

# Canine Degenerative Myelopathy (DM)

## Description

Canine degenerative myelopathy is an incurable, progressive disease of the canine [spinal cord](#). Onset is typically after the age of 7 years.

## Symptoms

Progressive weakness and incoordination of the rear limbs are often the first signs seen in affected dogs, with progression over time to complete paralysis. A dog with degenerative myelopathy often stands with its legs close together and may not correct an unusual foot position due to a lack of conscious proprioception

DM initially affects the back legs and causes [muscle weakness](#) and [loss](#), and lack of coordination. These cause a staggering affect that may appear to be [arthritis](#). The dog may drag one or both rear paws when it walks. This dragging can cause the nails of one foot to be worn down. The condition may lead to extensive [paralysis of the back legs](#). As the disease progresses, the animal may display symptoms such as [incontinence](#) and has considerable difficulties with both balance and walking. If allowed to progress, the animal will show front limb involvement and extensive muscle atrophy and paralysis. Eventually cranial nerve or respiratory muscle involvement necessitates euthanasia or long term palliative care. Progression of the disease is generally slow but highly variable. The animal could be crippled within a few months, or may survive as long as three years or more.

## Treatment

Degenerative myelopathy is an irreversible, progressive disease that cannot be cured. There are no treatments that have been clearly shown to stop or slow progression of DM.

Exercise has been recommended to maintain the dog's ability to walk. [Physiotherapy](#) may prolong the length of time that the dog remains mobile and increase survival time. [Canine hydrotherapy](#) (swimming) may be more useful than walking. Use of a belly sling or hand-held harness allows the handler the ability to support the dog's hind legs for exercising or going up and down stairs. A 2-wheel dog cart, or "dog wheelchair", can allow the dog to remain active and maintain its quality of life once signs of weakness or paralysis of the hind limbs is detected.

## Test method

The Orthopedic Foundation for Animals has a DNA saliva test to screen for the mutated gene that has been seen in dogs with degenerative myelopathy. Now that a test is available the disease can be bred out of breeds with a high preponderance. The test is only recommended for predisposed breeds, but can be performed on DNA from any dog on samples collected through swabbing the inside of the animal's cheek with a sterile cotton swab or through venipuncture.

The test determines whether the mutated copy of SOD1 is present in the DNA sample submitted. It must be interpreted with caution by a veterinary clinician in combination with the animal's clinical signs and other lab test results.

## Genetic/breeder information

Breeding risks for degenerative myelopathy can be calculated using the Punnett Square:

- If both parents are clear (N/N) then all of the puppies will be clear
- If one parent is a carrier (N/A) and one is clear (N/N) then roughly 50% of the puppies will be clear and 50% will be carriers
- If both parents are carriers (N/A) then roughly 25% will be clear (N/N), 50% will be carriers (N/A), and 25% will be At risk (A/A)
- If one parent is clear (N/N) and one parent is affected (A/A) then all puppies will be carriers (N/A)

- If one parent is a carrier (N/A) and one is at risk (A/A) then roughly 50% of the puppies will be carriers (N/A) and 50% will be At risk (A/A)
- If both parents are At risk (A/A) then all puppies will be At risk (A/A)

#### **Stats within CdT breed**

From 1974 to 2012 there were 48 DM evaluations registered with the OFA. Of these, 79.2% are normal and 0.0% were abnormal. There is no OFA information regarding the remaining 20.8%.

#### **Source of data**

[http://en.wikipedia.org/wiki/Canine\\_degenerative\\_myelopathy](http://en.wikipedia.org/wiki/Canine_degenerative_myelopathy)