



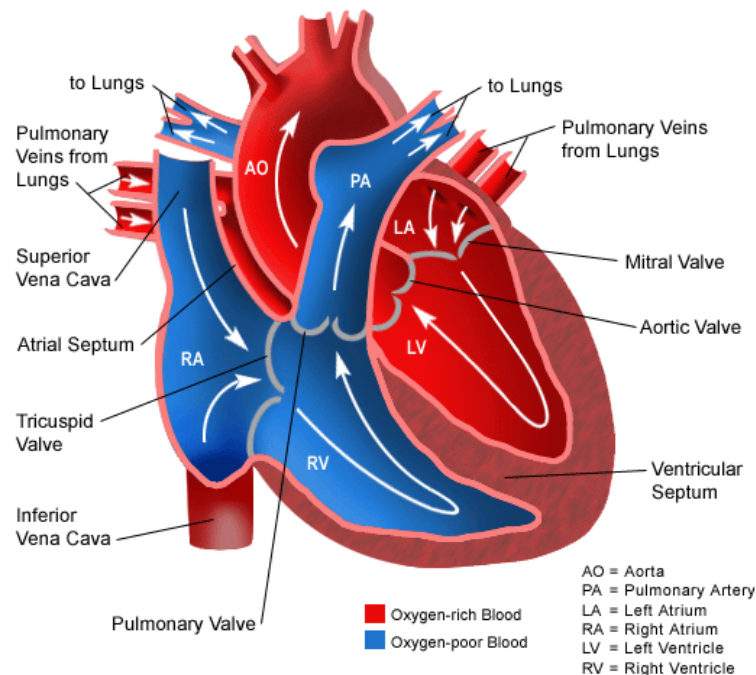
## Hypertrophic Cardiomyopathy (HCM)

### BRIEFLY, HOW DOES THE HEART WORK?

The heart has four chambers. The upper chambers are called atria. One chamber is called an atrium, and the lower chambers are called ventricles. In addition to the upper and lower chambers, the heart is also considered to have a right and left side.

Blood flows from the body into the right atrium. It is stored there briefly and then pumped into the right ventricle. The right ventricle pumps blood into the lungs, where it receives oxygen. It flows from the lungs into the left atrium; it is held here briefly before going into the left ventricle. The left ventricle contains the largest muscle of the heart so the blood can be pumped out to all parts of the body.

Movement of blood results from electrical impulses that are transmitted from the brain to the heart. The impulses not only direct the heart to beat but also to maintain a steady, regular rhythm.

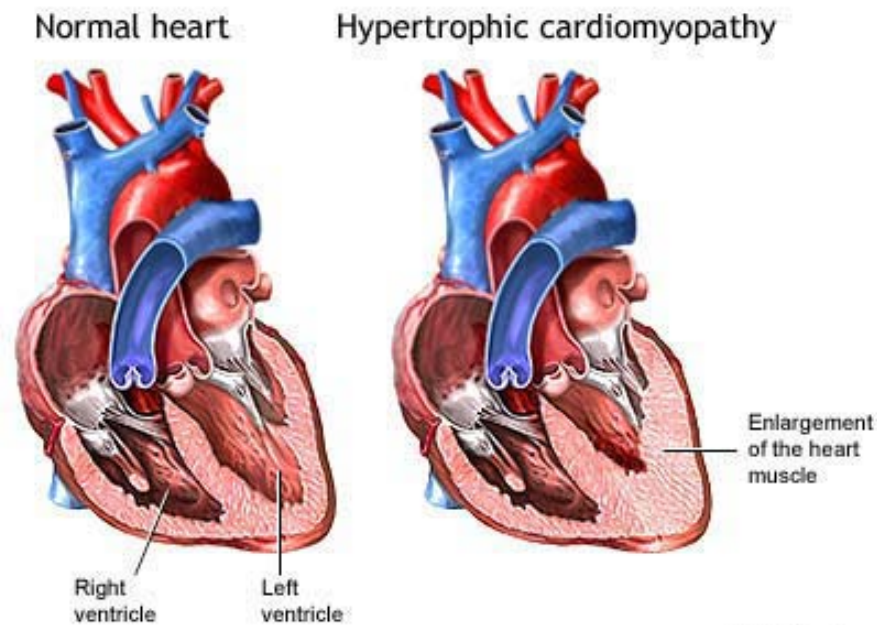




## WHAT IS HYPERTROPHIC CARDIOMYOPATHY?

Cardiomyopathy is a term used to describe diseases of the heart muscle. In cats, at least three classes of cardiomyopathy have been described, the most common of which is hypertrophic cardiomyopathy (HCM). It is a disease where the walls of the heart become abnormally thickened (hypertrophied).

As HCM develops and progresses, the structure and function of the heart is altered in several ways. The primary problem with HCM is the inability of the heart to relax and fill with blood. Ultimately, this can result in fluid accumulating on the lungs (pulmonary oedema) or in the chest cavity (pleural effusion).



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## **WHAT ARE THE CLINICAL SIGNS OF HYPERTROPHIC CARDIOMYOPATHY?**

Clinical signs are variable and often cats will not show any abnormalities until their condition is severe.

Clinical signs may include;

- Increased or laboured respiration (normal respiratory rate is less than 30 breaths per minute when sleeping in a cool place): Breathlessness and lethargy are the most frequently noticed signs of congestive heart failure and these result from a failure of the heart to efficiently pump blood. Blood backs up into the blood vessels of the lungs, resulting in fluid accumulation in or around them.
- Thromboembolic disease: Altered flow of blood in enlarged heart chambers predisposes to the formation of a blood clot within the chambers of the heart. If parts of the clot become dislodged they can travel in the bloodstream and become lodged in smaller vessels. The most common place for them to lodge is at the bottom of the aorta, obstructing blood supply to the back legs. This is usually very painful and the back legs become paralysed and cold to the touch. Although a minority of cats may recover completely with appropriate treatment, this is a potentially fatal complication of any cardiomyopathy. In some cats a partial recovery, which may take a long time, is seen.
- Decreased appetite
- Change in heart rate or rhythm
- Lethargy or weakness
- Heart murmur

## **HOW IS HYPERTROPHIC CARDIOMYOPATHY DIAGNOSED?**

The best way to diagnose hypertrophic cardiomyopathy is to perform an echocardiogram (heart ultrasound). This gives the most accurate determination of the size of each heart chamber and thickness of heart walls. Occasionally a chest xray and ECG (electrocardiogram) may be recommended. These give us the best look at the lungs and an assessment of the electrical activity of the heart.

The combination of all of these tests gives us our best evaluation of the animal's heart function, however if cost considerations prohibit us performing all of them, two or three will provide much valuable information.





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### **WHAT CAUSES HYPERTROPHIC CARDIOMYOPATHY?**

A genetic cause has been identified in some breeds of cat, however in older cats increase blood pressure and/or thyroid disease (hyperthyroidism) may cause similar changes. It is important that these are tested for to rule them out before a diagnosis of HCM is made.

### **HOW IS HYPERTROPHIC CARDIOMYOPATHY TREATED?**

There are several medications that can help to relieve clinical signs of hypertrophic cardiomyopathy. The cardiologist may prescribe diuretics (frusemide) to help reabsorb fluid from the lungs or other medications that may relax vessels such as benazepril.

Some patients will need to have fluid physically removed from the abdomen or chest cavity.

It is helpful if you keep a record of your cat's sleeping respiratory rate (see sleeping respiratory rate chart) so that your veterinarian can identify any changes in your cat's normal breathing pattern.

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