

Labrador Health

Labradors are generally very healthy dogs, however, just like people, they sometimes inherit some genetic information from their parents which can lead to ill health. There are some diseases which we can avoid entirely in our dogs by testing our breeding animals. Some diseases cannot be entirely avoided by screening and in some cases this is because the mechanism of inheritance is not yet fully understood, or because a test is not yet available. Sometimes, to complicate matters further, there is an inherited element to a disease, but environmental factors such as diet and exercise play a significant role too.

The key diseases and conditions that Labradors are predisposed to include hip dysplasia, elbow dysplasia, progressive retinal atrophy, exercise induced collapse, hereditary cataracts and epilepsy. These conditions are briefly discussed below.

Hip Dysplasia ("HD")

HD is a developmental malformation of the hip joints resulting in secondary joint disease (arthritis) and corresponding clinical symptoms such as pain and lameness. The disease affects heavy boned breeds of all sizes such as Labradors. The disease has both an hereditary and environmental component in Labradors. Breeding stock should have their hips radiographed at around 12 months of age and these radiographs are then "scored" by a skilled scrutineer to reflect the extent of HD evident in the hip joints. In South Africa, we use a derivative of the FCI (Fédération Cynologique Internationale) scoring method. The FCI proposes a 5 grade scoring system which measures and considers various, objective hip joint criteria to come up with an overall score, ranging from "A" through to "E". Simply put, "A" means no signs of HD, "B" means near normal hip joints, "C" means mild HD, "D" means moderate HD and "E" means severe HD. Dogs with D or E hip scores are usually excluded from breeding programmes. In South Africa, we have broadened the scoring system slightly ("A1", "A2", "B1" etc), much like Germany's system.

Through careful breeding, responsible breeders are trying to reduce the incidence of HD but unfortunately, this is only partially successful in eradicating the problem for a few reasons. Firstly, its mode of inheritance is not fully understood and HD can skip generations, secondly, not all puppies in a litter are x-rayed so HD could "slip through" undetected and thirdly, because environmental factors such as diet, exercise and the conditions under which the puppy is raised contribute significantly to the incidence of HD.

Puppy owners can play a major role in reducing the risk of your puppy developing HD by practicing the following:

- Feed a good quality puppy food designed for large breed puppies, or a balanced, species appropriate, raw food diet if preferred;
- Keep your dog slim – there is a direct correlation between obesity and HD;
- Avoid stairs and slippery surfaces, and discourage jumping for at least the first 6 months of a puppy's life;
- Limit excessive, repetitive exercise until the puppy is 12 months old – 5 minutes of exercise per month of age is a good rule of thumb until maturity;

- Delay neutering until 12 months if, and only if, you are able to prevent unplanned matings. Evidence suggests a heightened risk of HD in dogs neutered early.

Elbow Dysplasia ("ED")

ED is a non-specific term denoting abnormal development of the elbow. ED encompasses the clinical and radiographic manifestation of four main developmental abnormalities that lead to malformation and degeneration of the elbow joint, including ununited anconeal process ("UAP"), fragmented medial coronoid process ("FMCP"), osteochondritis dissecans ("OCD") and elbow incongruity¹. This is a progressive, crippling disease, which, like HD, has both an hereditary and an environmental component.

In South Africa, elbow radiographs are scored according to the severity of the arthrosis and/or presence of a primary lesion using the IEWG (International Elbow Working Group) protocol which grades elbows from "0" (normal) to "3" (severe dysplasia).

Once again, responsible breeders will have radiographs taken of their breeding stock at 12 months of age and these will be scored using the above method. Affected dogs are usually removed from the breeding programme. Since ED also has a significant environmental component, puppy owners should practice the same principles outlined in the paragraph on HD above to limit the risk of ED developing.

