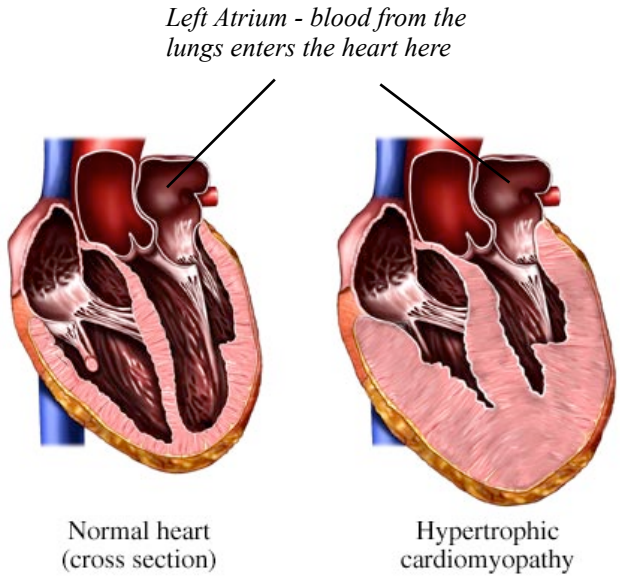
HYPERTROPHIC CARDIOMYOPATHY (HCM)

Hypertrophic cardiomyopathy, or HCM is a heart (cardio-) muscle disease (-myopathy) and is the most common form of heart disease is cats. The disease causes the heart muscle to become abnormally thickened, which is known as hypertrophy.

The walls of the heart become stiff, so the heart cannot fill so easily, which leads to **enlargement of the left atrium** (the top chamber of the heart on the left side). This carries a risk of a **blood clot** forming, which can be pumped out of the heart and lodge in the circulation.

A thickened heart muscle can cause **obstruction** to blood flow out of the heart, and the resulting turbulent blood flow causes a whooshing sound or **"murmur"** which we hear with a stethascope.

In some patients the disease worsens and fluid leaks out of the blood vessels into the lungs. This is called pulmonary oedema and causes difficulty in breathing. The patient is now in **congestive heart failure**.



Affected Cats are often pedigrees such as Maine Coons, Ragdolls, Birmans, Sphynx, Bengals and British Shorthairs. However the condition is also very common in "moggies" (domestic shorthair/ longhair cats). Cats of any age can develop this disease but it is most common in younger males.

Clinical signs are very variable, so HCM can be difficult to diagnose. Many cats do not show any symptoms at all in the early stages. Signs to watch out for can include:

- Lethargy, tiring more quickly or panting/crying or fainting during exercise or play.
- 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**.
- A sudden painful paralysis of one or both hind legs, due to an arterial blood clot. In humans this more commonly affects the brain and is known as a "stroke"

Diagnosis of HCM

- **Echocardiography (cardiac ultrasound scan)** is the gold standard test, allowing direct measurements of heart wall thickness and left atrial size, as well as assessing blood flow through the heart and risk of blood clots. It requires a little hair to be clipped from the chest wall but is painless and non-invasive. Occasionally sedation is needed in anxious cats.
- An **electrocardiogram (ECG)** may be performed if there is an arrhythmia (irregular heart rhythm) or severe thickening seen on the scan, since there can be a risk of myocardial infarction ("heart attack") with this disease.

- **Blood tests** may sometimes be used as an initial screening test (see below). If your cat has been diagnosed with HCM already we may advise additional blood tests to check thyroid and kidney function which may affect treatment.
- **Blood pressure** is often monitored, as high blood pressure in middle aged and older cats can make heart disease worse.
- **Radiographs ("X-Rays")** may sometimes be used to look for evidence of fluid build up within the lungs, or concurrent lung disease such as asthma.

Can cats be screened for HCM?

For pedigree cats predisposed to HCM, screening by ultrasound scan is recommended prior to breeding. This must be carried out by an approved cardiologist on the Veterinary Cardiovascular Society Doppler panel. For more details see https://www.vet-cardio.co.uk/heart-testing/

A screening blood test (**NT-proBNP SNAP test**) is a quick test which can be performed by your vet. It may be used initially for cats showing symptoms (i.e. breathless cats), or for close relations of affected cats.
A **negative result** means HCM is **unlikely,** so there may be no further heart tests recommended.
A **positive result** means HCM is **possible**, and an **ultrasound scan is needed** to be sure.

There is a genetic test available in the US for Maine Coon and Ragdoll cats, which can identify the most common genetic mutation causing HCM. We do not routinely recommend this test, as there are likely to be lots of other gene mutations involved (which we cannot yet test for). Hence at the moment the results do not help us to predict how likely it is your cat may develop HCM.

Treatment and ongoing care of affected cats

Unfortunately there is no medical treatment which has yet been proven to slow progression or improve the disease. A full ultrasound scan is vital to determine risks in each patient, and form a treatment plan.

In animals not yet showing symptoms, we focus on treatment to prevent complications such as blood clots or dangerous heart rhythms which may lead to "heart attacks". Monitoring for progression (by ultrasound scan every 6-12 months) is extremely important in these cases.

In cats with difficulty breathing, we prescribe diuretics such as furosemide to remove fluid build-up in the lungs, chest and abdomen. Sometimes the fluid must be physically drained to improve breathing quickly - this is usually an emergency.

We may recommend other cardiac drugs where there is a specific reason to do so. These are often not licensed in cats, and only available for dogs or humans. Hence a cardiologist is best placed to make these treatment decisions.

Monitoring at home

Please check your cat's breathing when resting (but not purring), as this can tell us how effective medications are, or whether there could be fluid in the lungs. The rate should ideally be <30-35 breaths per minute. An information sheet on how to do this is available at the owners area of our website.

Please let us know if your cat pants, crouches, cries out or faints after running around, as this could be a sign of chest pain (like angina).

Any sustained panting/ breathing difficulty or sudden limb pain/ lameness should be reported to your local vet **immediately** - this is a genuine emergency.