

DOBERMANN Cardiac BIOMARKER TESTING

Performed for screening purposes at the request of the Dobermann Partnership / Kennel Club Charitable Trust

SECTION A (to be completed by owner) - please press firmly when writing

Breed: DOBERMANN		Pet name of dog	
Reg'd name of dog			
Date of birth	sex (D/B)	Colour	KC Reg. no.
Microchip no.		Verified with reader? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Sire			
Dam			

Veterinary surgeon (Stamp)

Owner's name and address

Name:	Name:
Address:	Address:

- I certify that the dog presented for examination today is the dog identified above.
- I agree to this information being used (*in confidence*) by veterinary surgeons or geneticists researching into the problem of Dobermann dilated cardiomyopathy (DCM).
- I agree to the information being collated and published by a nominated person and the Dobermann Partnership.

Signed (Owner)	Date.....
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SECTION B (to be completed by the veterinary surgeon)

I have today, / / , examined the dog identified to me as above.

× = No & ✓ = Yes

Heart rate = _____ bpm. Heart rhythm: Sinus arrhythmia Regular sinus rhythm Ectopics?

I could not detect the presence of an obvious heart murmur in this dog at the time of examination (0/6)

I detected a murmur of grade /6 intensity.

Other significant findings? (detail): _____

I have taken a Blood sample for HIGH SENSITIVITY cTnI ASSAY (Serum tube. Centrifuge, and submit separated serum sample (labelled serum and animal name) to the laboratory. For IDEXX laboratories, please add the special code TNIDB on to the usual lab submission form.

I have taken a Blood sample for NT-pro-BNP ASSAY (EDTA tube. Centrifuge, and submit separated EDTA plasma sample (labelled EDTA and animal name) to the laboratory. For IDEXX laboratories, please add the special code BNPDB on to the usual lab submission form.

Signature _____ NAME _____ MRCVS

For the VETERINARY SURGEON to complete after receiving the result from the lab:

High sensitivity cardiac Troponin I
ng/mL (ref. range <0.07 ng/mL).

Cardiopet NT proBNP
pmol/L (ref. range <735 pmol/L)

Suggested Laboratory: **IDEXX Laboratories**, Grange House, Sandbeck Way, Wetherby, West Yorkshire LS22 7DN

DOBERMANN Cardiac *CARDIAC BIOMARKER TESTING*

NOTES FOR OWNERS and VETERINARY SURGEONS

Dilated cardiomyopathy in Dobermanns

Dilated cardiomyopathy (DCM) is a major cause of death in Dobermanns. It is known to have a genetic basis. As DCM is an acquired disease, which may not appear to later on in the dog's life, perhaps towards the end of a breeding career, it is very difficult to identify whether a young dog will develop the disease or transmit this to his /her progeny. If a single gene caused the disease, and a genetic test was available, this would be the gold standard.

There is one genetic test, called PDK4, a gene on chromosome 14, identified in USA Dobermanns, and this test is commercially available. However, it does not explain all cases in the USA or in Europe. A different chromosome, chromosome 5, has been associated with the disease in European Dobermanns, again explaining only about 50% of the cases, but so far, this is not a commercially available test.

Echocardiography (echo; a heart ultrasound scan) is the most sensitive method of detecting the disease once the dog has developed it. Echocardiography may identify minor abnormalities several years before the disease is manifested. However, echocardiographic screening needs to be repeated on an annual basis in breeding Dobermanns, so this is time consuming and expensive. As Dobermanns may have abnormal heart rhythms as DCM is developing, a 24 hour ECG (called a Holter monitor) may identify these prior to development of echo evidence of the disease. This is also an expensive test which needs to be repeated annually. Recent evidence suggests that cardiac biomarkers may identify dogs at risk of developing DCM, and identify those dogs on which to focus the more expensive tests.

Advice based on the high sensitivity cardiac Troponin I results:

	hs cTnI level	NT pro BNP level	<i>Advice</i>
Normal values	<0.07 ng/mL	<735 pmol/L	Likely to be a normal dog at the time of sampling. However, this does not mean that the dog does not have early DCM and false negative results are possible. If any exercise intolerance, coughing, shortness of breath or fainting are seen, then your veterinary surgeon should be consulted
Increased levels	>0.07 ng/mL	>735 pmol/L	An increased cTnI and/ or NT pro-BNP level can be associated with heart disease such as DCM, so that other investigations such as echocardiography or Holter monitoring are strongly recommended. Please consult with your veterinary surgeon. cTnI and NT pro-BNP may also be increased with other illnesses, so veterinary examination is advised.