



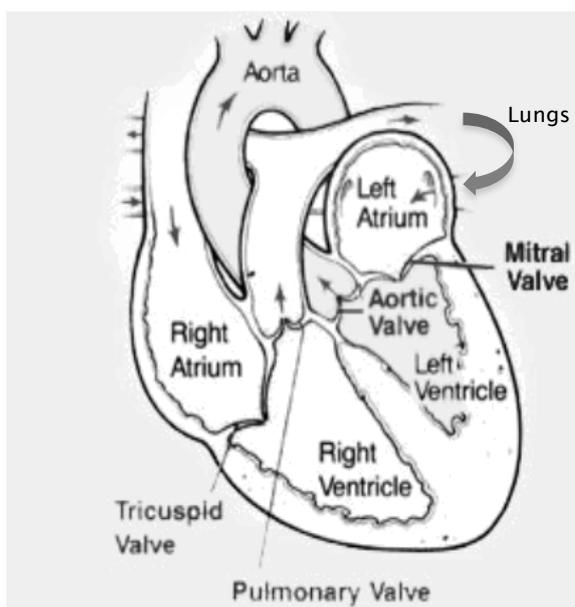
### What is myxomatous mitral valve disease?

Mitral valve disease is the commonest heart disease of adult dogs. It is a degenerative disease that affects the mitral valve located on the left side of the heart and also, to a lesser extent, the tricuspid valve situated on the right side of the heart. These valves open and close every time the heart beats – around 120,000 times each day in dogs – and therefore it is perhaps not surprising that as dogs reach middle age, these valves often show signs of ‘wear-and-tear’. This ‘wear-and-tear’ causes the valves to become thickened and, as a result, the valve no longer forms a tight seal each time the heart contracts. The leakage of blood back through the valve creates turbulent flow that we can detect as an audible heart murmur.

### Why does valve leakage cause problems?

The purpose of the heart valves is to keep blood flowing in one direction. A leaking mitral valve results in a reduction in heart output that may result in reduced ability to exercise. The flow back through the valve increases the pressure within the left atrium which, when transferred to the lung circulation, can result in fluid accumulation in the lungs (pulmonary oedema) causing breathlessness. Occasionally the tricuspid valve may be affected causing in fluid accumulation in the abdomen resulting in abdominal distension.

The heart adapts to the valve leakage by enlarging which, initially, is helpful but eventually can result in worsening of the valve leakage. This heart enlargement principally affects the left atrium and ventricle (the collecting chamber and pumping chamber respectively).



### What are the signs of mitral valve disease in dogs?

It is important to realise that many dogs will tolerate this condition and never show any associated signs or require medication. However, a proportion of dogs with this condition may show progressive disease and eventually exhibit signs of heart failure.

**Common signs of heart failure caused by mitral valve disease:** breathlessness, reduced ability to exercise, lethargy, loss of appetite

**Uncommon signs of heart failure caused by mitral valve disease:** fainting, distension of the abdomen, coughing

**Important differences to human heart disease:** Whilst humans with heart disease may experience chest pain, as far as we know, mitral valve disease in dogs is not a painful condition. Sudden death is rare in dogs with mitral valve disease. Additionally, blood clots are rare in dogs with heart disease so there is no need to use drugs such as aspirin.

### How do we diagnose and judge the severity ('stage') of mitral valve disease?

Ultrasound of the heart (echocardiography) is a safe and painless means of making a diagnosis without the need for anaesthesia or sedation. At our practice you can stay with your dog to reduce anxiety whilst the ultrasound is performed. All that is required is clipping of a patch of hair from either side of the chest to allow a clear image to be formed. This technique can also be used to take measurements of heart size to enable disease ‘staging’ – a measure of the disease severity.



## Owner information sheet: Mitral valve disease stage B2

### • What does stage B2 mean?

A clinical scale gives us a means of rapidly classifying dogs:

- Stage A dogs are breeds at high risk of heart disease
- Stage B dogs have mitral regurgitation but no associated symptoms and are sub-classified into stage B1 and B2:
  - Stage B1 dogs have normal heart size,
  - Stage B2 dogs have enlarged hearts (specifically the left atrium and left ventricle).
- Stage C dogs have symptoms of heart failure such as breathlessness but respond to standard treatment
- Stage D dogs are resistant to treatment and may

### How is stage B2 mitral valve disease treated?

A recent study showed that treatment of dogs with stage B2 mitral valve disease with a drug called pimobendan (which has the trade names Vetmedin or Cardisure) may postpone the onset of clinical signs of heart failure. Whilst the average increase in the duration of this asymptomatic period was around 15 months, there was a wide variation between individuals and therefore treatment during this asymptomatic phase does not guarantee a 15 month postponement of signs of heart failure in every individual but does make it more likely.

Surgical valve replacement and repair has been described in dogs but currently the risks associated with this procedure outweigh the benefits for the majority of dogs.

### How can we detect signs of heart failure?

Mitral valve disease is generally a slowly progressive condition. The rare exception to this is dogs who suffer rupture of the cords that hold the mitral valve closed who may experience sudden worsening of their heart disease.

A veterinary cardiologist asking careful questions and examining your dog gives important information about the possibility of heart failure. On the basis of this information we may advise further tests such as echocardiography and / or also chest x-rays.

### What can I do to reduce risk of my dog developing heart disease?

Heart disease in dogs is largely a genetic condition and therefore cannot be prevented.

We would recommend a normal proprietary canine diet. There is no evidence that raw diets or food supplements such as fish oil, hawthorn, turmeric, co-enzyme Q10, carnitine, taurine, etc will influence the progression of this condition.

Dogs should be encouraged to do a regular amount of exercise each day. Dogs who are willing can do off lead exercise and also vigorous exercise. Stressful events (such as fireworks) and / or an excitable temperament do not appear to affect disease progression. Dogs should be prevented from becoming overweight.

It is useful to get into the habit of monitoring the breathing rate and pattern of your dog whilst they are resting. In normal individuals it may be quite hard to see the chest moving, and the breathing rate is usually less than 15 breaths per minute. Persistent increases in resting breathing rate or effort may suggest disease progression and please call for advice if this occurs.

### What happens next?

We suggest a recheck in 1 month for repeat echocardiography to assess the effect of pimobendan therapy on heart size. Thereafter ultrasound of the heart will be repeated every 6 months to monitor disease progression.

### Key points

- Mitral valve disease is very common and many dogs can live normally for long periods with this condition.
- In dogs with stage B2 disease, treatment with pimobendan may postpone the onset of heart failure.