



# Veterinary Health Center

University of Missouri

## Degenerative Myelopathy

### What is Degenerative myelopathy?

Degenerative myelopathy (DM) is a fatal neurodegenerative disease that affects older dogs. It initially results in paralysis of the pelvic limbs but progresses to affect all limbs.

### Pathogenesis

Since first described in 1973 by Damon Averill, DVM, DM has stood for a degeneration of the spinal cord due to an unknown cause. In 2009, a mutation in the gene *superoxide dismutase 1 (SOD1)* was described to underlie the cause of DM. Dogs that have two copies (homozygous) of the mutant allele have been shown to be at risk for developing DM. In other words, not all dogs that have the mutation will develop DM so the mutation test is currently a test for risk. Mutations in *SOD1* are associated with some forms of human amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, which is adult in onset, causing muscle weakness and eventually respiratory paralysis.

### Clinical Signs

Degenerative myelopathy is now recognized in many breeds of dogs. Onset of DM is near 9 years of age. In the initial course of the disease, common clinical signs include an asymmetric loss of coordination (ataxia) and spastic weakness in the hind limbs. Owners often report their dogs to be scuffing their nails or toes during walking. In the later stages of the disease, clinical signs progress to paralysis of the hind limbs, urinary and fecal incontinence. Eventually all limbs become weak and swallowing difficulties may also develop. Dogs seem not to show pain during the course of the disease.

Dogs affected with DM often progress to becoming non-ambulatory within 11 months of their initial signs. Due to the difficulties in the nursing care of a large dog, euthanasia is often elected when they become unable to walk.

Smaller dogs are easier to manage so dogs of this size tend to live longer with DM.

### Treatment

Unfortunately there is no treatment for DM. We currently recommend physical rehabilitation that may have a role in maintaining the health of the muscles. Please visit our [Small Animal Physical Rehabilitation Service](#) page for more information.

Dogs with DM will need to be kept on a clean, padded bed and will need to be rotated from side to side every four to six hours if they are not able to do it on their own. As the disease progresses they will lose the ability to urinate on their own. Bladder management consisting of urinary catheterization or manual expression will be necessary three times daily. Proper hygiene and

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monitoring will be important as these dogs are more likely to develop urinary tract infections. As they lose the ability to move their legs, they may develop sores on their feet from scuffing their toes. Wound management and prevention (using wraps or booties on the feet) may be necessary.