Hartford HealthCare

Heart & Vascular Institute

Your Guide To **Aortic Stenosis and Transcatheter Aortic Valve Replacement (TAVR)**

Transcatheter Aortic Valve Replacement, or TAVR, is a minimally invasive procedure to repair a damaged valve by inserting a replacement without removing the old, damaged one.

The procedure was approved seven years ago by the Food and Drug Administration as an alternative for high-risk patients with severe aortic stenosis who were not candidates for open heart surgery. Doctors at Hartford HealthCare's Heart & Vascular Institute at Hartford Hospital were the first in the state to perform the procedure, which inserts a new valve within the damaged valve by guiding the replacement through an incision in the leg.

Since then, they have performed more than 800 TAVR procedures, making the Heart & Vascular Institute's program one of the largest in New England. Results nationwide have been encouraging: A study of intermediate-risk patients has found no difference in results between TAVR and open heart surgery. Our doctors are now participating in a national study that allows TAVR for low-risk patients.

What does this mean, besides patients going home three days after the procedure and quickly returning to normal activities instead of the weeks or months required to recover from open heart surgery? It could mean that TAVR might someday replace open heart surgery as the go-to treatment for all patients with severe aortic stenosis. For you, it could mean both a longer life and a higher quality of life.

To request an appointment from one of our Heart & Vascular Institute experts, visit *HartfordHealthCare.org/HeartConsult3* or call 844.975.1134.

TAVR FAQ: Is TAVR right for you?

Q: What is TAVR?
A: TAVR, or Transcatheter Aortic Valve Replacement, is performed on patients with aortic stenosis, initially only those classified as high risk or inoperable. All patients are carefully evaluated by a Heart Team comprised of interventional cardiologists, cardiothoracic surgeons, imaging specialists, advanced practitioners, and nurses to see if they are candidates for traditional surgical aortic valve replacement or if TAVR would be the best treatment option.

Q: When did Hartford HealthCare begin offering TAVR?
A: January 2012 at Hartford Hospital.

Q: When was TAVR approved by the Food and Drug Administration?
A: The FDA approved the SAPIEN Transcatheter Heart Valve in November 2011 for the treatment of patients with severe aortic valve stenosis who have been determined by a cardiac surgeon to be inoperable for open aortic valve replacement. In August 2016, the FDA expanded the use of TAVR for patients at intermediate risk for surgery.

Q: Who performs a TAVR procedure?
A: TAVR is a collaboration between an interventional cardiologist and a cardiothoracic surgeon.

Q: What is aortic stenosis?
A: Aortic stenosis, often related to age, can be caused by mineral deposits (calcium) on the aortic valve's leaflets. Eventually, the leaflets stiffen and lose their capacity to open completely, making it more difficult for the heart to pump blood through the aortic valve to feed the rest of the body. Because blood now has less oxygen, it can cause symptoms like shortness of breath, lightheadedness, fatigue and chest pain.

An estimated 2.5 million people over age 75, or more than 12 percent of that demographic in the United States, have aortic stenosis. And 80 percent of adults with the disease are male. An estimated 50 percent of people with severe aortic stenosis will die, on average, within two years if they do not have their aortic valve replaced.

Q: How is aortic stenosis diagnosed?
A: Your doctor can use several tests, starting with an evaluation of your heart through a stethoscope. An echocardiogram, which uses ultrasound waves to produce video images, provides more definitive evidence. Only a hospital with a TAVR program, such as Hartford Hospital, can evaluate you for both TAVR and open heart surgery. Before a TAVR procedure, your doctor also might use cardiac catheterization to check your heart arteries (coronary, abdominal and pelvic) for blockages. A CT scan also can determine if your arteries can accommodate a new valve delivered via a catheter. We also evaluate your lung function and assess narrowing or plaque buildup in your carotid arteries.

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Q: What is the difference between TAVR and open heart surgery?
A: Conventional open heart surgery to replace the aortic valve usually requires an incision across the sternum (breast bone), a heart-lung machine that takes over for the patient's heart during the procedure and the removal of the diseased aortic valve. This procedure is done under general anesthesia. In a TAVR procedure, an interventional cardiologist works with a cardiothoracic surgeon, guiding a new collapsible valve through an incision (usually in the leg) as the patient's heart beats. The new valve is placed within the diseased aortic valve. When it is expanded, it pushes the old valve leaflets out of the way and assumes responsibility for regulating blood flow. More than 90 percent of patients treated at the Heart & Vascular Institute since October 2015 received their new heart valve through Conscious Sedation or MAC (Monitored Anesthesia Care). They did not require general anesthesia for their procedure. This helps facilitate a faster recovery.

Q: How long does a TAVR procedure take?
A: The time required will depend on your health and the approach used by your doctors: transfemoral, subclavian or transcarotid. The procedure usually lasts 1.5 hours. The average open heart surgery lasts about four hours.

Q: How long is recovery from TAVR?
A: TAVR patients spend about three days in the hospital. Recovery from a TAVR procedure is typically about a week, compared with three months for a surgical-valve replacement.

Q: How long will the new heart valve last?
A: Because of the many variables in assessing a valve's lifespan, your Heart Team will usually instruct you to follow up with your clinical cardiologist regularly to assure the valve is functioning properly. We use echocardiograms to monitor the valve.

Symptoms of **Aortic Stenosis**

Aortic stenosis, in many patients, remains a mystery until the amount of blood flowing through the aortic valve is greatly reduced by the valve's hardened flaps. Others, in fact, might notice a change in your health first, such as signs of fatigue or reduced physical activities.

Here are other common symptoms of aortic stenosis:

- Chest pain: Angina, or tightening of the chest. During physical activity, pain can radiate to the neck, jaw or arm
- Breathing difficulties, especially during exercise
- Palpitations
- Fainting
- Easily fatigued
- Heart murmur

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