

## Primary Open Angle Glaucoma (POAG) in the Basset Hound - information sheet

### About the disease

Primary glaucoma is a painful and blinding disease associated with high pressure inside the eye. It is an inherited condition and is subdivided into two types: primary open angle glaucoma and primary closed angle glaucoma. **Basset Hounds are now known to be at risk of both forms of glaucoma.**

In both forms, glaucoma results from reduced drainage of fluid from the eye, causing a build-up of pressure which, in turn, leads to pain and blindness. For closed angle glaucoma (but not open angle glaucoma), a screening technique called gonioscopy can identify dogs at risk.

However, we are delighted to report that **the mutation causing primary open angle glaucoma (POAG) in the Basset Hound has been identified** at the Kennel Club Genetics Centre at the Animal Health Trust (AHT), and a DNA test is now available from 1 June 2015.

### How common is the disease?

Primary open angle glaucoma (POAG) currently appears rare in the Basset Hound but may present a new and emerging disease. We have tested a random selection of Basset Hounds without POAG to determine how common the mutation is within the UK population - approximately 15% of Basset Hounds carry the mutation.

### How is the disease inherited?

The disorder shows an autosomal recessive mode of inheritance, which means that two copies of the defective gene (one inherited from each parent) have to be present for a dog to be affected by the disease. Individuals with one copy of the defective gene and one copy of the normal gene, called carriers, show no signs of disease but can pass the defective gene onto their offspring. When two carriers are crossed, 25% (on average) of the offspring will be affected by the disease, 25% will be clear and the remaining 50% will themselves be carriers. After DNA testing the results will be defined as follows:

#### **CLEAR:**

The dog has 2 copies of the normal gene and will neither develop POAG, nor pass a copy of the POAG gene to any of its offspring.

#### **CARRIER:**

The dog has one copy of the normal gene and one copy of the mutant gene that causes POAG. It will not develop POAG but will pass on the POAG gene to 50% (on average) of its offspring.

#### **AFFECTED:**

The dog has two copies of the POAG mutation and is affected with POAG.

Carriers can still be bred to clear dogs. On average, 50% of such a litter will be clear and 50% carriers; there can be no affected dogs produced from such a mating. Pups which will be used for breeding can themselves be DNA tested to determine whether they are clear or carriers of POAG.

For more information please contact [dnatesting@aht.org.uk](mailto:dnatesting@aht.org.uk) and we'll be happy to deal with your enquiry.

DNA testing kits can be order through our online webshop <http://www.ahtdnatesting.co.uk/>