

## Aortic Stenosis: Facts about a Heart Valve Disease

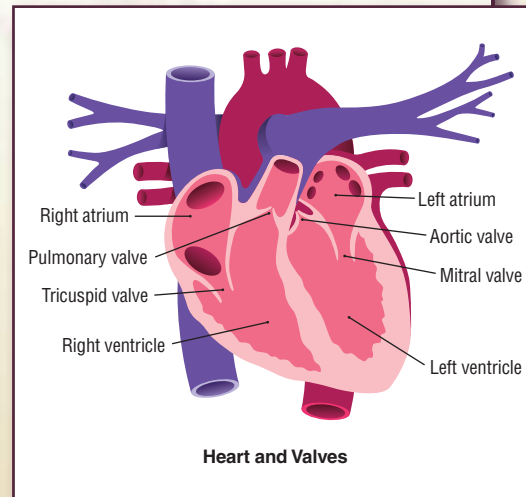
**Aortic stenosis is a type of heart disease where the main outlet for blood to be pumped to the body—the aortic valve—becomes narrowed over time.**

It is more common with age and if left untreated, can lead to significantly decreased quality of life, heart failure, and even death. Fortunately, aortic stenosis (AS) can usually be treated with surgery in patients of all ages. If you have been diagnosed with AS, or think you may be experiencing its symptoms, talk with your health care professional about the disease and whether or not surgery is right for you.

This brochure provides important information on the causes and symptoms of aortic stenosis (AS), how it's diagnosed, and the best treatment options.

### How Does the Heart Work?

The heart is a powerful organ that is responsible for pumping blood throughout the body. Its major parts include the four chambers—the right ventricle, left ventricle, right atrium, and left atrium. These chambers work together to pump blood to the lungs to receive oxygen, and then out to the body to deliver it. They also pump the blood back to the lungs to get rid of carbon dioxide waste, receive more oxygen, and start the process over again.



Between each chamber is a valve, which is a thin leaflet of tissue that keeps blood moving in the correct direction. These valves prevent blood leakage—backwards movement between heartbeats—by only opening one-way and sealing as soon as blood passes through.

### What is Aortic Stenosis?

Aortic stenosis (AS) is a heart valve disease that involves the stenosis (abnormal narrowing) of the aortic valve. This narrowing keeps the valve from opening all the way and reduces blood flow—straining the heart. As the narrowing gets worse, the heart works harder to pump and over time, heart problems develop and can cause heart failure.

#### Commonly Used Terms

Some health care professionals may use different words to describe aortic stenosis. This can be very confusing but it may help to know some of the other names and descriptions they may use:

- Aortic valve stenosis
- Narrowing of the aorta or aortic valve
- Closing of the aorta
- Stenosis of the aorta or aortic valve
- Aorta that isn't working properly
- Sticky or stiff valve
- Calcified valve
- Diseased valve

**AS FACT**

As it works harder to pump blood through a narrowed valve, damage and problems can develop in other parts of the heart.



