



Heart disease

The heart consists of four muscular chambers which pump blood when stimulated by electrical impulses. The right side of the heart pumps blood around the lungs and the left hand side of the heart pumps blood around the rest of the body. The chambers of the heart are separated by valves which help to keep the blood flowing in the right direction.

What causes heart disease?

Heart disease does not have a single cause. Broadly speaking, it can affect the heart valves, the heart muscle (myocardium), the electrical conduction within the heart or the pericardium (a strong sac that surrounds and supports the heart). Some problems with the heart can be present from birth (congenital defects) but more commonly, disease will develop in later life due to age or previous damage to the heart.

Congenital heart disease is much less common than acquired heart disease and will tend to be seen in young animals, as it is caused by a defect has been present since birth. The symptoms are not always seen straight away at birth, as it can take time for subsequent damage to develop enough to cause symptoms.

Acquired heart disease in dogs

Mitral valve disease – this is the most common cause of heart disease in smaller breeds of dog. The Cavalier King Charles Spaniel is probably the most affected breed, but it can occur in all breeds. With this condition, the mitral valve, on the left side of the heart degenerated and becomes leaky. This allows some blood to flow in backwards direction within the heart and results in a heart murmur. Over time the valve will leak more and more and this will reduce the pumping ability of the heart resulting in a backup of blood in the lungs and fluid build up in the lungs as well as a poor blood supply to the body. In time the right sided chambers of the heart can also be affected.

Dilated cardiomyopathy – This is the most common cause of heart disease in larger dogs. Dobermanns, Great Danes and Irish Wolfhounds are the most commonly affected breeds, but it can affect any breed. This type of heart disease affects the heart muscle and causes it to become weak and stretched. Over time the heart will get very large but with thin walls, which are unable to contract properly to pump blood. This condition can become quite severe without the presence of a murmur, and research now suggests it is worth testing at risk breeds for signs of the disease before serious symptoms appear; this can be done either via a blood test or ultrasound scan.

Acquired heart disease in cats

Hypertrophic cardiomyopathy – Some breeds such as Maine Coons and Ragdolls are particularly prone to heart disease, but all cats can develop the condition. The heart wall becomes thickened without the heart increasing much in size. Consequently, the chambers of the heart become very small and can pump only a small volume of blood. The heart also struggles to relax properly between beats. Most cases of this condition are either genetic or of unknown cause, but occasionally can be secondary to conditions such as hyperthyroidism, anaemia or high blood pressure. Cats with heart disease are at high risk of developing thromboembolisms (clots) which can travel around the body and become lodged in blood vessels - often those supplying the back legs or lungs.

Signs of heart disease in dogs:

It is important to recognise that heart disease is not the same scenario as congestive heart failure. The latter is the very end stage of heart disease, and in many circumstances, with medical management it can take many years for this to develop.



Dogs can have heart disease for years without showing any outward signs other than potentially a heart murmur. Eventually however, the heart will struggle to pump effectively resulting in inadequate oxygenation of the body and fluid build-up in the lungs and other areas of the body. This is the start of a condition known as congestive heart failure.

- Increased respiratory rate
- Reduction in walk length/less playful
- Coughing
- Poor appetite
- Weakness
- Weight loss
- Drinking more and urinating more
- Lethargy/fatigue
- Fainting episodes/collapse (syncope)
- Swollen belly/pot bellied

Signs of severe, life threatening congestive heart failure:

- Struggling to breath
- Panting/breathing quickly
- Foaming at the mouth
- Collapse
- Blue/dark red/purple gums and tongue.

Signs of heart disease in cats:

- Possibly no signs at all – Many cats show no outward signs until suddenly, severe signs can develop. These can include:
 - Sudden death
 - Loss of use of back legs
 - Breathing difficulties
- Vomiting
- Depressed or conversely very agitated
- Poor appetite
- Weight loss
- Swollen belly/Pot-bellied
- weakness
- Your vet may find an abnormal heart rhythm (gallop rhythm), abnormal heart rate or a murmur

Diagnosis

- Auscultation - listening for murmurs/abnormal heart rhythm with a stethoscope.
- Echocardiography (heart ultrasound) – assess valve function, contraction, and heart shape/size
- Chest xrays – assess heart size and signs for fluid build-up in lungs
- Electrocardiogram (ECG) – assess electrical impulses within the heart
- ProBNP Blood test (dogs) – identifies markers for damaged heart muscle.
- Blood and urine tests – indirectly assess the impact of heart disease on the other organs as well as identify conditions that can cause heart damage.

Treatment for dogs:

Treatment for heart disease is usually medical with medications. These may include:

- Pimobendan
- Diuretics (“water tablets”)



- Furosemide
- spironolactone
- ACE inhibitor
- Other medications

Your vet may also recommend careful control of exercise

Treatment for cats:

- Beta-blockers – To slow the heart rate and reduce the oxygen demand on the heart
- Calcium-channel blocker (diltiazem) – To reduce the heart rate and the strength of contractions to allow the muscle to relax between contractions
- Anti-clotting drugs – to reduce the risk of thromboembolisms
- If heart failure develops, diuretics (water tablets) and ACE inhibitors may be prescribed to reduce fluid build-up in the body and around the lungs