

Update on the AHT's Goniodysgenesis and Glaucoma Project in the Flatcoated Retriever

February 2015

We have received the following report from James Oliver (veterinary ophthalmologist at the Animal Health Trust (AHT)).

The AHT is one year into a 6 year research project into the genetics of goniodysgenesis (also known as pectinate ligament dysplasia) and primary angle closure glaucoma in multiple dog breeds including the Flatcoated Retriever. This research forms the basis of a PhD being undertaken by James Oliver, a specialist in veterinary ophthalmology, under the supervision of Dr Cathryn Mellersh, head of Canine Genetics Research at the Animal Health Trust. The first part of the project consisted of providing current prevalence data in the population.

Between September 2013 and August 2014, gonioscopy and cheek swab sampling were performed in 170 Flatcoated Retrievers. 17.1% of these dogs were affected by goniodysgenesis which is much lower than the prevalence rate of 34.7% reported by Read and others in 1998. This reduction likely reflects relatively widespread uptake of screening for the condition under the BVA/KC/ISDS eye scheme since 1998. Our results also show a significant association between goniodysgenesis and age - older dogs are more likely to be affected than younger ones. This finding supports the previous findings by Pearl and others (2015) who documented progression of goniodysgenesis over time in individual Flatcoated Retrievers. Thus, although prevalence of goniodysgenesis has reduced over the last 16 years, it remains relatively high which is most likely explained by the potential of progression of the disease. It is therefore likely that a significant number of animals who appear normal when examined at a young age enter the breeding population before becoming affected at a later age.

We suspect the key to solving the problem to lie in the genetics of goniodysgenesis to which the AHT is now turning its attention. DNA has now been extracted from the cheek swab samples taken from affected and unaffected dogs and the AHT is in the process of comparing the DNA between these two groups. Initial analysis of this data is anticipated to be completed by April 2015.