

Progressive Retinal Atrophy (PRA) in Cavaliers

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What is Progressive Retinal Atrophy?

Progressive Retinal Atrophy (PRA) causes deterioration of the cells of the retina, the rear lining of the inner eye. These cells collect light and send information via the optic nerve to the brain, where the signal is interpreted as vision. In most forms of the disease, PRA will cause total blindness.

There are two types of PRA:

1. Generalised PRA (g-PRA)

This causes the photoreceptor cells of the retina (rods and cones) to degenerate and die, causing eventual total blindness.



Early onset The cells begin to develop abnormally immediately after birth.

Late onset Also called Progressive Rod and Cone Degeneration (prcd-PRA). The cells develop normally initially, but progressively deteriorate, with dogs not showing clinical signs of blindness until usually 1 or more years of age, progressively leading to total blindness by 3-5 years of age.

2. Centralised PRA (c-PRA)

Also called RPE dystrophy, this causes abnormality in the retinal pigmented epithelium (RPE), with the photoreceptor cells also eventually degenerating. Vision is lost at a slower rate than with g-PRA, and not all dogs will completely lose their vision. The age of onset of this condition can be quite variable, with symptoms manifesting themselves between 4 and 10 years of age. This is the form of PRA that can affect Cavaliers.

What are the Signs or Symptoms?

Early signs of prcd-PRA begin with night blindness, followed by loss of vision during daylight hours, tunnel vision as their peripheral sight fails, and then eventually total blindness. They may also have dilated pupils, and maybe a shiny or reflective appearance in their eyes.

c-PRA manifests itself with progressively failing sight. Dogs will start to lose distance vision, and begin to bump into stationery objects placed in front of them. They will lose their central sight first, but may retain peripheral vision for several years.

How is it Diagnosed?

A simple veterinary examination using an ophthalmoscope may detect signs of PRA, but not usually before symptoms of vision impairment have become apparent. If g-PRA is suspected, then an

electroretinogram (ERG) can be performed by an eye specialist, which may provide a diagnosis before any clinical symptoms appear. The ERG needs to be conducted under a general anaesthetic. In some breeds, there is a DNA screening test available to test for specific forms of PRA, however no such test exists for Cavaliers and their c-PRA.

How is it Treated?

Unfortunately there is no treatment for any of the forms of PRA, but there are ways you can help your dog to cope with reduced vision. Dogs have terrific senses of smell and hearing, and this will help them to compensate for visual inadequacies, especially if you keep their environment stable eg don't move furniture around, keep paths clear of obstacles, and take regular routes when you take them on walks.

How can you Avoid Buying a Dog with Progressive Retinal Atrophy?

As PRA is an inherited condition, screening of the parents of a puppy you are considering purchasing is important. Make sure you obtain copies of certification showing a clear examination under one of the accredited eye schemes for the sire and dam of the puppy. The form of PRA (c-PRA) that affects Cavaliers appears to be passed on via a dominant gene, which means any animal carrying the abnormal gene should also display the condition. However, due to the late onset of symptoms, the sire and dam of your puppy may appear to be clear of the disease until they are well into or past their best breeding years. If you are able to look further back through the pedigree of the parents, then this may improve your chances of detecting any evidence of PRA in their lines. Responsible breeders will generally have certification done on their breeding stock on an annual basis. Breeding is not generally recommended for any dogs either exhibiting or carrying the defective gene for PRA.

In USA, the Canine Eye Registration Foundation (CERF) can direct you towards members of the American College of Veterinary Ophthalmologists for eye exams. In UK, the British Veterinary Association (BVA) conducts eye exams, and in Australia, contact the Australian Veterinary Association (AVA) for examinations conducted under the Australian Canine Eye Scheme (ACES)