

Degenerative Myelopathy

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SUMMARY:

1. Degenerative Myelopathy is an incurable disease that unfortunately results in a slow deterioration of the spinal cord and eventual paralysis.
2. Unfortunately there is no cure for this disease, but intense physical therapy has been shown to slow the progression.
3. The supplements recommended by some websites (Aminocaproic acid and N-Acetylcysteine for instance) have been shown both clinically and in research studies to not be effective. Therefore they are not recommended.

EXPLANATION:

Degenerative Myelopathy (DM) is a disease usually diagnosed in middle age to older dogs. Any dog can get degenerative myelopathy, however German Shepherds, Boxers, Rhodesian Ridgebacks, Chesapeake Bay Retrievers and Corgis seem to be at increased risk of getting the disease compared to other dogs. When this disease happens in Corgis, it tends to appear somewhat later in life (average age at onset is 11 years old).

In DM the nerve fibers in the spine called axons die off. The process is similar to the human disease amyotrophic lateral sclerosis or ALS, also known as Lou Gehrig's disease. We do not know what causes this axon death, but it has been associated with a genetic defect (SOD1 mutation). There is a test for this mutation which is discussed further in the diagnostics section.

PROGRESSION OF SYMPTOMS:

In the early stages, dogs will be uncoordinated in their rear legs. They may trip over their feet or scuff their toe nails. As this progresses they may stand on the tops of their feet or their legs may cross and become tangled as they walk.

The disease is not painful. Over 6 to 12 months, dogs with Degenerative Myelopathy will become paralyzed in their back legs. The disease tends to move slower in Corgis, with time to paralysis averaging 19 months. Often the paralysis occurs gradually, but some dogs will show a "stair step" pattern where they are stable for long periods of time with sudden drops in function. As the dogs become paralyzed in their back legs, they will also lose bladder and bowel control causing incontinence. Dogs who are incontinent will need help emptying their bladder. If your pet needs help, you will need to express your dog's bladder (ask your veterinarian for instruction on this procedure).

Some people euthanize their pets when they are no longer able to walk. Others choose to have their dogs fit for a wheelchair. The decision to euthanize or put your dog in a wheelchair is a very personal one. Talk to your veterinarian about your situation and what feels right for you and your dog.



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If you choose to continue care for your pet after their back legs are paralyzed, the disease will eventually move on to cause front limb paralysis and then move on to the brainstem, where it will cause difficulty staying awake, difficulty swallowing, and eventually death.

DIAGNOSTICS:

It is a common misconception that a dog can be diagnosed by an exam alone or that all older dogs with incoordination and weakness have DM. Your dog cannot be diagnosed with DM this way. It actually takes an extensive set of tests to be sure your dog has this disease.

1. **Spinal X-rays, MRI and spinal tap:** The symptoms of DM can be identical to many other spinal diseases like a slipped disc, infection or a spinal cord tumor. Some of these other diseases are curable, which is why it is important to look for other diseases before deciding that a dog has Degenerative Myelopathy. If a dog truly has Degenerative Myelopathy, all of these tests will be normal.
2. **Genetic Testing:** There is a genetic screen for this test that can be performed through the Orthopedic Foundation for Animals. Cheek swab test kits can be ordered at <http://www.offa.org/dnatesting/dm.html>
3. **FLASH Test:** The FLASH test is **not recommended** at this time.

INTERPRETING THE GENETIC SCREEN:

Having two copies of the SOD1 mutation gene has been associated with DM. It is important to note that having two copies of the gene does not guarantee that your dog has DM. We do not know yet the chance that a dog with this genetic makeup will develop DM in their lifetime, only that many dogs with DM have these genes. Therefore, it's important to make sure your pet doesn't have any other diseases that could have similar symptoms through testing such as MRI.

Having only one or no copies of the mutated gene suggests strongly that your pet does not have DM and efforts to look for other diseases should be pursued.

This genetic test is also very important in dog breeding. As responsible pet owners and breeders we want to work to remove this mutation from the lines of our pets. Therefore, it is recommended that dogs with any SOD1 mutation (one or two copies of the gene) be spayed/neutered to prevent spread through bloodlines. It is important as a pet owner to inform your breeder if you discover your dog has one or two copies of this mutated gene.

TREATMENTS:

1. **Physical therapy:** Physical therapy is the only therapy to have been shown to be helpful in Degenerative Myelopathy. Intensity and frequency are important as more rigorous programs have better results in dogs. To get the maximal benefit you need a structured program of exercise for your dog that you do as often as possible- preferably every day. If you would like a referral to a certified canine rehabilitation therapist, please ask your veterinarian.



2. **Supplements:** There are a variety of supplements, including some vitamins and antioxidants, that have been recommended by some on the internet for Degenerative Myelopathy. These therapies have not proven to be helpful and are therefore not recommended at this time.
3. **Diet:** Similarly, there are some diets that have been published on the internet for Degenerative Myelopathy. Much like the supplements, they have not proven effective and are therefore not recommended. If you would still like to try diet therapy, we strongly recommend you work with a boarded veterinary nutritionist to create a balanced diet for your pet. If you would like a referral to a veterinary nutritionist, ask your veterinarian.
4. **Stem Cell Therapy:** There are some limited reports of stem cell therapy in degenerative myelopathy. The cells are grown from material collected via a surgical procedure. To have the best chance of success, the stem cells must be injected around your dog's spinal cord. Therefore this experimental treatment is also considered invasive and has not yet been proven to be effective. Pet owners should consult carefully with a veterinarian before considering this therapy.

MONITORING:

1. **Skin Irritation, Bed Sores:** Simple skin irritations can quickly become a big problem in a pet who cannot walk. The two most common reasons for skin problems are wetness and pressure.

Use a waterless shampoo and soft towels to help clean up after urinary accidents. Make sure to check in the groin area between the legs, as this is a common place for moisture to build up.

Check for pressure sores daily. These can occur anywhere on the skin, but most commonly occur over places where the bone is close to the surface of the skin- like the hips, shoulders and elbows. Early pressure sores look like a mild red irritation of the skin. These spots can quickly progress to dangerous open wounds, so vigilance is important. Contact your veterinarian with any concerns.

2. **Urinary Tract Infections:** Urinary tract infections are very common in pets who have had spinal problems. Each time your pet urinates, evaluate the urine for abnormal colors and smells. If your pet is urinating in the grass, you may blot the spot with a white piece of paper or paper towel to evaluate the color. If you have any concerns, contact your veterinarian.
3. **Toe Nail and Foot Health:** As incoordination progresses, your dog will scuff their nails and may injure their feet. Boots may help protect your dogs feet from injury. These can be obtained at retailers such as REI or online through websites like www.handicappedpets.com. Just like human shoes, there are many different styles and fits. It may take a couple of tries to find a boot that works well for your dog. Make sure that any retailer you use has a good return policy so that you may try different boots at home. Make sure your dog spends at least half the day with their shoes off to prevent moisture build up and infections.