Progressive Retinal Atrophy ("PRA")

The genetic disorder, **prcd-PRA**, causes cells in the retina at the back of the eye to degenerate and die, even though the cells seem to develop normally early in life (<http://www.optigen.com>). The "rod" cells operate in low light levels and are the first to lose normal function. Night blindness results. Then the "cone" cells gradually lose their normal function in full light situations. Most affected dogs will eventually be blind. Prcd-PRA is inherited as a recessive trait. This means a disease gene must be inherited from both parents in order to cause disease in an offspring. Thus for breeding purposes, a "clear" individual will not display the symptoms of the disease nor will it pass the mutant gene to any of its offspring.

Exercised Induced Collapse ("EIC")

EIC is an inherited syndrome of exercise intolerance and collapse and is commonly recognised in otherwise normal Labrador Retrievers. With excess exercise, affected dogs may become wobbly and lose control of their hind legs. This normally resolves in 5-10 minutes, but the dogs must be kept quiet and preferably cooled, as their temperatures can rise during the incidents. Signs often first become apparent in affected dogs under 3 years of age. Affected dogs are otherwise normal and are often described as being extremely fit, muscular, prime athletic specimens of their breed with an excitable temperament and lots of drive. If trigger activities can be avoided, dogs with EIC can live normal lives.

Like PRA, EIC is also inherited as a recessive trait and a simple genetic test can determine whether a dog is "clear", a "carrier" or "affected". A "clear" individual is free of the trait and cannot pass the mutant gene on to any offspring or display symptoms himself. A "carrier" won't develop the disease himself but could pass the gene on to his offspring, and an "affected" dog could become symptomatic and will pass the gene on to his offspring.

¹ Kirberger, R M, Fourie S L. Elbow dysplasia in the dog. Journal of the South African Veterinary Association (1998).

Hereditary Cataracts

Cataracts manifest as opacity (seen as whiteness) of the lens in the eye and results in blindness. Cataracts can suddenly develop at any age in a Labrador and breeding stock should be regularly screened by a qualified veterinary ophthalmologist.

Epilepsy

Canine epilepsy is perhaps more common than you would think. It is thought that it affects a minimum of 4% of dogs. If your Labrador has had a seizure, contact your vet for assistance. But remember to wait at least five minutes after a seizure before you put him in the car or take him out, to allow him to recover. A seizure is the term used to describe a sudden surge of electrical activity in the brain that interferes with the normal functioning of the brain, and with the way in which the brain controls the body.

There are a myriad of physiological changes that could cause a seizure and epilepsy is only diagnosed once all other possible causes of seizure have been ruled out. Seizures that are caused by abnormalities to the brain that result in repeated seizures is called epilepsy. It is most commonly diagnosed in dogs between one and five years of age.

Most seizures in dogs occur during periods of rest, although some individual dogs do seem to have them in response to times of intense stress too. During a seizure the dog collapses and loses consciousness. He or she will fall on their side, become stiff and make jerky movements with their legs. Although the dog's limbs are moving, they are not in control of this movement. They are not able to hear you or respond during, because they are not actually awake. Your dog may lose control of his bowels and bladder during a seizure. Seizures normally last up to 3 minutes and your dog will not be able to hear you or respond to you during a seizure.

A dog's behaviour after a seizure will vary from case to case. Most dogs will seem a little disorientated for 10 or 15 minutes, before going back to normal. Some will leap straight back up and carrying on as though nothing has happened. Others will be very lethargic for the next day or so. Some dogs will cry out or howl during a seizure, but rest assured that this is not because they are in pain. Although they look and can sound horrible, seizures are not painful as the dog is unconscious throughout the episode.

Whilst there are treatments available for canine epilepsy, these work on removing or decreasing the symptoms and not the cause. They are not a cure, and your dog will still have epilepsy. Various drugs such as Phenobarbital, Bromide or even Diazepam can be used in the treatment of epilepsy, but many dogs will do just as well without treatment at all. Even dogs who are on treatment will still have seizures occasionally.

A familial link has been found in *some* types of epilepsy and work is ongoing to discover the genes responsible.