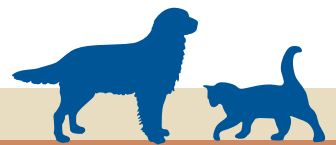


Get to the Heart of the Matter



Cardiopet[®] proBNP

An easy-to-use blood test to help assess heart disease in dogs and cats.



Cardiopet® proBNP

helps you know which hearts you need to worry about



Early heart disease detection

Cardiopet® proBNP delivers quantitative results with interpretative criteria that can help you determine the severity of the cardiac disease – ultimately improving patient care through **earlier detection and treatment.**



Accuracy you can rely on

Count on the Cardiopet® proBNP test to deliver accurate results with canine- and feline-specific Nt-proBNP to **increase your confidence** in diagnosing heart disease and heart failure.



Easy to use

Easily requested as part of a biochemistry/ FBC profile, Cardiopet® proBNP is **minimally invasive**, requiring only a simple blood sample.




Affordable and convenient

This simple blood test can **support your decision** to recommend potentially expensive follow-up diagnostics like echocardiography.



Cardiopet® proBNP



“This revolutionary diagnostic marker provides information that was previously available to veterinarians only through a series of complicated and expensive diagnostics. Cardiopet® proBNP significantly enhances our ability to quickly and accurately assess the cardiovascular status of our patients.”

Steve Ettinger, DVM, DACVIM

 **Cardiopet® proBNP**

IDEXX Reference Laboratories

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Heart diseases in dogs and cats



The risk of heart disease in dogs increases dramatically with age. Up to 15 % of dogs have heart disease, and this rate increases to over 60 % in aged dogs.^{1,2}

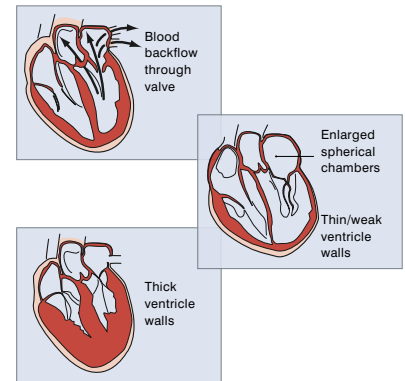
Diagnosing cardiac disease in cats can be especially difficult. Cats present with few, if any, clinical signs and thoracic auscultation is normal in 30 % of cats with heart disease.³

The three most commonly diagnosed cardiac diseases

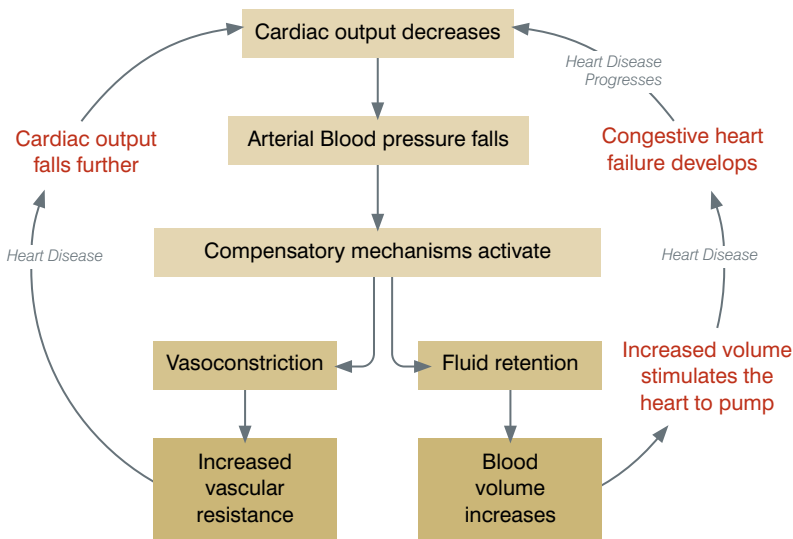
Mitral valve disease A leaky valve and eventually a dilated or stretched left ventricle affect the ability of the heart to pump efficiently.

Dilated cardiomyopathy The muscles of the heart become weak and dilated, causing the heart to pump inefficiently.

Hypertrophic cardiomyopathy (cats) The heart muscle becomes thickened, limiting blood flow from the left atria to the ventricle.

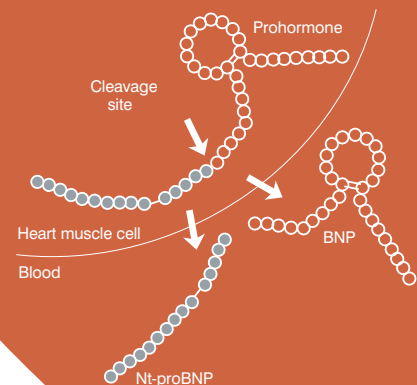


Regardless of the underlying cause that triggers heart disease, the patient ultimately cascades into a downward spiral leading to congestive heart failure. Early detection and therapy may break the cycle and improve outcomes.



