Aortic Valve Stenosis (AVS)

What is it?

Aortic valve stenosis (AS) is a common heart valve defect**.** There are four valves in the heart that include the mitral valve, pulmonary valve, tricuspid valve, and aortic valve. Each valve contains cusps or flaps that open and close one time during every heartbeat. Normally, the aortic valve is fully open to allow blood to flow from the left ventricle into the main artery (aorta). The most common type of AVS is called **bicuspid aortic valve (BAV),** which is a congenital heart defect. **Congenital** means present at birth. The aortic valve does not form properly in infants born with BAV. It develops two cusps rather than three cusps. When this occurs, the heart must work much harder to pump blood into the aorta. Over time, the left ventricle may increase in size or thicken. Constant strain can cause the heart muscle to weaken, leading to heart failure or other complications.

Symptoms of AVS may include: abnormal heart sound (heart murmur), chest pain, dizziness, shortness of breath, fatigue, palpitation, and swollen ankles or feet.

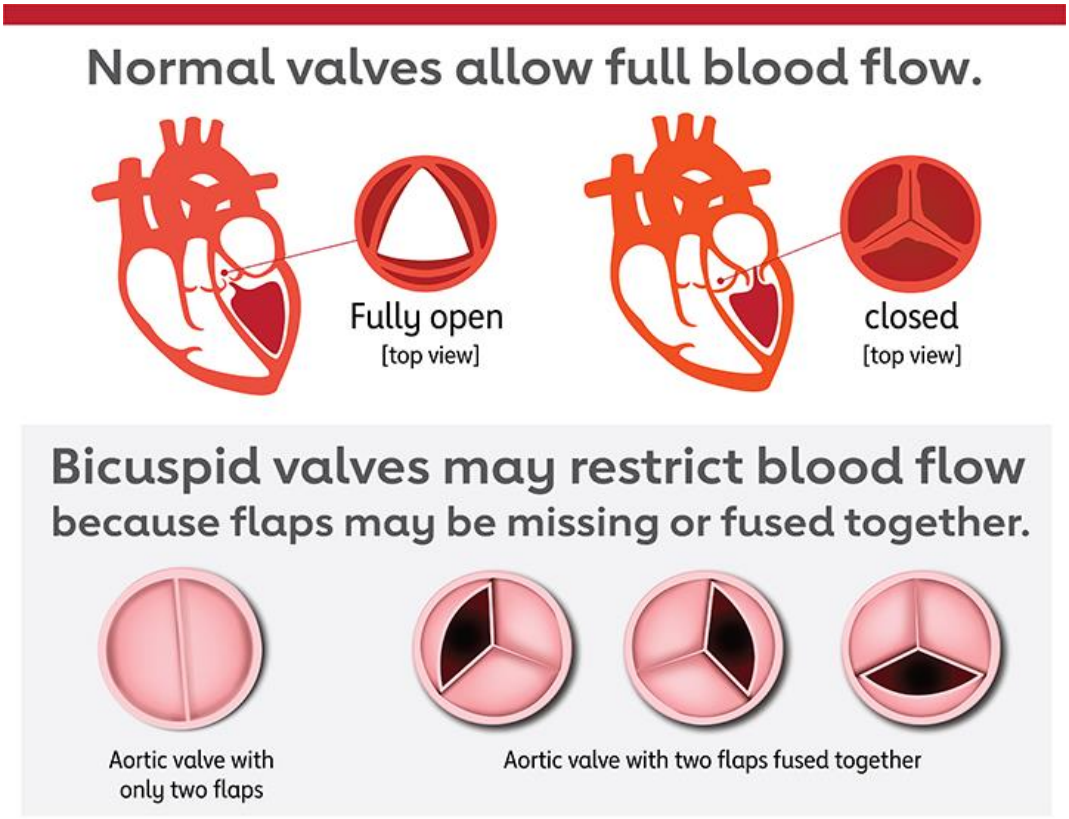

Image courtesy of the American Heart Association

BDPR Indiana Birth Defects and Problems Registry

Indiana Department of Health

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How common is it?

It is estimated that approximately 2.5% of people in the United States have valvular heart disease. This is much more common among older adults. Between 1% and 2% of people in the United States are born with BAV.

What causes it?

There are several causes of aortic valve stenosis. Some infants are born with a bicuspid aortic valve (**congenital heart defect**) and may not experience any symptoms until adulthood. **Calcium buildup can be caused by calcium deposits on the valve and can result in problems at an older age. In addition, rheumatic fever, a complication of a past strep throat infection, can scar tissue formation on the aortic valve. This can cause narrowing of the aortic valve opening.**

How is it diagnosed?

Aortic valve stenosis may be diagnosed during pregnancy or after birth. Screening tests during pregnancy can check for birth defects. After birth, aortic valve stenosis can be found if a murmur is heard. If AVS is suspected, a **cardiologist** (a doctor specializing in heart conditions) will confirm the diagnosis. The cardiologist may perform an echocardiogram, a special test to look at the heart, to diagnose AVS.

How is it treated?

Treatment of AVS can vary. Once the pressure in the left ventricle is elevated, treatment is indicated regardless of symptoms. Cardiac catheterization by balloon valvotomy is a procedure that can relieve most obstructions by stretching the opening of the valve. In some cases, surgery is needed to replace the aortic valve.

For more information:

American Heart Association
https://www.heart.org/en/health-topics/congenital-heart-defects/about-congenital-heart-defects/aortic-valve-stenosis-avs

Centers for Disease Control and Prevention
https://www.cdc.gov/heartdisease/valvular_disease.htm

Mayo Clinic
https://www.mayoclinic.org/diseases-conditions/aortic-stenosis/symptoms-causes/syc-20353139

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