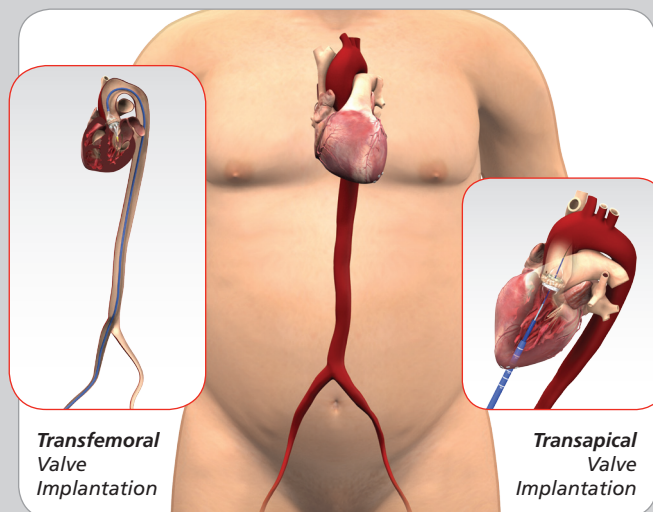


TRANSCATHETER AORTIC VALVE IMPLANTATION

Valve delivery via catheter and balloon inflation



Transcatheter aortic valve implantation, or TAVI, enables replacement of the aortic valve without opening the chest. This less invasive procedure is now available for patients considered to be at high-risk for open-heart surgery. In the TAVI procedure, the valve is squeezed down onto a balloon, inserted into the body via a catheter (a long flexible tube) and tracked to the heart for implantation. This can be done without opening the chest or using the heart-lung pump. The catheter may be inserted through the femoral artery (in the groin) or through a small incision in the chest over the heart. When the valve is positioned inside the faulty aortic valve, the balloon is inflated and the valve is precisely positioned.

Benefits of TAVI include a shorter procedure, less pain and a shorter stay in the hospital. Because it is non-invasive, recovery time is significantly shorter than after open-heart surgery – about 2 to 4 weeks instead of 6 to 8 weeks. As with surgical heart valve replacement, TAVI provides both short and long-term relief of symptoms, normal aortic valve function and improvement in your overall life expectancy and functioning.

Potential risks of valve replacement

vary significantly from person to person depending on age, overall health and other factors. Your doctor will discuss the risks in detail before you consent to the procedure. Your doctor will further evaluate your condition and determine if you should be referred to a heart team. His analysis will include a comprehensive physical examination plus evaluating the results of a number of blood tests and imaging studies which may include an ECG, an echocardiogram, a coronary angiogram and/or other tests. It is important to note, however, that untreated severe aortic stenosis poses a high risk of progressive symptoms or death.

Now you can make an informed decision

about your proposed treatment. Discuss it with your family and ask your doctor any questions that you may still have. Remember that TAVI and surgical valve replacement are viable options developed for people just like you.

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A patient's guide to aortic stenosis

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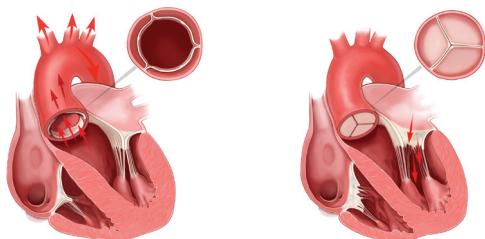
Your doctor has reason to believe that you have aortic valve stenosis

Here are some facts that can help you understand this condition, the importance of treating it, and why aortic valve replacement may be right for you.

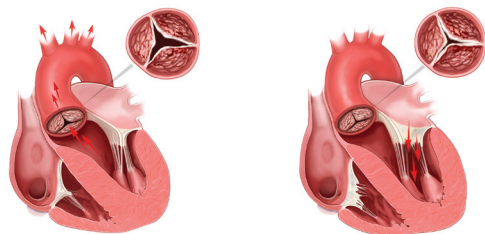
YOUR HEART

Your heart pumps blood through your body, collects it back, pumps it to the lungs to add oxygen and starts all over again. The heart has four chambers and four valves that open and close to control the flow of blood in and out of the heart.

Heart valves operate like one-way gates. They open to allow blood flow through your heart and out to your body. They close to stop blood from flowing back into the heart after it has been expelled. The valves permit blood to flow in only one direction, or pathway, through your heart.



A healthy aortic valve opens wide to allow proper blood flow and closes tightly to stop blood flow



A stenotic aortic valve is unable to open wide, obstructing blood flow and may fail to close properly

AORTIC VALVE STENOSIS

The aortic valve is positioned at the top of the left ventricle and leads to the aorta, the major large blood vessel that circulates oxygenated blood to your body. The valve has flaps (called cusps or leaflets) that are forced open when the left ventricle contracts, allowing blood to flow into the aorta. The leaflets then close to prevent the blood from leaking back into the ventricle.

Aortic valve stenosis occurs when calcium deposits on the valve cause the leaflets to become stiff. As the condition progresses, the valve opening narrows, obstructing blood flow and forcing the heart to pump harder.

Symptoms of severe aortic stenosis include:

- Chest pain or tightness (angina)
- Feeling faint or fainting upon exertion
- Shortness of breath upon exertion
- Reduced exercise capacity

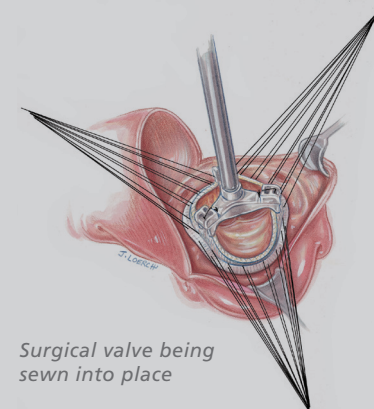
Remember, however, that heart valve disease often occurs with no outward symptoms and may go undetected.

Untreated severe aortic stenosis often leads to heart failure, with symptoms of fatigue, shortness of breath, swollen ankles and feet and possible sudden death.

Treatment for severe symptomatic aortic stenosis is essential to prolong your life. There are no medications to reverse the stenosis. Aortic valve replacement is the standard treatment for severe aortic stenosis. Without treatment, a large percentage of the people with severe aortic stenosis who are experiencing symptoms will die within 1-2 years.

Replacement of the aortic valve is typically done in a surgical procedure and depending on your condition and your doctor's assessment, a transcatheter valve replacement may be selected.

SURGICAL VALVE REPLACEMENT



Surgical valve being sewn into place

Surgical aortic valve replacement, or SAVR, is done through an open-heart procedure; the chest is opened up so the surgeon can access the heart and the patient is placed on cardiopulmonary bypass.

During surgical valve replacement, the surgeon removes the narrowed valve and replaces it with either a mechanical valve (metal) or a biological valve (constructed of animal or human tissue). Different valve types have different benefits and risks. You and your doctor will choose a valve best suited to you based on your individual lifestyle, age and medical condition.

Benefits of SAVR Each year, more than 250,000 heart valve surgeries take place across the world. Surgical valve replacement has been performed for many years and has consistently produced excellent results in lengthening patients' lives and improving their quality of life.