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## **PROGRESSIVE RETINAL ATROPHY (PRA)**

### **What is Progressive Retinal Atrophy?**

PRA is an inherited progressive thinning / degeneration of the retina of both eyes which results in blindness.

### **What are the signs of PRA?**

The first sign that is noticed is poor vision in dim light, so-called night blindness. This is because the rod photoreceptors are the first affected. An increase in the sheen in the eye (the tapetal reflection) may be appreciated. Gradually day vision is also affected. This can happen slowly over months or years, or may be noticed relatively suddenly. The pupils may become large and unresponsive to light. Cataracts can occur as a result of PRA. This is because the thinning retina can release toxic metabolites which can damage the lens and therefore it can go opaque. Cataracts are noticed as a grey or white area behind the pupil. They also disrupt vision and can cause secondary problems such as uveitis (inflammation inside the eye) and glaucoma (a raised intraocular pressure which leads to blindness and is painful).

The ophthalmologist can see changes within the fundus (the back of the eye) which are bilateral and symmetrical. There is an increase in tapetal hyperreflectivity, which may appear as fan-like striations converging on the optic disc. There is attenuation (thinning) of the retinal blood vessels as the retina is thinning, and also vasoconstriction as a result of an increase in oxygen tension of the retina.

Age of onset is variable and depends on the breed of the dog. It can be as young as 3 months, but also can be more than ten years.

### **What is the cause of PRA?**

There are familial or hereditary causes for PRA which result in retinal degeneration. The retina appears normal at birth but later degenerates. Therefore certain breeds with the condition should not be used for breeding. However a syndrome which closely resembles PRA can develop the condition even in breeds which are not listed.

### **What treatment is available for PRA?**

Unfortunately there is no treatment available for PRA. Some ophthalmologists recommend treatment with the anti-oxidant lutein to delay the progression of blindness. However there is no scientific evidence to prove the effectiveness and safety of this product. Lutein is taken by some people with age-related macular degeneration.

Dogs with PRA may develop cataracts, and this could further accelerate the blindness. However in most cases the cataracts are not removed surgically, as the retinal disease will still be present.



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There are blood tests available for certain breeds which can show whether or not the dog is affected with PRA, even before the first signs develop. Some breeders will get this test done before breeding. These are listed on the web-site [www.optigen.com](http://www.optigen.com)

Breeds affected by prcd-PRA which can be tested by a genetic test in the USA include:

- American Cocker Spaniel
- American Eskimo Dog
- Australian Cattle Dog
- Australian Shepherd
- Australian Stumpy Tail Cattle Dog
- Chesapeake Bay Retriever
- Chinese Crested dog
- English Cocker Spaniel
- Entlebucher Mountain Dog
- Finnish Lapphund
- Golden Retriever
- Kuvasz
- Labradoodle
- Labrador Retriever
- Lapponian Herder
- Miniature & Toy Poodle
- Nova Scotia Duck Tolling Retriever
- Portuguese Water Dog
- Spanish Water Dog
- Swedish Lapphund

Cardigan Welsh Corgis, Sloughis, Samoyeds, Siberian Huskies, Old English Mastiffs, Bull Mastiffs and Miniature Schnauzers suffer from different types of PRA from the breeds above, but can similarly be tested for.