

Severe Aortic Stenosis and Transcatheter Aortic Valve Replacement (TAVR)

FREQUENTLY ASKED QUESTIONS

What is the aortic valve and aortic stenosis?

When the heart pumps, blood exits the heart and is pumped into a large blood vessel (called the aorta). The aortic valve acts as a one-way gate allowing blood to exit the heart to go into the aorta and then to the rest of the body. Aortic stenosis refers to the narrowing of this valve, restricting the valve's ability to open and allow normal blood flow. When this valve has narrowed to a certain extent, it is referred to as severe aortic stenosis.

What is severe aortic stenosis?

Severe aortic stenosis is a narrowing of your aortic valve opening that does not allow normal blood flow.

What causes aortic stenosis?

In elderly patients, aortic stenosis is often caused by the build-up of calcium (mineral deposits) on the aortic valve's leaflets. This build-up of calcium on the leaflets impairs the aortic valve's ability to fully open and close.

What are the symptoms of aortic stenosis?

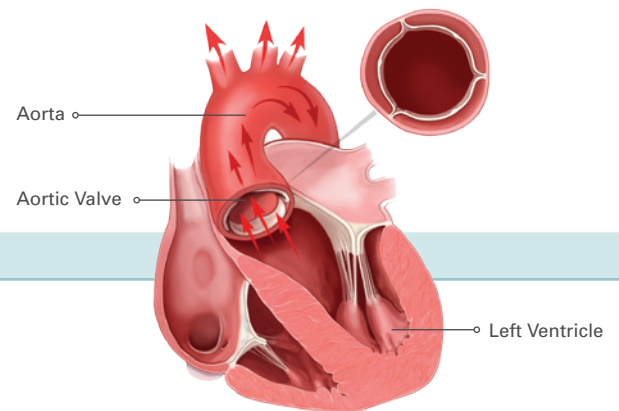
When the valve's leaflets don't fully open, your heart must work harder to push blood through the narrowed aortic valve to your body. As a result, the narrowed valve allows less oxygen-rich blood to flow from the lungs to the brain and rest of the body which may cause symptoms like severe shortness of breath and extreme fatigue.

How is aortic stenosis diagnosed?

An echocardiogram (ultrasound of the heart) is the primary imaging test used to diagnose severe aortic stenosis.

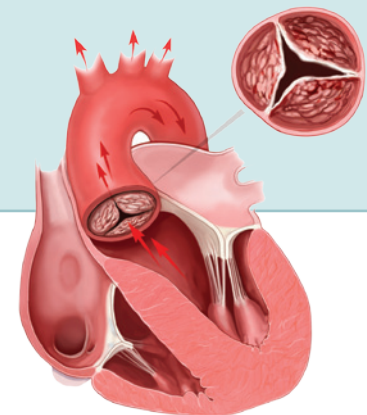
What is the risk of having severe aortic stenosis?

Eventually, your heart will get weaker, increasing your risk of heart failure. Severe aortic stenosis is a very serious problem. Without aortic valve replacement, 50 percent of patients will not survive more than an average of 2 years after they start having symptoms.



Healthy Aortic Valve

The leaflets of a healthy aortic heart valve open wide to allow oxygenated blood to flow unobstructed through the valve into the aorta where it flows out to the rest of the body.



Stenotic Aortic Valve

The leaflets of a stenotic or calcified aortic heart valve are unable to open wide, obstructing blood flow from the left ventricle into the aorta. The narrowed valve allows less oxygenated blood to flow through and as a result, less oxygen-rich blood is pumped out to the body which may cause symptoms like severe shortness of breath.

What is the treatment for severe aortic stenosis?

Currently, there is no medicine to treat aortic stenosis. Aortic valve replacement is the treatment for severe symptomatic aortic stenosis. This is usually done through open-heart surgery.

What if I'm not a candidate for open heart surgery?

If you have factors such as age, history of heart disease, frailty or other health issues, you may not be a candidate for open-heart surgery. However, a new therapy called Transcatheter Aortic Valve Replacement (TAVR) may be an option.

What is TAVR?

TAVR is a procedure that allows Heart Teams to replace a diseased aortic heart valve without open-heart surgery. This procedure enables the placement of a balloon-expandable heart valve into the body with a tube-based delivery system (catheter), which allows the valve to be inserted through a small cut in the thigh into an artery.

How can I find out if I'm eligible for TAVR?

If a cardiac surgeon determines you are too sick for open heart surgery and if medicine is not helping you feel better, TAVR might be an alternative. A Heart Team will conduct a comprehensive evaluation to determine whether this procedure is an appropriate therapeutic option. In certain cases, TAVR may not be an option because of co-existing medical conditions or disease processes that would prevent you from experiencing the expected treatment benefit or because the risks outweigh the benefits. For those who are candidates for TAVR, this therapy may provide relief from the often debilitating symptoms associated with severe symptomatic native aortic valve stenosis.

What are the risks of TAVR?

TAVR is a significant procedure involving general anesthesia, and placement of the valve is associated with specific contraindications as well as serious adverse effects, including risks of death, stroke, damage to the artery used for insertion of the valve, major bleeding, and other life-threatening and serious events. In addition, the longevity of this valve has not yet been determined since this is a new procedure.

For more information about TAVR, visit PennMedicine.org/TAVR or call 800.789.PENN (7366).

How long will I be in the hospital with TAVR?

The surgery is performed under general anesthesia and the procedure usually takes 3 to 4 hours. The average hospital stay is 4 to 7 days.

What happens after TAVR?

While in the hospital after TAVR, the following examinations will be completed:

- » Physical exam
- » Chest X-ray
- » Blood tests
- » Telemetry (monitoring of the heart's rhythm)

You will remain in ICU until your doctor feels you can be transferred to a regular hospital room, where you will continue to be monitored. A physical therapist will evaluate you and help you start moving as soon as possible. The average ICU time is 1 day and the average entire hospital stay for the procedure is 4 to 7 days.

You may be given blood-thinning medicine for 6 months and aspirin for the rest of your life, unless otherwise specified by your doctor. Regular check-ups by your doctor are very important.

What is Penn Medicine's experience with TAVR?

This TAVR procedure was approved by the FDA in November of 2011. Penn Medicine was one of the first sites in the country to participate in trials to use and test the valve in 2007. Over the next four years, Penn became a national leader in this procedure and developed techniques to minimize complications. Penn physicians have first-hand knowledge and more experience with the valve procedure than others who have just started doing the surgery since its FDA approval.



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