

Degenerative Myelopathy in Dogs

A Brief Guide • Part of the Educational Pet Disease Series from Lap of Love

Signs & Symptoms

Initial Symptoms/Signs

- Poor hind limb coordination
- Criss-crossing of the back legs
- Drunken or unstable gait
- Weakness in one or both rear limbs
- Difficulty rising after laying or sitting
- Loss of muscle tone, especially in the hind limbs

Intermediate Symptoms

- Increased rear limb weakness
- Buckling of the legs
- Trembling/shaking
- Increased muscle loss
- Unable to stand easily
- Scuffing of top of rear paws

Advanced Symptoms

- Worsening skin infections as a result of scuffing
- Incontinence (urinary/fecal)
- Unable to rise
- Front limb weakness
- Extreme muscle loss
- Dragging of the rear leg(s)

Crisis Situations Requiring Immediate Medical Intervention

- Difficulty breathing
- Sudden collapse
- Uncontrollable shaking and panting
- Uncontrollable vomiting/diarrhea
- Crying in pain
- Unable to move, paralysis

What Is It?

Degenerative myelopathy is a commonly diagnosed spontaneously occurring genetic disorder of the spinal cord affecting middle-aged to geriatric dogs. The spinal cord contains "white" matter that houses nerve fibers responsible for transmitting movement commands from the brain to the limbs. In response, the limbs communicate limb position sensory information through the spinal cord back to the brain. Deterioration of the spinal cord white matter, as occurs with canine DM, results in progressively worsening interruptions of the limb-brain neurological communication. The result is dysfunctional limb movement resulting in ataxia (drunken walking and difficulty standing). The cause of DM is a genetic mutation that places dogs carrying that gene at high risk for disease development. DM is common among breeds such as German Shepherds and Boxers, but all breeds and genders are susceptible to DM. The average age of onset of is 7-13 years old. Although DM is not considered painful, it does have other side effects: the nerves become less sensitive and the body tries to compensate for hind limb weakness, pain typically develops in other areas of the body. Decreased limb function sometimes leads to scuffing and dragging of the paws which can result in sores and skin infections. Eventually, end stage DM results in paralysis without intervention to slow the process.

Diagnosis

A specific DM test is not available. A diagnosis is made by exclusion of other diseases with similar symptoms such as spinal tumors, disc disease, and trauma. Spinal cord evaluation typically requires advanced imaging such as CT, MRI, and myelogram (dye injected into the spinal cord), though spinal x-rays can help rule out some diseases. DM is the presumptive diagnosis when no other cause of the symptoms can be found. The only definitive way to diagnose DM is with microscopic analysis of the spinal cord from the deceased pet. A genetic test is currently available that can distinguish between dogs carrying the mutation or not and those at high risk, but it cannot specifically diagnose DM.

Treatment and Management

Treatment options center around physical rehabilitation, supplements, adjunctive therapies, weight management, and environmental modifications. Addressing other concurrent diseases, such as arthritis, is also important for successful DM management. Physical rehabilitation is currently the best option to retain limb and muscle function while extending length and quality of life. Exercises aim to strengthen muscles while stimulating the nerves through low impact therapy including water therapy, massage, chiropractic adjustment, and stretching. Non-invasive therapies to control pain and decrease inflammation that may occur due to the compensatory stress affecting the rest of the body, include laser therapy, acupuncture, supplements, nutraceuticals to support joint health, and Chinese herbs. Opioids, non-steroidal anti-inflammatory drugs (NSAIDs), and neurological pain medications are often used in combination with other therapies. Utilizing mobility aids such as slings and harnesses, booties, and wheelchairs, specific to your pet's needs help provide physical support and aid in helping the pet to move around the home.

Prognosis

Unfortunately, DM is an incurable progressive disease that despite therapeutic intervention will ultimately result in complete rear limb paralysis. Most dogs are euthanatized due to poor quality of life, incontinence, and the immobility

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without assistance. Though not painful, the stress endured by dogs with DM is severe. As dogs process and respond to pain differently than humans, the stress of immobility and incontinence is often more distressful for the dog than physical pain. Without intervention, DM can quickly progress, within 4 months to a year, to complete paralysis. With intensive intervention, physical therapy, mobility aids, and other therapies a dog may be able to have 2-3 years of quality time before succumbing to the end stage effects of the disease. It is important to talk to your veterinarian and consult with a physical rehabilitation specialist to formulate an individualized plan for your pet.

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Management Tips

Consider providing:

- Easily accessible food and water
- Ramps/stairs to common areas
- Access to safe, quiet areas
- Warm, soft sleeping areas
- Night lights
- Modified surfaces to increase traction on tile or wood floors
- Natural, safe, calming products
- Diapers and potty pads as needed
- Mobility aids* and protective paw covers

Try to:

- Be consistent with medications
- Block areas of potential hazard such as stairs
- Limit strenuous activity/rough play
- Track weight, appetite, energy level, etc.
- Track good days vs. bad days
- Limit stress (kids, people, noise)
- Keep separate from other animals
- Be cautious with handling
- Stimulate the muscles daily with gentle exercise and movement
- Keep weight low and nails well-trimmed
- Address concurrent arthritis
- Keep rear end well-groomed and dry
- Protect paws from hot pavement, rough terrain, and cold snowy icy conditions

* Use of towels or other slings as well as Help 'Em Up Harnesses can be used to aid in mobility. These options as well as canine wheelchairs must be properly fitted to each individual pet to decrease risk of injuries when in use.

Before your dog's condition becomes unmanageable it is important to begin palliative care discussions with your veterinarian. The stress of the inability to walk, urinate, defecate and move normally can, for many dogs, become more distressful than physical pain.