



A

B1

B2

C

D

← The length of each stage tends to shorten as the disease progresses →

At Risk
for Developing
Cardiomyopathy



Staging guides clinical management. Not every dog progresses through all stages.

Subclinical
Disease,
No Medication
Indicated

Subclinical
DCM Phenotype*
and/or
Arrhythmias**

THRESHOLD TO
START MEDICATION

Clinical Signs
of Congestion
or Collapse

Escalating
Treatment
and
Recurrent
Clinical Signs



- Screening echocardiogram and Holter **ECG** for predisposed breeds
- Genetic tests available for some breeds
- Dobermans: **NT-proBNP** >500 warrants further investigation
- Annual auscultation
- Client education

- History, including diet
- Physical examination
- Echocardiogram to evaluate ventricular dilation and reduced systolic function
- **ECG** or Holter **ECG** to diagnose and assess severity of arrhythmias
- Blood pressure
- Other tests may be indicated in some dogs
- Testing supports lower risk of **CHF** or **SCD**
- Recheck every 6 to 12 months or sooner if signs consistent with progressive cardiomyopathy develop

- History, including diet
- Physical examination
- Echocardiogram to diagnose ventricular dilation and reduced systolic function
- **ECG** or Holter **ECG** to diagnose and assess severity of arrhythmias
- Blood pressure
- Baseline thoracic radiographs and labwork
- Other tests may be indicated in some dogs
- Testing supports increased risk of **CHF** or **SCD**
- Pimobendan
- Antiarrhythmics as indicated
- Monitor sleeping respiratory rate (weekly) to detect subtle increases
- Client education regarding clinical signs of progression
- Recheck every 4 to 8 months or sooner if signs consistent with disease progression
- Consultation with a cardiologist is recommended

- History, including diet
- Physical examination
- **POCUS**
- Radiographs
- Labwork
- Echocardiogram
- **ECG** or Holter **ECG** as indicated
- Blood pressure
- Furosemide
- Pimobendan
- **ACE** inhibitor
- Spironolactone
- Antiarrhythmics as indicated
- Monitor sleeping respiratory rate (daily)
- Centesis for large-volume effusions
- Discuss nutrition and exercise considerations
- Initial recheck in 7 to 14 days
- Recheck every 3 to 4 months or sooner if signs consistent with progressive heart disease develop
- Consultation with a cardiologist is recommended

- History with emphasis on quality of life
- Physical examination
- **POCUS**
- Radiographs
- Labwork
- Echocardiogram
- **ECG** or Holter **ECG** as indicated
- Blood pressure
- Furosemide ↑ (or torsemide)
- Pimobendan ↑ q8h
- **ACE** inhibitor
- Spironolactone
- Antiarrhythmics as indicated
- Management goals should emphasize quality of life and include end-of-life discussions
- Recommendations are individualized and symptom specific
- Doses of recommended standard **CHF** medications can often be modified (increased, decreased, or discontinued)
- Additional therapies may be helpful
- Consultation with a cardiologist is strongly recommended

- **Diagnostics**
- **Medications**
- **Management**

ACE, angiotensin-converting enzyme; **CHF**, congestive heart failure; **ECG**, electrocardiogram; **NT-proBNP**, N-terminal pro B-type natriuretic peptide; **POCUS**, point-of-care ultrasound; **SCD**, sudden cardiac death.

*With echocardiographic confirmation.

**Severe arrhythmias may increase the risk of sudden death.

Dukes-McEwan J, et al. *J Vet Cardiol.* 2003;5(2):7-19.
Wess G, et al. *J Vet Cardiol.* 2017;19(5):405-415.