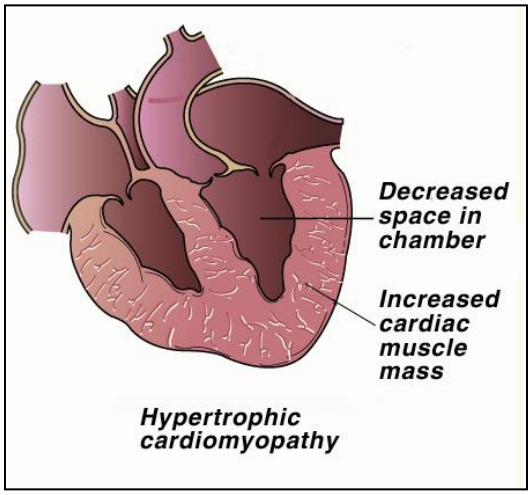
ProBNP Testing in Cats

Some types of heart disease are remarkably difficult to diagnose, especially in cats, yet heart disease is very common. 5 -15% of dogs and cats have heart disease. Some breeds of cat are particularly at risk.

HCM is the most common cause of unexpected death under anesthesia in cats.

In cats, the primary heart problem we encounter is hypertrophic cardiomyopathy, or HCM. In this disease, the heart muscle becomes abnormally thick and stiff. As the heart muscle thickens, the chamber inside the heart that holds the blood shrinks. The heart has to work harder and harder to pump a smaller and smaller amount of blood. This disease affects 1 in 6 cats to some degree.



HCM is the most common cause of unexpected death under anesthesia in cats. A heart that is functioning adequately under normal circumstances may fail under the stress of anesthesia or heavy exercise, which is why some affected pets die under anesthesia while they had no symptoms beforehand.

This is especially common for the genetic forms of disease we see in younger cats. Anesthesia in cats is actually more dangerous for young cats than old ones, as they are more likely to have more severe disease but no heart murmur to clue us in.

Screening for heart disease

ProBNP Testing costs about $50.

ECG screening and chest x-rays may be normal even with severe heart disease in cats, because the heart doesn't always show an abnormal rhythm or become enlarged with HCM. A thicker, stiffer heart can still have a normal size and shape on an x-ray. The ProBNP blood test makes screening for occult (hidden) heart disease easier.

Breeds of cat with higher risk for cardiomyopathy include:

- Abyssinian
- American short hair
- British short hair
- Cornish & Devon Rex
- Domestic short hair
- Domestic long hair
- Maine Coon
- Persian
- Ragdoll (a DNA test is available in this breed)
- Siamese

The ProBNP enzyme is released from heart muscle cells in response to wall stress. The cells are stretched or damaged and start leaking muscle enzymes. The more stressed or damaged the muscle the higher the levels will be.

When the ProBNP test is done at our reference laboratory, we get a number, and we can track

increases over time. The worse the disease, the higher the number.

When we do the test in-house, the cost is less and we get an answer right away, but we only get a positive or negative result. A positive in-house test should be confirmed by additional, more accurate testing. It's a red flag that would prompt us to cancel an anesthetic procedure while we investigate further.

It's so much better to find out there is a problem and manage it versus having your pet die under anesthesia from a problem you didn't even know it had!

What Are the Symptoms of HCM?

In the early stages of disease, the cat may not show any symptoms. This is referred to as compensated heart disease. The heart is not normal but there are no obvious signs of disease. Cats are good at masking illness, so owners often do not notice that their cat is tiring quickly or has a rapid heart rate. Often cats will alter their activity levels to cope with their disease, which makes it difficult to diagnose cardiomyopathy until it is quite advanced.

HCM has 2 forms in cats

1) Genetic, inherited HCM starts when a cat is young, and is often severe and fatal.

2) Acquired HCM, seen in older cats, may be secondary to valve disease or hyperthyroidism, and is usually milder.

HCM can be a deadly disease but it is treatable if we can find it. Heart failure progresses and begins with mild signs. Not all disease will progress to failure but most will worsen with time.

Symptoms to watch for include panting or open mouth breathing, tiring quickly and inactivity. Severe signs include sudden death, respiratory distress (gasping for air) and painful blood clots that may be fatal.

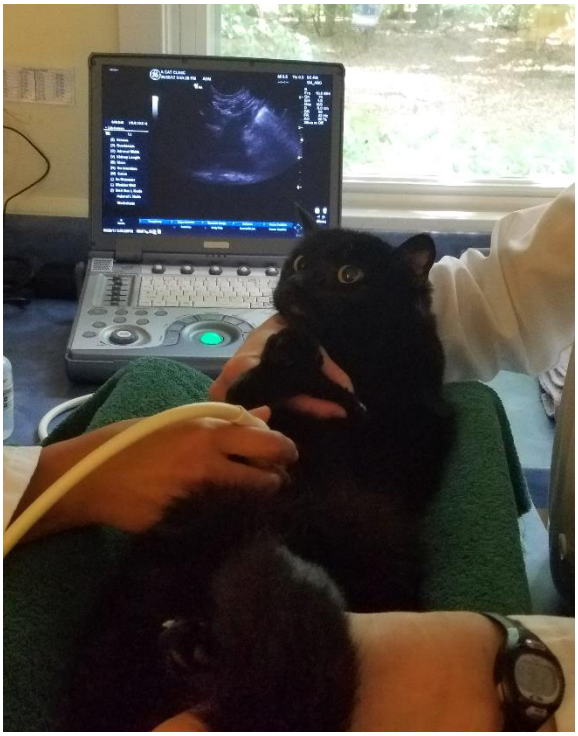
Many cats with HCM have heart murmurs that would indicate there is a problem, but these murmurs are often soft and difficult to hear. 1/3rd of affected cats don't have a murmur at all. Hearing a heart murmur will usually prompt us to recommend further heart testing.

Cats who have hyperthyroidism or high blood pressure from kidney disease are at higher risk for heart disease and can develop heart murmurs, with or without cardiomyopathy. Regular ProBNP testing is recommended for these cats.

What happens if a cat tests positive?

If a cat seems normal but the proBNP level is in the mildly high range we will wait 3 months and test it again. If anesthesia is needed more urgently we may recommend further testing sooner. If the level is high or we have other signs such as a heart murmur we will recommend an ECG (about $70), an echocardiogram (an ultrasound of the heart performed by an ultrasonographer, veterinary radiologist, internist or cardiologist, about $450) and possibly chest x-rays, to confirm whether heart disease exists.

If the echocardiogram shows heart muscle thickening, the specialist will recommend medications and tell us whether it is likely to be safe to perform anesthesia.



Medication and rechecks will be needed regularly afterwards. If the heart looks normal on an echo-cardiogram now, we will continue to monitor proBNP in the future and will recommend an echocardiogram again if it climbs significantly later on. Heart disease is progressive and can start very mild but become more serious later on.

What population of cats should be tested? We will usually recommend it be done with any wellness, pre-anesthetic or senior screen, especially for at-risk breeds. Early detection and treatment can prevent/slow disease progression and of course could save your cat's life. We are looking for subclinical disease prior to onset of signs so we can intervene with treatment and avoid disease complications.

In summary, ProBNP testing could save your cat's life. We highly recommend this test!