

# Heart Disease

## **About the Heart**

The heart is a very important organ of the body whose role is to pump blood, the vital nutrient our organs need, throughout the body.

To serve this function the heart is made up of 2 basic components

- The right side that serves to receive and store blood that has returned from the rest of the body and then pump it through the lungs to receive oxygen.
- The left side that serves to receive oxygenated blood from the lungs and then stores it briefly before having the harder role of pumping this blood throughout the whole body.

Each side of the heart has valves that ensures blood flows in one direction – that is forward rather than backwards.

## **What Causes Heart Disease?**

The most common cause of heart disease in our pets is due to valve problems. It is usually the left sided valve that wears out in many pets probably because of the extra work this side of the heart has to do. When the valve is damaged it results in some blood leaking backwards and the vet will usually hear this as a murmur. A murmur can be heard in some pets from birth due to developmental heart problems but more often it is seen as an aging change as our heart gets worn out with time. As time goes on, the leak may become more severe and more blood will leak backwards and this will make the murmur appear louder.

## **What is the effect of heart disease?**

The effect of the blood leaking backwards from the left side of the heart is that less blood can be pumped through the body and more blood will travel back into the lungs resulting in small amounts of fluid leaking into airway passages of the lung. This results in the common signs of heart disease

- tiredness and lagging on walks due to the body not receiving a good blood flow
- coughing, panting, shortness of breath (due to fluid build up in the lungs)

From the time a murmur develops to the time heart failure signs are present can be a few months to several years.

Less often the right side of the heart is effected. This will result in poor blood flow through the lungs and then the rest of the body but the blood will back log in the abdomen instead of the lungs. In these patients coughing may not be the main sign but instead a swollen abdomen due to fluid accumulating there.

Heart *failure* begins when the heart is not able to provide enough blood with adequate oxygen throughout the body. This causes the body's cells to become desperate and that triggers a series of responses to attempt to correct the problem. These responses involve conserving fluid to increase blood flow and constricting blood vessels to improve blood pressure. Eventually these changes make the heart work harder (ie pushing a higher volume of blood through narrower tubes) and heart failure progresses.

### **How is Heart Disease Diagnosed**

The first indication that heart disease is present relates to what signs your pet shows. These most commonly involve lethargy, breathing problems and coughing but can also include decreased appetite, collapsing, weight loss and pot bellied appearance.

Quite often when your vet listens to your pet's heart they will also hear that there are changes such as a murmur, increased heart rate or an erratic heart beat. If heart failure is present then a change in breathing sounds may also be heard with a stethoscope.

A chest x-ray is the best way that the vet can show that the heart is under pressure. It may show that the heart has enlarged to cope with the extra pressure and the lungs may show changes indicative of back pressure from the heart, with fluid accumulating in the lungs. X-rays are not only a good way of diagnosing heart disease but are also helpful in determining the severity of it.

If an erratic heart beat has been heard by the vet then an ECG maybe performed.

Heart ultrasound gives the best picture of the heart chamber sizes, heart muscle activity and the heart valves. Ultrasound can give us an idea of the cause of the heart disease as well as the best drugs for treatment.

### **What is the Treatment for Heart Disease**

The aim of treatment is to minimise the pressure working against the heart so that it can pump more effectively. This involves

- Adjusting exercise and diet
- Diuretics to reduce the fluid in the lungs and the fluid load that the heart has to pump around the body
- Enzyme inhibitors that block the body's negative responses to heart disease such as fluid retention and blood vessel constriction
- Drugs that assist the heart muscle to work more efficiently.
- In compromised patients oxygen is often required

Heart disease can sneak up on all of us, so ensuring your pets have regular health checks may allow us to pick up problems before you are even aware there is anything is going on.