



HEART VALVE DISEASE: FACT SHEET

Heart Valve Disease

Heart valve disease is a condition caused by either wear or disease of the heart valve(s), affecting the flow of blood through the heart.¹ When diseased or defective, heart valves may not open or close properly and can interfere with the flow of blood. The most common valve problems involve the mitral and aortic valves, which are located on the left side of the heart.¹

The primary types of heart valve disease are:

- **Valve Stenosis:** As a result of certain medical conditions or anatomical abnormalities, a valve can be exceptionally narrow (therefore having a “stenosis”) which can limit the blood flow through the valve.¹ This may result in a “back-up” of blood behind the valve as if behind a dam, causing the heart to pump inefficiently.
- **Valve Regurgitation:** When a valve’s leaflets fail to close completely, the valve itself can become “leaky,” allowing blood to backwash down through the valve (called “regurgitation”).¹ In addition, the valve may not ever completely move the volume of blood to the next appropriate chamber.

Beyond the two primary types of heart valve disease, there is an additional common diagnosis:

- **Mitral Valve Prolapse:** This is a commonly diagnosed form of valve regurgitation. Mitral valve prolapse is estimated to affect as many as 1 in 20 people. In serious cases, the mitral valve can become weakened or stretched, ballooning out and sometimes causing a backflow of blood. Despite its frequency, it usually causes no symptoms, as the amount of blood that leaks back is often slight.¹

Impact of Heart Valve Disease

In the UK, approximately 1 million individuals over 65 years of age are thought to be affected by heart valve disease.² Epidemiological studies have shown that more than 13%³ of over 75s suffer from some form of heart valve disease and between 2-7% of over 65s⁴ suffer with severe aortic stenosis; the most common form of heart valve disease in developed countries.⁵ The UK’s ageing population⁶ means that the number of people with heart valve disease is set to increase.

Causes and Symptoms of Heart Valve Disease

Aortic valve stenosis is most often due to age-related degeneration or hardening (calcification) of the aortic valve, leading to progressive narrowing (stenosis) or leakage - changes which compromise valve function and impair normal blood flow through the heart.¹

Mitral stenosis occurs when there is obstruction to flow through the mitral valve separating the left atrium and left ventricle of the heart and is generally caused by rheumatic heart disease.⁷ The condition is twice as common in women as in men.⁸

Symptoms of aortic valve stenosis ⁵	Symptoms of mitral valve disease ⁹
<p>Aortic stenosis can be classified as asymptomatic, i.e., may not be visible or put down to the natural ageing process. However, when symptoms do occur, they include:</p> <ul style="list-style-type: none"> • Fatigue • Shortness of breath • Light-headedness • Fainting and difficulty exercising 	<p>Symptoms generally start to display themselves when patients are in their 40s and 50s. They include:</p> <ul style="list-style-type: none"> • Fatigue • Shortness of breath • Cough

Heart Valve Disorder Diagnosis

Heart valve disease and disorders are almost always detected during a medical visit. A heart “murmur” or “click-murmur” heard through a physician’s stethoscope is usually the first indication of a valve disorder. There are several tests that aid in detecting the origin of heart valve problems and determining the best treatment approach that include:

- **Electrocardiography:** This simple test records the heart’s electrical activity via electrodes attached to the skin. It is the most direct way to assess the rhythm of the heart. The electrical impulses are recorded in the form of waves on graph paper.
- **Chest X-Ray:** This reveals general information about the size and shape of the heart. If a heart becomes enlarged due to valve disease, it will assume different shapes depending on the particular valve disorder.
- **Echocardiography and Doppler Echocardiography:** This painless, non-invasive test is used routinely to diagnose valve abnormalities. Ultrasound equipment takes images of the heart while it’s beating, providing a view of blood flow through the heart and identifying areas of regurgitation, if present.
- **Radionuclide Ventriculography:** A nuclear scanning method, this test injects a small amount of radiation into the body via the bloodstream. The radiation is monitored while the patient is at rest and during exercise, providing information about the heart muscle and blood flow, as well as the size and shape of the heart’s pumping chambers (ventriculi).
- **Cardiac Catheterisation:** Catheters are inserted into a vein and an artery to help determine the function and condition of the heart, valves and coronary arteries. It is the only test that can provide an accurate “road map” of the coronary arteries.

- **Transoesophageal Echo:** Passing a probe down the oesophagus provides an image of the heart from behind. This test may be used both prior to and during surgery to accurately show valve regurgitation.

However, there are many challenges faced at all stages of care around the diagnosis and management of patients with heart valve disease. Some of the challenges include:

- **Infrequency of presentation:** It is a challenge for GPs in primary care to identify patients for treatment and refer them. This is due to the relative infrequency with which GPs see heart valve disease cases, meaning this is not necessarily at the forefront of their diagnostic skills set.
- **Difficult symptoms to identify:** Some patients are asymptomatic – but many patients, who say they have no symptoms, do have symptoms on objective testing – it is difficult for physicians in both primary and secondary care to detect and correctly diagnose heart valve disease.
- **Infrequent use of stethoscopes:** A recent survey suggests that stethoscopes are infrequently used by physicians in primary care to listen to a patient’s heart when they present with potential symptoms of heart valve disease – the one key action that could potentially detect heart valve disease.¹⁰
- **Late diagnosis:** Patients are not being diagnosed early enough – they are ‘slipping through the net’ at all stages of the treatment pathway; in primary care and within secondary care due to lack of education, awareness and incorrect referrals.

Heart Valve Disease Treatment Approaches

Current clinical guidelines on the management of aortic stenosis make a clear distinction between symptomatic and asymptomatic conditions – however what they identify is the need to treat severe aortic stenosis. Without treatment, patients with severe disease face reduced longevity, and impairments in physical and social functioning and emotional well-being that contribute to poor quality of life.^{11,12,13,14} There are a number of potential treatments:

- **Valve Repair:** In some cases, the aortic valve can be repaired during surgery and the patient’s tissue maintained.¹
- **Aortic Valve Replacement (AVR):** More often, surgery to replace the aortic valve is required.¹ In recent years, minimally invasive techniques have been introduced which bring potential benefits for patients.
- **Transcatheter Aortic Valve Replacement (TAVI):** TAVI offers a less invasive treatment option than surgical replacement and provides a way of implanting valves in patients who previously would have been considered too high-risk for surgical valve replacement. With TAVI, a tissue valve is inserted through a catheter and implanted within the diseased aortic valve, guided by imaging.¹⁵

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