



Degenerative Myelopathy FACT SHEET

WHAT IT IS

Degenerative Myelopathy (DM) is a spontaneously occurring, adult-onset spinal cord disorder that affects dogs, and is similar to Amyotrophic Lateral Sclerosis (ALS) or Lou Gehrig's disease in humans (1). With DM, there is degeneration of the "white matter" of the spinal cord and the peripheral nerves. The white matter tracts of the spinal cord contain fibers that transmit movement commands from the brain to the limbs and sensory information from the limbs to the brain.

Although the disease is common in several breeds, including German Shepherd Dogs, Corgis, Boxers, Chesapeake Bay Retrievers, Rhodesian Ridgebacks, and Standard Poodles, it can occur in other breeds and mixed-breed dogs as well. The typical age of onset is between 8-14 years of age, and both sexes are equally affected. It is a genetic disorder: A genetic mutation has been identified that is a major risk factor for development of DM. Therefore, breeders would do well to take into account DM when establishing their breeding programs.

DM, on its own, is not a painful disease. However, compensatory movements for a weak hind end can cause the dog to develop pain in other areas of his body such as his neck, shoulders, and front limbs.

SYMPTOMS

DM typically comes on slowly, almost imperceptibly. Symptoms generally occur as follows:

- **Initial**
 - Loss of coordination (ataxia) in the hind limbs
 - Wobbling when walking and/or rear feet knuckling over or dragging
 - Mild hind end weakness such as difficulty in: walking up steps, squatting to defecate, getting into the car
 - Can first occur in one hind limb and then the other
- **Intermediate**
 - Limbs become weak; dog begins to buckle and has difficulty standing
 - Weakness progresses until dog is unable to walk in the hind limbs
- **Advanced**
 - Loss of urinary and fecal continence
 - Weakness in front limbs

In general, without intervention, the dog will become paralyzed in the hind end within 6 months to 1 year.

DIAGNOSIS

DM is a diagnosis of elimination. This means that your dog's veterinarian will first look for other diseases that affect the dog's spinal cord, using diagnostic tests such as spinal x-rays, CT scan, MRI or myelogram. Other conditions with symptoms that are similar to DM's include a herniated intervertebral disc, tumors, cysts, infections, injuries, and stroke. A herniated disc, for example, can put pressure on the spinal cord, resulting in weakness or paralysis. Once the vet has ruled out those diseases, a presumptive diagnosis of DM might be reached. "Presumptive" because the only way to confirm the diagnosis is post-mortem (after the dog has passed away) when the spinal cord can be examined under the microscope. At that time, the vet can look for and identify degenerative changes in the spinal cord that are characteristic for DM and not typical of other spinal cord diseases.

CONTINUED...

DNA TEST

A DNA test exists, available through the Orthopedic Foundation for Animals (OFA) that can clearly identify dogs that are clear of DM; those who are carriers; and those who are at much higher risk for developing DM. However, even those dogs whose results show that they are at higher risk for developing DM may not develop the disease. The test does NOT diagnose DM. One version, for dogs who are suspected of having DM, requires a blood sample be submitted by your veterinarian, while the other requires a simple cheek swab and can be performed at home. Nevertheless, we recommend having the test performed and submitted in consultation with your veterinarian.

PROGNOSIS

Unfortunately, the ultimate outcome of DM is death. There is no cure. The good news is that intensive physical rehabilitation and properly fitted and selected assistive equipment can extend a dog's survival time by up to three years, versus six months to a year for dogs who do not receive therapy.

HOW GVR CAN HELP

• PHYSICAL REHABILITATION

In a study conducted at the University of Berne in Switzerland, researchers determined that dogs who received intensive physical rehabilitation survived longer than dogs who received moderate or no physiotherapy. Their results also demonstrated that dogs who received physical rehabilitation remained ambulatory longer than dogs who did not receive treatment. (2)

The most important consideration when adding physical activity to a DM dog's care routine is that a fine balance exists between not enough and too much. ***Overdoing it can worsen the dog's disease and is worse than doing too little.***

We can develop a program for your dog, including an at-home exercise program that is tailored to his needs. Typically a program would include:

- Active exercise: walking, weight shifting
- Passive exercise: stretching, strengthening & balance exercises
- Hydrotherapy: underwater treadmill or SwimEx resistance pool
- Massage

• ELECTRO-ACUPUNCTURE

Electro-acupuncture, anecdotally, appears to not only help with pain management, the technique also seems to, in many cases, slow the progression of the disease.

• PAIN MANAGEMENT

Although DM is not painful, the dog can suffer from pain that arises due to compensatory movements and forward weight shifting. Options for pain management include:

- Acupuncture, including electro-acupuncture
- Chiropractic
- Laser
- Chinese herbs
- Pharmaceuticals
- Nutraceuticals

• ASSISTIVE EQUIPMENT

We can assist you with the selection and fitting of assistive equipment for your dog that will offer him independence, improve his quality of life, and make it easier for you to safely assist your dog. These include:

- Booties: essential for protecting the dog's hind paws to prevent damage
- Slings/Harnesses
- Wheelchairs

CONTINUED...

RESOURCES:

- (1) Awano, T, Johnson, Gs, Wade, Cm, Katz, Ml, Johnson, Gc, Taylor, Jf, Perloski, M, Biagi, T, Baranowska, I, Long, S, March, Pa, Olby, Nj, Shelton, Gd, Khan, S, O'brien, Dp, Lindblad-Toh, K and Coates, Jr (2009). "Genome-wide association analysis reveals a SOD1 mutation in canine degenerative myelopathy that resembles amyotrophic lateral sclerosis." Proceedings of the National Academy of Sciences. 106, 2794-9. 10.1073/pnas.0812297106 (www.pnas.org/content/106/8/2794.abstract)
- (2) Kathmann I, I; Cizinauskas S, Doherr MG, Steffen F, Jaggy A. (July-August 2006). "Daily controlled physiotherapy increases survival time in dogs with suspected degenerative myelopathy". *J Vet Intern Med* 20 (4): 927–932 (www.scoutshouse.com/wp-content/uploads/2009/12/RehabTherapyandDM.pdf)

Degenerative Myelopathy in Dogs, University of Missouri:

www.caninegeneticdiseases.net/DM/mainDM.htm

Degenerative Myelopathy, University of Missouri College of Veterinary Medicine:

www.cvm.missouri.edu/neurology/dm/index.html

Degenerative Myelopathy, German Shepherd Dogs, R.M. Clemmons, DVM, PhD, University of Florida:

http://neuro.vetmed.ufl.edu/neuro/DM_Web/DMofGS.htm (note: last updated August 2002)

How to Care for a Dog with Degenerative Myelopathy, AKC Canine Health Foundation (video):

www.youtube.com/watch?v=ezYqUJTbAL0

Progression of Degenerative Myelopathy, Scout's House (video):

www.scoutshouse.com/videos/video_progressionDM.html

The DM Database (personal website):

www.thedmdatabase.com

Assistive Equipment – visit our website at www.GaVetRehab.com and see "Resources"