every person undergoes a thorough review to determine if TAVR is an option. The review usually involves two visits (sometimes more) to the hospital. If you are from out of town, we have one and two-bedroom apartments available for overnight stays if needed. Please contact them directly for reservations at (313) 916-3299. If you are in or have been in the hospital, some or all of the testing may already be completed.

THE REVIEW PROCESS: WHAT TO EXPECT

Step 1. Your doctor makes a referral to the Center for Structural Heart Disease or you contact us directly.

Step 2. Retrieval of previous health documents, testing reports and imaging studies from your doctor (Echocardiogram, Cardiac catheterizations, Pulmonary function testing, blood tests, cardiologist and surgical notes, and all imaging studies on CD in "Dicom" format). Outside testing and records are reviewed prior to your initial visit.

Step 3. Clinic visit to evaluate for TAVR assessment.

a. Assessment/Appointments by: Structural Heart Cardiologist as well as a Cardiac Surgeon.

b. Additional assessment/appointments may include: Clinical Psychologist, Cardiac Nursing, Geriatrician, and Pulmonologist.

Step 4. Testing as necessary: Echocardiogram, Computerized Tomography (CT) of chest, abdomen and legs and Cardiac Catheterization. Further testing that may be needed: Stress testing, pulmonary function test.

Step 5. Multi-disciplinary team conference: your case is presented and all studies reviewed by our Structural Heart Team which includes the cardiologist, heart surgeon, heart imaging specialist, anesthesiologist, psychologist and cardiac nursing. Various options for treating your valve problem are discussed and a treatment plan is developed.

Step 6. You will be notified of the Structural Heart Team's decision. If a procedure is recommended you will be contacted regarding scheduling your valve replacement.

In order to complete a thorough assessment, in addition to the clinic visit, there are a series of tests that must be performed to give us a full picture of you, your health and heart problem. Our scheduling coordinator will try to keep your appointments to a minimum, but expect at least two visits. Sometimes your own doctor has performed some of these tests which will help in your evaluation and may help reduce appointments needed.

For those who do not speak or understand English well enough to discuss your health or to make medical decisions, we would be happy to arrange for a medical interpreter. There is no fee for this service. Please notify us if interpreter services are needed and allow a few days for the arrangements to be made.

WHAT TO BRING TO YOUR APPOINTMENT

- ✔ This booklet and your questions. Keep all your TAVR information and documents in one folder, and bring the folder with you to your clinic visits.
- ✔ List of your current medications. Either ask the pharmacy to print the list or bring your own list.
- ✔ Medical records, testing reports and CDs of your imaging studies provided by your referring doctor.
- ✔ Your support person: this may be a spouse, a family member or a good friend. This person will meet with you and the team, listen to the discussion, help provide information about you and provide you with support during the TAVR process.

THE CLINIC VISIT: WHAT TO EXPECT

Meeting with the Structural Heart Physician: to review your history, your imaging studies (echocardiogram and cardiac cath) and discussion of options.

Meeting with Cardiac Surgery: to review your surgery options and surgery risk. If your leg vessels are too small for a procedure through the leg, the surgeons may lead a TAVR through a mini-chest procedure.

Meeting with Clinical Psychologist: to assess your memory, understanding of the plans and what type of support may be most helpful to you.

Meeting with our Structural Heart Nurse: to assess your functional status, quality of life and activity levels to help plan your hospital stay and post hospital needs. She will also be your office contact person for questions or concerns.

During your visit, we will review both SAVR and TAVR, how they are done and the risks or benefits of each procedure.

We will ask questions about your heart symptoms, your everyday life, what you can and cannot do for yourself, and your home situation.

We wiill do a walking test, grip test and a memory test.

We may take a picture of you. This helps the team when we meet after your clinic visit.

We will attempt to answer all your questions about your heart problem, the testing process, your treatment choices and what to expect next.

We will provide you with contact information for any questions you may have afterward.

HEART TESTS: WHAT TO EXPECT

There are a series of tests that will help us decide if you are eligible for a TAVR procedure and how we can best replace your heart valve. These are called screening tests and may take more than one visit to complete. Our scheduling coordinator will try to group them together. However, in order to protect your kidneys from the contrast that some of the tests require, we may need to schedule these tests on different days.

Everyone being considered for TAVR will have these tests:

ECHOCARDIOGRAM: 'Echo' means using sound waves to assess structures, 'Cardio' means heart, and 'gram' means printing.

The echocardiogram is an ultrasound or sonar test. High-pitched sound waves or bounced off the parts of the heart creating pictures. This allows us to look at the heart muscle, the valves, the blood vessels and how the blood flows through the heart. The test is performed while lying down on a stretcher, an ultrasound probe (microphone) with gel on the end slides across the chest. The test takes about **30 to 60 minutes.**

CARDIAC CATHETERIZATION: 'Cardiac': means heart, 'Catheterization': means using catheters to assess. This test may include three different assessments of the heart.