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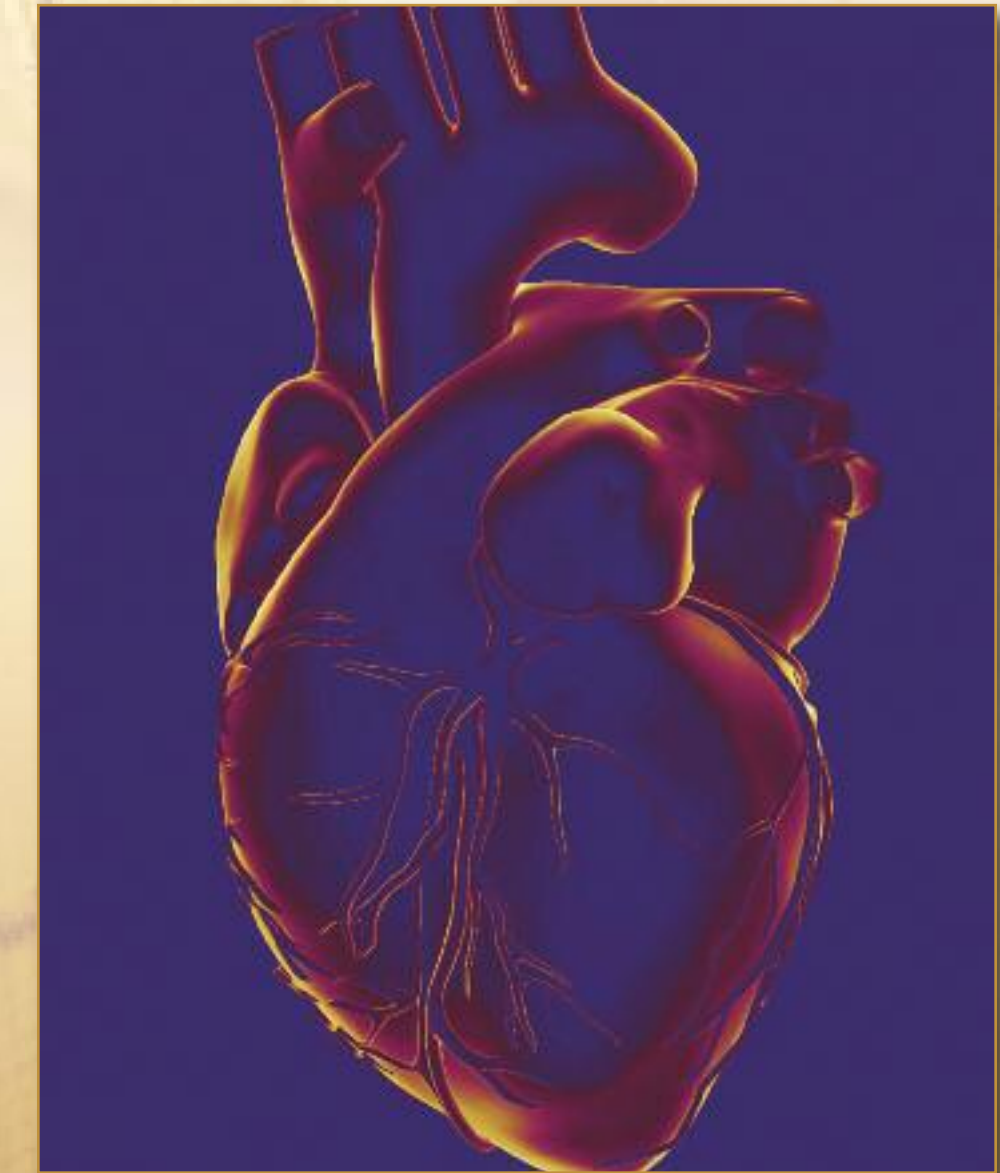
The private, not-for-profit **Alliance for Aging Research** is the nation's leading citizen advocacy organization for improving the health and independence of Americans as they age.

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Visit [www.agingresearch.org](http://www.agingresearch.org) and listen to interviews with a cardiologist, AS patient, and other experts. You will also find additional resources about AS and other heart diseases.

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## How Does Someone Get Aortic Stenosis?

### **Causes & Risk factors:**

- Age—risk increases with age
- Rheumatic fever—very rare in the U.S. today
- Bicuspid valve—occurs in 1-2% of the population
- Other congenital abnormalities
- Traditional vascular disease risk factors such as high blood pressure or high cholesterol

### **Congenital Abnormalities**

AS can be caused by a heart defect a person is born with—a congenital abnormality. Although rare, some people are born with a narrow aortic valve that causes AS symptoms and complications early in life. Additionally, around 1-2% of the population are born with an aortic valve with two leaflets of tissue (bicuspid) instead of the normal three (tricuspid). This normally causes narrowing and leakage sometime in adulthood.

### **Calcific Aortic Stenosis**

By far the most common cause of AS is the gradual build-up of calcium on the valve—calcific aortic stenosis—which occurs most often in people over age 60. Calcium is important for our bodies; however, if it collects it can harden and cause stiffening of blood vessels, arteries, and valves. As we age, our valves break down from wear-and-tear and make it easier for calcium to build-up. This can cause scarring, thickening, and narrowing of the valves and heart. Researchers are also finding that certain other risk factors for vascular disease such as elevated blood pressure and cholesterol may also play a role in the development of AS so take care of your heart health.

