



# VETERINARY CERTIFICATE OF HEART TESTING (ECHO)

Performed for screening purposes at the request of breed clubs and in agreement with the RCVS

## Dobermann: Echocardiographic Screening for DCM NOTES FOR OWNERS AND VETERINARY SURGEONS

DILATED CARDIOMYOPATHY (DCM) is an acquired heart muscle disease which occurs with high prevalence in Dobermanns (estimated as approximately 50 – 60%). The clinical phase of the disease may be just a few weeks or months, characterised by signs of congestive heart failure (for example coughing, shortness of breath, difficult breathing, marked lethargy and exercise intolerance). However, echocardiography (cardiac ultrasound exam) can identify evidence of DCM many months or even years before the clinical phase develops. This earlier phase is called occult or preclinical DCM. An even earlier phase may be identified (called equivocal) where there may be minor echocardiographic abnormalities, but the dog will need follow-up scans to see if these progress to preclinical or clinical DCM (often over many years).

To interpret the echocardiographic results in your Dobermann, the following information is provided.

Normal echocardiographic values:

LVIDd (mm)	<47 mm	LVIDs (mm)	<38 mm	FS%	>20%
EDVI (mLs/m <sup>2</sup> )	Mean: 72 ± 8 Range: 56 – 92	ESVI (mLs/m <sup>2</sup> )	Mean: 38 ± 6 Range: 24 - 53	EF%	Mean: 49 ± 6 Range: 27 – 63

The following M-mode criteria for Dobes of different weights which are conclusively abnormal and therefore consistent with DCM were used in the PROTECT study:

Body weight in kg up to:	LVIDd (mm) ≥	LVIDs (mm) ≥
25	44.6	38.5
30	45.5	39.2
35	46.4	39.9
40	47.3	40.6
45	48.1	41.3
50	49.0	42.0
55	49.9	42.7

These volumes, indexed to body surface area, are abnormal and consistent with DCM:

Abnormal EDVI	> 95 mLs/m <sup>2</sup>	Abnormal ESVI	> 55 mLs/m <sup>2</sup>
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Some Dobermanns also have abnormal heart rhythm (cardiac arrhythmias) which can cause fainting (syncope) or even sudden death, and the arrhythmia may be important before onset of congestive heart failure, or any significant echocardiographic abnormality. Therefore the “gold standard” of screening currently includes BOTH echocardiography and 24 hour ambulatory ECG recording (called Holter monitoring).

### References

- Summerfield, N.J., et al., *Efficacy of pimobendan in the prevention of congestive heart failure or sudden death in Doberman Pinschers with preclinical dilated cardiomyopathy (the PROTECT Study)*. J Vet Intern Med, 2012. **26**(6): p. 1337-1349.
- Wess, G., et al., *Prevalence of dilated cardiomyopathy in Doberman Pinschers in various age groups*. J Vet Intern Med, 2010. **24**: p. 533-538.
- Wess, G., et al. *Sue of Simpson’s method of disc to detect early echocardiographic changes in Doberman Pinschers with dilated cardiomyopathy*. Vet Intern Med, 2010. **24**: p.1069-1076.