

Spinal Muscular Atrophy (SMA)

Spinal muscular atrophy (SMA) is a genetic disease in Maine Coon cats, and this condition is characterized by the deterioration of neurons that allow voluntary or conscious movement. There are varying levels of severity, but symptoms will most often present in young kittens.

Noticeable muscle weakness will occur within the first few months of a kitten's life. Maine Coon kittens will have difficulty walking, and they will have an odd gait. As the kitten ages, they will become clumsier and lose the ability to jump.

Cats suffering from spinal muscular atrophy do not feel pain and can lead a relatively everyday life. Currently, there is no cure for this ailment.

A genetic test can be performed when the kitten is between six to eight weeks by taking a buccal swab.

Phenotype:

Spinal muscular atrophy (SMA) is characterized by progressive instability with unsteady gait and posture abnormalities due to loss of motor neurons in the lower spinal cord and atrophy of muscles in the hind limbs.

Affected kittens first show signs of SMA at about 3-4 months of age.

Mode of Inheritance: Autosomal recessive

Alleles: N = Normal/Unaffected, S = Spinal muscular atrophy
Breeds appropriate for testing: Maine Coon

Explanation of Results:

Cats with N/N genotype will not have spinal muscular atrophy. They cannot transmit this spinal muscular atrophy variant to their offspring.

Cats with N/S genotype will not have spinal muscular atrophy, but are carriers. They will transmit this spinal muscular atrophy variant to 50% of their offspring. Matings between two carriers are predicted to produce 25% spinal muscular atrophy-affected kittens.

Cats with S/S genotype will have spinal muscular atrophy, a non-fatal but disabling condition.

Additional Details

Spinal Muscular Atrophy (SMA) is a genetic disease seen in Maine Coon cats. The disease is characterized by progressive instability with unsteady gait and posture abnormalities due to loss of motor neurons in the lower spinal cord and atrophy of muscles in the hind limbs. Affected kittens first show signs of SMA at about 3-4 months of age. The condition is neither painful nor fatal and affected cats can live a comfortable life indoors. The disease is inherited as an autosomal recessive, thus 2 copies of the mutation are required to produce the disease and both males and females are equally affected. SMA in Maine Coon cats is caused by a large deletion of chromosome 1.