- **The cardiac angiogram:** is a test that checks the blood flow in the vessels that feed the heart. A heart doctor that specializes in doing heart procedures inserts a long, flexible catheter into an artery (groin or wrist) through a small needle. Contrast (IV dye) is injected through the catheter so the vessels can be seen and blockages checked.
- Pressure assessments of the heart may be performed to assess the aortic valve. Catheters are placed on each side of the valve to assess the severity of the disease.
- The left side of the heart may be checked for how well it is pumping.

The test takes about **one to two hours**, but you need to stay in the hospital for **four to six hours** afterward to make sure there is no bleeding from the site.

COMPUTERIZED TOMOGRAPHY (CT/CAT SCAN): 'Computed': uses a computer; 'Tomo' means slice or section; graphy: means image or print out.

The CT scan is one of the most important tests performed to help evaluate your heart valve and plan your procedure. The CT scan is a special x-ray that takes many pictures of the heart and blood vessels in small 'slices'. The multiple slices are put together by the computer to recreate your heart and blood vessels in a three-dimensional image.

During the CT test, you will receive contrast (IV dye) to help outline the heart and blood vessels so they are better viewed. This will require an IV catheter, usually in the right arm, for the contrast to be injected.

If you have weak kidney function, you may need to come in hours before the CT for pre-hydration, extra fluid through the IV to protect the kidneys. The CT takes about **20-30 minutes** to complete.

BLOOD TESTS: The blood tests will include complete assessments of your electrolytes, kidney function, blood counts, bleeding time, and tests that assess for heart failure. Blood tests may be obtained in the central testing area on the first floor of Henry Ford Hospital.

ADDITIONAL TESTS:

TRANSESOPHAGEAL ECHOCARDIOGRAM (TEE): 'Trans': means through; 'esophageal' means the tube from the mouth to the stomach.

TEE is done when your heart team thinks they need a more detailed look at your heart. It uses an ultra-sound probe like the echocardiogram, but shrunk down to about the size of a marker pen. The ultrasound probe is passed down the throat to the level of the heart and pictures are taken of the heart and valve with no blockages from the ribs or chest wall. This test takes about **60 minutes**. You will receive medication to make you sleep during the procedure.

DENTAL EXAM: You may require assessment by your dentist if you have any signs of significant dental disease.

PULMONARY FUNCTION TESTING: If you have a history of lung disease or significant breathing problems, you may need a test to assess your lung function.

Deciding the best option: Is TAVR right for you?

After your clinic visits and all testing is completed, the **Structural Heart Team** meets in conference to review all the information we have about you, including all clinic assessments, test results and imaging studies. From this information, the team determines which treatment choice would be best for treating your heart valve problem. Our goal is to find the treatment option that will help you feel better, live longer and is in keeping with your wishes and goals.

Based on the team discussion, the recommendation may be for:

MEDICAL MANAGEMENT: This means your aortic stenosis is best managed without replacement right now. Your family doctor or heart specialist will continue to follow you and treat your aortic stenosis symptoms with medications. Your doctor may ask you to return to the Center for Structural Heart Disease in the future.

SURGICAL AORTIC VALVE REPLACEMENT (SAVR): This means that open heart surgery is determined to be the best option for your valve replacement. You will be contacted by the heart surgeon's office for further planning.

TRANSCATHETER AORTIC VALVE REPLACEMENT (TAVR): This means the heart team believes your aortic valve may be replaced with the catheter procedure. This procedure may be performed through different pathways:

- **Transfemoral TAVR:** the catheter is inserted through an artery in the groin, travels up the major artery in the chest (aorta) and the valve is placed.
- **Transcaval TAVR**: the catheter is inserted through a vein in the groin, travels part way up the major vein in the abdomen (vena-cava) then crosses over to the aorta and travels to the aortic valve and the new valve is placed.
- **Transapical TAVR**: the catheter is inserted through a small opening at the 'pointed' end of the heart called the apex, travels up into the valve and the new valve is placed. An opening is made in the chest wall on the left side for the catheters.
- **Transaortic TAVR**: the catheter is inserted into the aorta through a small incision made at the top of the breast bone. The catheters travel down into the valve opening and the new valve is placed.

PALLIATIVE APPROACH: This means that the team believes that a heart valve replacement would not help you feel better or live longer. We may refer you to a team that may help you with symptoms with a goal of improving your quality of life.

WHEN WILL YOU KNOW?

You will be called after the team conference discussion of your case. The plan is also sent to the doctor who referred you to the Center for Structural Heart Disease.

If we recommend TAVR as the best option for you and you do not hear from us when you expect a call, you have questions or would like to share more information, please call us at (313) 916-1878.

Take time to think about whether you want to proceed with the procedure. Talk with your family. We schedule the procedure based on the severity of your symptoms and the availability of the right team for your needs. Think about if you want to be placed on a 'call list' in the event a date comes up sooner than you expected.

THERE ARE THREE IMPORTANT FACTORS THAT DETERMINE HOW LONG BEFORE YOUR PROCEDURE MAY TAKE PLACE:

1. The team has all evaluation results and is able to fully discuss your case.
2. The date you are able to go ahead with the procedure.
3. The openings are available at the hospital with the right team members and resources.

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