How Cardiopet® proBNP works

As the chambers of the heart are stretched, they release BNP. First discovered in 1988 and routinely used as a cardiac marker in humans, BNP is a peptide stored as a "pro-hormone." As heart disease progresses, the chambers become more stretched and BNP is released in greater quantities. Cardiopet® proBNP measures Nt-proBNP, allowing you to quantitatively track the progression of the disease and make judgments about the condition of the heart.



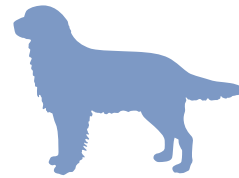
1 Edmonton MH. School of Veterinary Medicine Offers Cardiology Services. *LSU Today*. 2002;18(40).

2 Rush JE. Chronic Valvular Heart Disease in Dogs. Proceedings from: 26th Annual Waltham Diets/OSU Symposium for the Treatment of Small Animal Cardiology; October 19–20, 2002.

3 Cats with confirmed hypertrophic cardiomyopathy as part of a clinical study conducted at the University of Illinois;1998–1999.

Cardiopet[®] proBNP and the Dog

Clinical Guidance and Interpretative Criteria



The **Cardiopet[®] proBNP test** measures Nt-proBNP, which is released from the heart muscle in proportion to the severity of heart stretch/stress. Use this test for **murmur dogs with mild to more severe clinical signs**, such as coughing, dyspnoea or tachypnoea to determine if those signs are cardiac in origin.

- Murmur and clinical signs, e.g.:
 - Cough, dyspnoea, cyanosis (to differentiate respiratory disease from heart disease)
 - Exercise intolerance, lethargy
- Breeds predisposed to heart disease and showing a murmur as well as clinical signs



Interpretative Criteria

<900 pmol/l	The likelihood that clinical signs (e.g. respiratory and/or exercise intolerance) are due to heart failure is low. Consider other differentials to determine the cause of clinical signs.
900 – 1800 pmol/l	Results in this range do not allow differentiation between clinical signs due to heart failure versus those from other causes. To help differentiate, consider other diagnostics.
>1800 pmol/l	The likelihood that clinical signs (e.g. respiratory and/or exercise intolerance) are due to heart failure is high. Further cardiac workup or cardiac consultation recommended.

Therapeutic decisions should be based on results of a cardiac workup.

Nt-proBNP concentrations may decrease with cardiac medication. Arrhythmias and the presence of pulmonary hypertension may result in higher Nt-proBNP concentrations. Azotaemic dogs may have increased Nt-proBNP concentrations.



Cardiopet® proBNP and the Cat

Clinical Guidance and Interpretative Criteria



Studies¹ show that 1 in 6 cats can have hypertrophic cardiomyopathy, yet these patients may show no signs at all. **The Cardiopet® proBNP test** can be used to **screen all cats** to assure early detection.

- Screen all cats (symptomatic or non-symptomatic), e.g.:
 - Preanaesthetic work-up
 - As part of a wellness screen
 - All breeds predisposed to heart disease
- In case of clinical symptoms, e.g.:
 - Murmur, gallop, arrhythmia
 - Cough, dyspnoea, cyanosis
 - Exercise intolerance, lethargy
 - Hind limb paresis/paralysis



Interpretative Criteria

<100 pmol/l	Clinically significant cardiomyopathy is highly unlikely.
100–270 pmol/l	Clinically significant cardiomyopathy is unlikely, but early disease may be present. Consider repeat Nt-proBNP in 3–6 months or an echocardiogram. If the cat has clinical signs, it is unlikely that these signs are associated with cardiomyopathy.
>270 pmol/l	Clinically significant cardiomyopathy is highly likely. Further cardiac workup including an echocardiogram is recommended.

Therapeutic decisions should be based on results of a cardiac workup.

Nt-proBNP concentrations may decrease with cardiac medication. Arrhythmias may result in higher Nt-proBNP concentrations. Cats with severe respiratory disease can have increased Nt-proBNP due to pulmonary hypertension which creates myocardial stress. Severely azotaemic cats may have increased Nt-proBNP concentrations.

¹ Paige CF, Abbott JA, Elvinger F, Pyle RL. Prevalence of cardiomyopathy in apparently healthy cats. JAVMA. 2009;234(11):1398–1403.
² Only recommended in case of clinical symptoms

