

• Cardiac MRI scan

This is a scan of the heart using a magnet to generate moving video images of the heart. A needle will be inserted into your vein in the arm prior to the test. You lie down in a tunnel for the scan which will take around 30-40 minutes. The scanner is noisy so you will wear ear muffs to protect your ears. The scan may not be suitable for those who are claustrophobic.

What are the treatment options available?

Most people with bicuspid aortic valve will not need any treatment and will just be kept under regular surveillance.

In some people the valve will become narrowed or leaky. If this is the case, provided you have no symptoms, you will remain under surveillance but may be seen more frequently.

If the valve becomes severely narrowed or leaky, then you may be referred to a heart surgeon for a heart valve replacement.

If you have an aneurysm (stretching of the aorta), this usually will only require surveillance. Occasionally blood pressure tablets are also recommended. Rarely, the aorta becomes severely stretched and if this is the case then you will be referred to a heart surgeon for consideration of replacement of the aorta.

Is it hereditary?

There is a small risk (around 1 in 10 to 20) that your children and siblings may also have a bicuspid aortic valve (or related heart abnormalities). In some cases, a single one off screening echocardiogram (echo or cardiac ultrasound) of your family members is recommended. If this is the case your healthcare professional will discuss this with you at your clinic appointment.

Lifestyle

As with any type of heart disease, it is important that you follow a healthy diet and keep your weight within a normal range. If you smoke it is advisable that you stop. Your GP can guide you to support available to help you stop smoking. Most patients with bicuspid aortic valve will be encouraged to take regular gentle exercise but you should check this with your healthcare professional. If you have an aneurysm then you should avoid heavy lifting. If you are planning to get pregnant, you should discuss this with your healthcare professional first and let them know immediately if you become pregnant.

Bicuspid aortic valves are more prone to developing infection (known as endocarditis) than normal aortic valves. Infection usually develops from the mouth or the skin; there are simple steps you can take to reduce this risk.

Teeth

It is important to take good care of your teeth by brushing your teeth twice a day and visiting your dentist for regular check ups (at least once per year). If you have toothache or an abscess it is important that you get treated for this quickly. Make sure you tell your dentist you have a heart condition.

Skin

Keep your skin clean by washing regularly. Wash any cuts and grazes and keep them clean until they heal and see your GP if your skin becomes red or inflamed. Please speak to your GP/healthcare professional before having any cosmetic procedures (e.g. tattoos, body piercing, fillers etc) that involve breaking the skin.

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Manchester University
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PATIENT INFORMATION LEAFLET

Bicuspid Aortic Valve



MANCHESTER HEART
VALVE TEAM

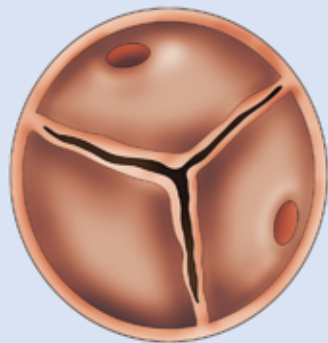
What is the aortic valve?

The aortic valve is a structure in the heart that allows one way flow of blood out of the left ventricle (the main pumping chamber of the heart) into the aorta (main blood vessel leaving the heart). When the heart muscle pumps, the aortic valve opens allowing blood to exit the heart. When the heart muscle relaxes, the valve closes preventing backflow of blood into the heart during this phase, functioning as a 'one way' heart valve.

What is a bicuspid aortic valve?

In most people the aortic valve has three leaflets (tricuspid or trileaflet valve). About 1 in 50 people are born with an aortic valve made of two leaflets which is called a bicuspid aortic valve. This is due to abnormal development of the valve whilst growing in the womb (known as a congenital abnormality). The condition is more common in men than women.

Normal 'trileaflet' aortic valve



'Bicuspid' aortic valve



The picture on the left shows a normal 'trileaflet' aortic valve with three leaflets. The picture on the right shows a 'bicuspid' aortic valve. The top two leaflets are fused meaning that the valve has two leaflets.

How is bicuspid aortic valve diagnosed?

Bicuspid aortic valve is diagnosed following an echocardiogram (cardiac ultrasound). Most people who are diagnosed with bicuspid aortic valve find out they have the condition by chance, when they have an echocardiogram for other reasons. In some cases, the doctor may have heard a heart murmur.

What does it mean if I have a bicuspid aortic valve?

Most people with bicuspid aortic valve will not experience any symptoms (see below) and will be simply kept under surveillance.

Bicuspid aortic valves are more prone to early degeneration (wear and tear) than trileaflet valves. If the valve degenerates it can develop aortic stenosis (become narrowed) or develop aortic regurgitation (become leaky). If the valve is leaky or narrowed, the doctor will hear an abnormal sound when they listen to your heart, known as a heart murmur.

Occasionally, people with bicuspid aortic valve will also have coarctation (narrowing) or aneurysm (stretch) of the aorta.

Important symptoms to be aware of:

- Breathlessness
- Chest pain
- Blackouts
- Dizziness
- Ankle swelling

You should report these symptoms to your healthcare professional.

What tests will I need?

Most people with bicuspid aortic valve will have an ECG and echocardiogram. Other tests outlined below may also be performed.

• Electrocardiogram (ECG)

Stickers are placed on the chest and the electrical activity of the heart is recorded.



• Echocardiogram (Echo or cardiac ultrasound)

During the test an ultrasound probe is placed on the chest and moving pictures of the heart are produced. The test takes around 30 minutes.