Eye Factsheet

Progressive Retinal Atrophy (PRA)

What is PRA?

PRA is a condition in which affected dogs lose vision gradually, often over several months or even years. Typically, night vision deteriorates first, and many owners first notice problems with their dog's sight when they go outside for a walk during dawn or dusk. A common complaint we hear is that dogs miss a dustbin that has been placed on the pavement during their walk, or that they become reluctant to go outside when it is dark in winter.

What causes PRA?

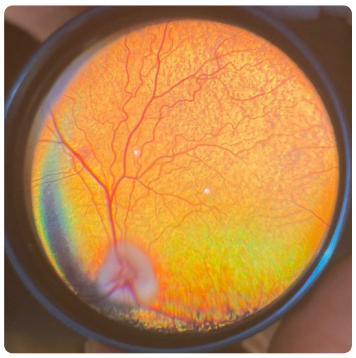
The progressive vision loss in dogs with PRA is caused by early fading of the retina – the layer in the back of the eye that is responsible for vision. PRA is an inherited condition which is typically autosomal recessive meaning that 2 faulty genes (one from the sire and one from the dam) need to be transferred to the puppy for the disease to be present. Many breeds are known to be affected by the condition such as Labrador Retrievers, Cocker Spaniels or Miniature Poodles and various genetic tests are available to try and find out whether a dog carries one of the abnormal genes that will lead to retinal degeneration.

How is PRA diagnosed?

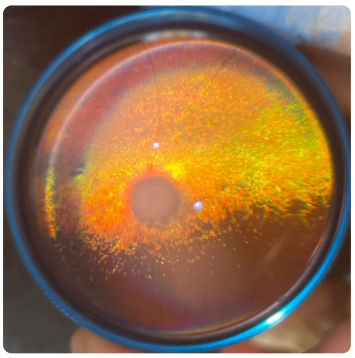
Most patients with PRA have a history of gradual vision loss and poor eyesight in poor lighting conditions. Affected patients will have very wide pupils that react very slowly or not at all to a strong light stimulus. Your veterinary ophthalmologist can examine the back of the eye to make a diagnosis. Typical findings show a withering of the retina (the layer at the back of the eye responsible for vision) and can also causes the reflective layer under the retina to become hyper-reflective, which explains why dogs with PRA have an odd 'green glow' when the light catches their eyes.

If a cataract has already formed (meaning, the lens has become opaque and has covered up the retina), then it is no longer possible for your ophthalmologist to examine the retina in detail. In these cases, to diagnose PRA we can carry out an electroretinogram (ERG). This is an electrical test for the retina very similar to an electrocardiogram (ECG), which checks out the function of the heart. Often, we will need to give a sedation to carry out the ERG. Dogs affected with PRA have reduced or absent retinal responses on an ERG. This test is especially useful if your dog should undergo cataract surgery and is a breed typically affected by PRA. A gene test can now also been carried out with an oral swab for most breeds, for more information on this please speak to one of our ophthalmologists.

Here is a photo of a patient having their retina assessed during a routine eye exam. This is a normal looking retina for a dog with this colour coat.



Above a photo of a normal retina. Note the white dot (the optic nerve head), from which all the red blood vessels arise



Here we have a photo of an eye with severe retinal degeneration. Note the absence of blood vessels and the slight shine or shimmer on the golden area.

Do dogs with PRA also show other signs of ocular disease?

Most dogs with PRA will also develop cataracts (cloudiness of the lens) meaning that their eyes will appear white over time. The cataracts will also contribute to vision loss as the opacity of the lens stops light from reaching the retina. Unfortunately surgical removal of the cataracts does not help to stop vision loss as the retina is the primary cause for the blindness. There are however some dog breeds (especially Cocker spaniels) where the cataracts develop very early in the disease (quicker than the retina deteriorates) and it is possible to prolong the time of the dog being sighted with cataract surgery. Unfortunately, all dogs with PRA will however eventually go blind.

Above a Jack Russell Terrier with cataracts in both eyes. Note the white haze in the centre of both eyes.

Can PRA be treated?

Unfortunately, there is no known treatment that reverses the destruction of the retinal damage in PRA patients. Oral supplementation with vitamins might have a beneficial effect on delaying blindness but cannot stop dogs from becoming ultimately blind.

Will my dog cope having lost vision due to PRA?

Losing vision can be distressing for your pet; however, vision loss will occur gradually in PRA and does not cause pain. Dogs typically cope well and tend to remain confident in their own environment. Especially in the beginning of the disease (when your dog is still able to see at bright light conditions) you can help your dog at night-time by providing good artificial illumination (illuminate steps and use baby light in floors, walk with a torch). It is very rare that a patient with blindness due to PRA does not cope with their situation and we would be more than happy to re-assess such a patient at any time and see whether we can offer additional support in ensuring a good quality of life!
Please consult our “Living With Blindness” factsheet for more helpful tips on managing your dog’s day to day life.

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