### **Rheumatic Fever**

Although very rare in the U.S. today, rheumatic fever—a complication of untreated strep throat—can cause scar tissue to form on the aortic valve and make calcium build-up more likely.

#### **AS FACT**

While wear-and-tear of the aortic valve still plays a role in developing AS, researchers are finding that lifestyle factors like diet and smoking may also put you at risk.

## What are the Symptoms?

### **Symptoms can include:**

- Pain, tightness, or discomfort in the chest
- Fainting or feeling faint
- Dizziness
- Weakness
- Fatigue
- Shortness of breath
- Rapid or irregular heartbeat
- Numbness or tingling sensations
- Lightheadedness
- Inability to exercise
- Swollen abdomen or ankles and feet

*Many of these symptoms will occur during activity but may also occur while at rest as the disease progresses.*

Symptoms and heart problems from AS are related to the amount of narrowing and become more noticeable and severe as the disease progresses. Patients with mild AS may not notice any symptoms.

Oftentimes, the first sign of AS is an abnormal heart sound—or heart murmur—that can be detected by your health care professional. Some people with severe AS do not experience symptoms but are at increased risk of sudden death, making it especially important for patients with known AS to be closely monitored.

Keep in mind that not all older patients will have common symptoms of AS. They may also incorrectly dismiss some—like fatigue—as a normal part of aging. If you think you are experiencing any of the above symptoms, be sure to contact your health care professional right away.

#### **AS FACT**

Shortness of breath, excessive fatigue, and fainting are not a normal part of aging. Talk to your health care professional if these symptoms keep you from performing common daily activities.

## How is it Diagnosed?



Health care professionals may first become “suspicious” of AS when their patient complains of symptoms such as fatigue and shortness of breath. Or they may hear the distinct sound of a heart murmur with their stethoscope. Keep in mind that your health care professional may not look or listen specifically for AS, so if you think you may have symptoms, be sure to speak up!

Your health care professional may conduct further testing or refer you to a cardiologist if he/she suspects AS. The tests will help determine if you do have AS, and if so, the severity of the disease. Also, don’t be afraid

to get a second opinion about your diagnosis and treatment options.

### **The most common tests include:**

- Listening to your heart for a murmur
- Taking your pulse
- Doing an echocardiogram—provides images of the heart
- Doing an electrocardiogram (EKG)—measures the heart’s electrical patterns
- Performing cardiac catheterization—helps determine severity
- Performing tests during exercise—can induce symptoms

#### **AS FACT**

Speak up if you think you are experiencing symptoms of AS. Your health care professional may not specifically look or listen for symptoms.

## How is it Treated?

### **Monitoring**

Most AS patients without symptoms will not need immediate surgery but should be monitored regularly. Once symptoms develop, surgery should be done as soon as possible. If left untreated, AS can lead to decreased quality of life, heart attack, heart failure, and even death—once symptoms start the average life expectancy is between 6 months and 3 years.

### **Medicine**

There are some drugs that can make the symptoms of AS less severe but provide only temporary relief. There are NO drugs that keep the disease from getting worse or undo the damage that has already been done. For severe AS patients, the drugs won’t delay the significant decline in quality of life or reduce the risk of sudden death.

### **AVR Surgery**

The only way to eliminate AS is to replace the valve. Aortic valve replacement (AVR) surgery is the most effective treatment for symptomatic patients of all ages. It can reduce or get rid of symptoms almost immediately, increase independence, improve survival, and significantly impact quality of life. The risk of complications and death are quite low and while they do rise slightly with age, **age alone is not a reason to avoid the surgery**. Unless other serious diseases or conditions could complicate the surgery, almost all symptomatic patients are good candidates.

Defective valves can be replaced with mechanical (man-made) or bioprosthetic (tissue from animals or humans) valves—both have risks and benefits. There are less invasive surgeries than AVR that may be a good option for some; however, many are still experimental and may not be widely available. Percutaneous AVR is expected to become more widely available within the next couple of years and could be a good option for those who are not candidates for traditional AVR. Talk to your health care professional about which option is right for you.

#### **AS FACT**

AVR surgery provides an almost immediate increase in quality of life and for most people the benefits far outweigh the risks.