Fact sheet

Heart disease

Heart disease is increasingly common in cats probably because their average life expectancy has increased due to improved veterinary care. Some heart defects may be present from birth (congenital heart defects) but only show symptoms as the cat gets older. Other diseases develop later in life as a result of the effects of ageing or damage to the heart. The most common heart disease which develops later in life is hypertrophic cardiomyopathy.

How does the heart work?

The cat's heart, like that of humans, is a muscular pump with four separate chambers. The right side of the heart sends blood to the lungs where it picks up oxygen. The left side receives blood from the lungs and pumps it around the rest of the body. The chambers are separated from one another by a series of valves that ensure that blood can only flow in the right direction around the heart.

What causes heart disease?

Heart disease may affect any area of the heart:

Heart valves

The valves within the heart may fail to develop properly, eg mitral dysplasia, or may degenerate as a result of ageing (endocardiosis). Specific infections can affect the heart valves (endocarditis). Abnormal valves allow leakage of blood between heart chambers even when they are closed. When valves leak abnormal blood flow can be detected when listening to the heart (a murmur) and on ultrasound.

Heart muscle

In general terms the heart muscle may be either too thick or too thin. If the muscle is too thin the heart is unable to contract properly and if the muscle is thick the heart cannot relax and therefore does not fill with blood between contractions. In either case the heart is unable to pump sufficient blood out.

Electrical conduction

Abnormal electrical conduction affects the rate and rhythm of the heart. Electrical abnormalities can be caused by disease outside the heart. If the heart beats too quickly there is not enough time for it to fill properly between beats and so it pumps less blood with each beat. If the heart beats too slowly there are not enough pulses to supply enough blood to the body. Chaotic rhythms occur where contractions of different parts of the heart are not synchronised and so pulse volume is reduced.

Pericardium

The pericardium is a strong sac that surrounds and supports the heart. Changes to the pericardium usually result in constriction of the heart, preventing it from filling properly between contractions. The right side of the heart (because it has thinner walls) is usually more easily compressed than the left. Diseases of the pericardium are very rare in cats.

Kittens can be born with heart defects (congenital heart problems) because the heart does not develop normally. The most common problems are leaky valves and holes inside the heart that allow blood to flow in abnormal directions. Heart disease in older cats is usually caused by changes in the heart muscle.

What are the common heart diseases?

The most common forms of heart disease in adult cats are those affecting the muscle of the heart itself (cardiomyopathy):

Hypertrophic cardiomyopathy

The most common form of cardiomyopathy is hypertrophic cardiomyopathy, in which the heart muscle becomes abnormally thick which prevents the heart from working properly and reduces the amount of blood flowing through it. Hypertrophic cardiomyopathy can be caused by an increased workload for the heart. If the heart has to do more work to pump blood out then the muscles in the heart get bigger (just like a weight-lifter's muscles get bigger when they work-out a gym). However, hypertrophic cardiomyopathy can also occur in otherwise healthy animals and the exact cause is often unknown. It is more common in certain breeds, eg Persians, which suggest that it may be inherited in some cases.

Heart disease

Dilated cardiomyopathy (DCM)

This disease is caused by the stretching of the heart muscle walls so that the heart swells (like a balloon filled with water). The contractions of the heart muscle become very weak so blood is not pumped around the body effectively. This is often seen in cats whose diet contains insufficient amounts of a chemical called taurine. However, DCM is much less common now because pet food manufacturers add extra taurine to their cat foods. In humans, heart disease is usually the result of damage to the heart muscle caused by blood clots (myocardial infarction) - this causes the signs of a heart attack. However, cats do not get this kind of heart disease.

What are the signs of heart disease?

The truth is - you may not know your cat has heart problems until it is too late! Cats are usually good at concealing ill health and there may be no evidence of any problems until the condition is very advanced. Many of the effects of heart disease are similar to those changes that occur naturally as your cat gets older - poor appetite, low energy levels with reduced activity and longer rest periods. Your cat's tongue or gums may turn bluish red as a result of oxygen starvation. There are lots of signs that can be associated with heart disease. If the heart starts to fail fluid may build up in the lungs or in the chest making it difficult for your cat to breathe.

Sometimes the first sign of heart disease in cats are 'fainting fits' or seizures (fits). Panting, weight loss, restlessness, coughing, fainting and swelling of parts of the body because of water retention are signs of very severe heart disease and are not normally seen until the disease is advanced.

Heart disease can be associated with increased blood pressure (hypertension) that may cause blood vessels to burst. If the blood vessels in the eye are affected your cat may go blind.

If the heart is not working properly the blood may start to clot inside the heart fragments of clot can break off and escape into the circulation where they may cause a blockage in one of the blood vessels. If the clot blocks the vessel taking blood to the hind legs it may cause sudden paralysis. This condition is very painful and cats may be found lying outside, unable to walk and very distressed. These signs are frequently misinterpreted as being the result of a traffic accident. If your cat is found like this it needs emergency veterinary treatment.

How do vets diagnose heart disease?

A thorough examination of your cat will often be enough to tell your vet that your cat has heart disease. When listening with a stethoscope your vet might hear changes in the heart sounds (a 'heart murmur') or an abnormal heart rhythm. Your vet may be able to see other changes in your cat's appearance, which suggests that heart disease is present.

X-rays and ultrasound scans may also be used. X-rays will usually be needed to see if the heart is enlarged or abnormally shaped. Ultrasound scans allow measurements to be made of the heart muscle to see if it is too thick or has become stretched. Ultrasound can also let your vet see if the heart valves are working properly and if there are any holes in the heart. An electrocardiogram (ECG) records the electrical activity when the heart beats, and in cardiomyopathy the heart may have an abnormal or irregular beat which can be seen on the ECG.

Will my cat get better?

If your vet has identified a cause of the heart disease and this can be treated (such as removal of an over-active thyroid gland) the damage to the heart muscle might actually repair with time.

Unfortunately, it is unusual that the root cause can be treated so easily and in most cases long-term medication is needed to control the signs.

Sometimes your vet will recommend a special diet that may have low salt to reduce water retention. However some cats do not like these diets and will refuse to eat them. It is much more important that your cat eats than has any special food.

Can heart disease be treated?

If the heart disease is diagnosed early enough long-term medication and other measures can slow the

disease down but they will probably not stop it completely. It may help to change your cat's lifestyle to eliminate stress (although most cats lead pretty stress-free lives already).

Your vet will prescribe some drugs to improve the heartbeat and others to help get rid of the excessive fluid that can accumulate in your cat's chest and interfere with its breathing. Aspirin may also be prescribed (as in human heart disease patients) to stop the formation of blood clots. This drug can be dangerous in cats and the dose has to be carefully controlled. A single dose of aspirin may last as long as three days in your cat (not three hours as in people). NEVER give medication to your cat unless it has been prescribed by your vet.

How long will my cat live?

It is difficult to predict how long your cat will live if it has heart disease or how good its quality of life will be. A lot depends on how far the disease has progressed. On average it is likely that your cat will survive for about six months after diagnosis but the time may vary between a few weeks and several years.

If you want any other information on health issues concerning your cat please contact your local Veterinary Surgeon.