

## FELINE HYPERTROPHIC CARDIOMYOPATHY

Hypertrophic cardiomyopathy is a heart (cardio-) muscle disease (-myopathy) and is the most common form of heart disease in cats. The disease is characterised by thickened muscle in the heart walls, which is known as hypertrophy.

The hypertrophy is progressive, causing the walls of the heart to become stiff, reducing the amount of blood entering, and therefore leaving, the heart. This thickening can also cause a physical obstruction to blood flow out of the heart, and may involve the valves, causing distortion and leaking. These changes result in turbulent blood flow, causing a murmur which can be heard with a stethoscope.

The body compensates by raising heart rate and retaining water to increase circulating blood volume. This helps initially, but because the heart cannot stretch to accommodate the increased volume, pressure rises and the left atrium becomes enlarged. Pressure then rises in the blood vessels coming from the lungs, causing fluid to leak out, which is called pulmonary oedema and causes difficulty in breathing. The patient is now described as being in congestive heart failure.

In cats an enlarged left atrium carries an additional risk of developing a blood clot. This can then pass through the heart and lodge in one of the arteries going to the body. This usually occurs at the top of the back legs, causing a sudden painful hindlimb paralysis.

### Affected Animals

Pedigree cats such as Maine Coons, Ragdolls, Persians and British Shorthairs are most commonly affected, however the condition is also very common in "moggies" (domestic shorthair/ longhair cats). Cats of any age can develop this disease but it appears more common in younger males.

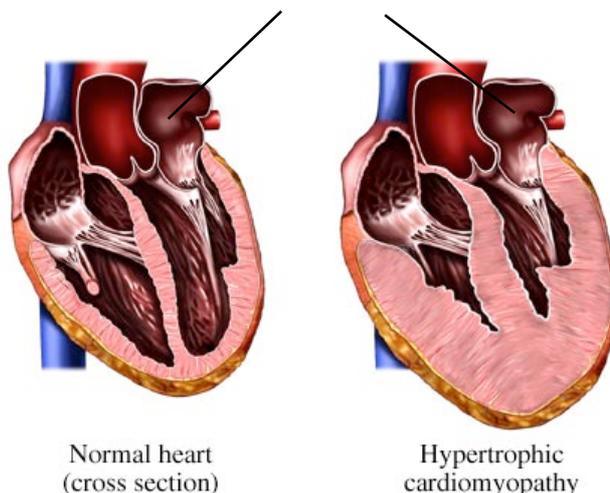
### Clinical Signs

- Lethargy, reduced willingness to exercise or tiring more quickly during playing.
- Reduced appetite +/- increased drinking or sudden weight loss.
- Increased breathing rate, or laboured breathing. Sustained open-mouthed breathing (panting) in cats is a sign of severe difficulty in breathing.
- Acute onset of paralysis of both hind legs, as a result of an arterial blood clot.

### Diagnosis

- **Echocardiography (cardiac ultrasound)** is the most useful diagnostic tool, allowing direct measurement of heart wall thickness and left atrial size. It requires a little hair to be clipped from the chest wall but is painless and non-invasive.

*Left Atrium - blood from the lungs enters the heart here*



- **Radiographs (“X-Rays”)** are used to evaluate the heart size within the chest, and look for evidence of fluid build up within the lungs.
- An **electrocardiogram (ECG)** may be performed if there is an arrhythmia (irregular heart rhythm), or **blood tests** may be used to assess thyroid function (which can worsen heart disease) or to measure specific markers of cardiac disease (proBNP or troponin I).
- **Blood pressure** is often monitored as it can be low in affected cats.

### Can cats be screened for HCM?

Yes, a scheme has been developed by the Veterinary Cardiovascular Society and Feline Advisory Bureau where cats can be tested by ultrasound examination. This must be carried out by an approved cardiologist and is recommended prior to breeding in pedigrees predisposed to the disease (for more details see [www.fabcats.org/hcm](http://www.fabcats.org/hcm)).

There is also a blood test available for Maine Coon and Ragdoll cats which can identify the most common genetic mutation which leads to HCM. A positive result means HCM is likely to develop in that animal, but this does not detect other causes and hence a negative result does NOT guarantee HCM will not develop in that animal.

### Treatment and ongoing care of affected cats

Unfortunately there are few studies in cats with HCM and hence there is no clear protocol for treatment. Therefore therapy must be tailored to the specific aspects of disease in each cat.

In patients without clinical signs of disease, treatment is only prescribed if we think this could delay the onset of heart failure. Monitoring for progression (usually by ultrasound scan every 6-12 months) is extremely important in these cases.

Few preparations are licensed for use in cats so we often need to prescribe human medications, or those licensed in dogs instead. Some more commonly used drugs include:

- **Diuretics** (frusemide, Moduret and Prilactone tablets) remove fluid build-up from the lungs and the abdomen when the heart is failing, and may cause increased drinking and urination.
- **Beta-blockers** (atenolol or Tenormin syrup) act by slowing the heart rate and reducing workload on the heart, promoting improved cardiac filling and more efficient pumping.
- **ACE Inhibitors** (Fortekor tablets) help by redistributing the blood within the circulation, easing the pressure and volume load on the heart.
- **Inodilators** - pimobendan (Vetmedin) is a drug which improves circulation as an ACE Inhibitor does, but also helps heart muscle contraction and relaxation.
- **Anti-coagulants** (aspirin and/or Plavix tablets) are prescribed if the cardiologist is concerned about the risk of developing blood clots.

### Monitoring at home

Please check your cat's breathing when resting (but not purring), the rate should ideally be <35 breaths per minute.

Any sustained panting/ breathing difficulty or sudden onset pain/ lameness should be reported to your local vet immediately.