



## Canine Dilated Cardiomyopathy (DCM)

### CAUSE:

Canine dilated cardiomyopathy (DCM) is a primary disease of cardiac muscle that results in a decreased ability of the heart to generate pressure to pump blood through the vascular system. The definitive cause of canine DCM is the subject of debate, although a number of factors including nutritional, infectious, and genetic predisposition have been implicated. The fact that canine DCM occurs at a higher incidence in specific breeds suggests a heritable genetic component to this disease, although it is likely that its etiology is multifactorial. Breeds predisposed to DCM include the Doberman Pinscher, the Great Dane, the Boxer, and the Cocker Spaniel. Dietary carnitine deficiency may play a role in some cases of Boxer DCM, and taurine responsive DCM has been identified in Cocker Spaniels.

### CLINICAL SIGNS:

DCM is characterized by dilation of the ventricles with ventricular wall thinning. In many cases, dilation of all four chambers of the heart is seen. The ability of the heart to serve as a pump is diminished, and clinical signs of DCM occur secondary to either decreased delivery of oxygenated blood to the body (lethargy, weakness, weight loss, collapse), or to congestion of blood in the lungs (coughing, increased respiratory rate and/or effort, abdominal distention) or both. Cardiac dilation, decreased oxygen supply, and increased oxygen demand secondary to elevated heart rate and ventricular wall stress may predispose to the development of cardiac arrhythmias arising in either the atria (atrial fibrillation, supraventricular tachycardia) or in the ventricles (ventricular premature complexes, ventricular tachycardia). Arrhythmias may predispose affected dogs to sudden death.

### DIAGNOSIS:

DCM is diagnosed by echocardiography, which demonstrates the chamber dilation and indices of decreased pump function characteristic of the disease. Thoracic radiography is useful to evaluate pulmonary (lung) tissue and vessels, and may show evidence of fluid accumulation in the lungs (pulmonary edema) or around the lungs (pleural effusion). Electrocardiography may be used to characterize heart rhythm and to rule out arrhythmias; and in some cases, a 24 hour electrocardiogram ([Holter monitor](#)) may be recommended to more accurately characterize cardiac rhythm.

### TREATMENT:

Treatment of DCM is directed at improving systolic (pump) function of the heart, dilating the peripheral blood vessels to decrease ventricular workload, eliminating pulmonary congestion if present, and controlling heart rate and cardiac arrhythmias if present. These treatment goals are addressed by the administration of cardiac medications, which may be delivered by injection in emergent situations, or orally in patients that are more stable.

### PROGNOSIS:

Canine DCM can be a devastating disease, and the prognosis for dogs with DCM is variable depending upon breed and status at presentation. The prognosis for Doberman Pinschers with DCM, for example, is less favorable than in other breeds, while DCM in Cocker Spaniels may be relatively slowly progressive. Patients that present in congestive heart failure generally have a worse prognosis than those that are not in congestive heart failure at presentation. Irrespective of this, medical therapy may provide significant improvement in lifespan and quality of life in affected dogs.

