Progressive Retinal Atrophy (PRA), CORD1

Affected Breeds: English Springer Spaniel, Miniature Long-haired Dachshund, Miniature Short-haired Dachshund, Miniature Wire-haired Dachshund

Degeneration of the light sensitive membrane at the back of the eye is known as PRA, and leads to reduced vision and often blindness. PRA occurs in many breeds of dog and there are a number of different breed-specific causal mutations - some of these have been characterised and some have not.
A specific mutation known as CORD1 (**CO**ne-**R**od **D**ystrophy 1) has been associated with PRA in Long-, Short- and Wire-haired Miniature Dachshunds and also the English Springer Spaniel.

The age of diagnosis varies and it may be that genetically-affected dogs are not identified during their lifetime and are used for breeding – such affected dogs will pass the CORD1 mutation to all offspring. Carriers on the other hand will pass the mutation to half their offspring.
Due to the high frequency of this mutation in these breeds, a gradual approach should be taken to elimination of the mutation from the population; both carrier and affected dogs can be used for breeding when matched with a clear dog. This approach will allow continued breeding with otherwise valued animals, and will minimise the effect on the gene pool.
PRA-affected dogs should be routinely examined by their vet.

This test is particularly useful for breeders:

- To identify genetically affected dogs which should have eye examinations routinely with their vet
- To identify the carrier status of dogs under consideration for mating; affected and carrier dogs should only be matched with a clear dog

This test will be reported as:
CLEAR : no evidence of the CORD1 mutation
CARRIER : carries one copy of the CORD1 mutation, which will be passed to 50% of offspring
AFFECTED : has two copies of the CORD1 mutation, one of which will be passed to all offspring

The genetic status of dogs can be used to predict breeding outcomes when different combinations are mated:

AFFECTED X AFFECTED	= 100% AFFECTED
AFFECTED X CARRIER	= 50% AFFECTED, 50% CARRIER
CARRIER X CARRIER	= 25% AFFECTED, 50% CARRIER, 25% CLEAR
AFFECTED X CLEAR	= 100% CARRIER
CARRIER X CLEAR	= 50% CARRIER, 50% CLEAR

References

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