

VETERINARY CERTIFICATE OF HEART TESTING (HOLTER)

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

Dobermann: Holter 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%). 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).

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

- For reliable results, the Holter recording should have at least 20 hours of good quality recording.
- Dog’s heart rates can range considerably from very slow when asleep and very fast when exercising (e.g. often ranging between 30 to 220 beats a minute over a day). The average one minute heart rate over the recording period in a healthy, relaxed dog is usually 65 – 90 beats a minute. Dogs who are very stressed or who have heart disease may have a faster average heart rate than this.
- Dobermanns with early evidence of DCM or with clinical DCM often show increased numbers of abnormal heart complexes, called ventricular ectopic (or aberrant) complexes. These may be premature, interrupting the normal heart rhythm (ventricular premature complexes or VPCs). These can be single, or occur in pairs (couplets), triplets or short runs (salvos). If there is a run of abnormal beats, this is called ventricular tachycardia. Ventricular tachycardia episodes, if prolonged, can cause syncopal (fainting) episodes or even, if they deteriorate further, sudden death.

NORMAL	Total VPCs over recording period <50 / 24 hours
DCM	TOTAL VPCs over recording period >100 / 24 hours

Couplets, triplets, salvos and runs of ventricular tachycardia are never normal.

We need to remember that other illnesses the dog may be suffering may also cause these ventricular ectopic complexes, so your dog may need other health tests.

- Occasionally, other premature beats may be detected, called supraventricular premature complexes, which come from the upper heart chambers. Runs of these are called supraventricular tachycardia (SVT). A small number of premature beats is not a concern, but SVT would be. SVT needs to be distinguished from a normal fast heart rate when the dog is exercising or very excited.
- It is very normal for the dog to have a number of episodes of slow heart rate (bradycardia). The episodes recorded are when the instantaneous heart rate is less than 45 beats a minute for more than 4 beats. Dropped beats and pauses, often up to about 5 seconds, are also normal in resting or sleeping dogs.

If your dog has **abnormal** Holter results, especially if there are runs of ventricular tachycardia noted, the owner and / or the primary veterinary surgeon should speak with the veterinary cardiologist about further investigations, and possible treatment, which will depend on the results from other test including echocardiography.

Reference

Wess, G., et al., *Prevalence of dilated cardiomyopathy in Doberman Pinschers in various age groups*. J Vet Intern Med, 2010. **24**: p. 533-538.