UCDAVIS VETERINARY MEDICINE
Veterinary Genetics Laboratory

Degenerative Myelopathy (DM)

Quick Summary

Degenerative myelopathy (DM) is an inherited neurologic disorder of dogs characterized by gradual muscle wasting and loss of coordination typically beginning in the hind limbs. Testing is most appropriate for those breeds in which the clinical disease has been associated with the SOD1 allele.

Phenotype: Affected dogs usually present clinical signs of disease in adulthood (at least 8 years of age) with gradual muscle wasting and loss of coordination typically beginning in the hind limbs. Disease progression continues until the dog is unable to walk. Small breed dogs tend to progress more slowly. In late stages of the disease, dogs may become incontinent and the forelimbs may be affected. Affected dogs may fully lose the ability to walk 6 months to 2 years after the onset of signs.

Mode of Inheritance: Autosomal recessive, incomplete penetrance

Alleles: N = Normal/Unaffected, **DM** = Degenerative myelopathy

Explanation of Results:

- Dogs with **N/N** genotype will not have degenerative myelopathy and cannot transmit this allele to their offspring.
- Dogs with **N/DM** genotypes will not have degenerative myelopathy as a result of this allele, but are carriers. They will transmit this allele to 50% of their offspring. Matings between two carriers are predicted to produce 25% of puppies at risk for developing degenerative myelopathy.
- Dogs with **DM/DM** may have degenerative myelopathy, a disabling condition, and will transmit this allele to all of their offspring.

Gregor Mendel's Punnett Square

	Axel N/N	Axel N/N
Sydney DM/DM	(DM Carrier) N/DM	(DM Carrier) N/DM
Sydney DM/DM	(DM Carrier) N/DM	(DM Carrier) N/DM