

WELSH SPRINGER SPANIEL JOINT HEALTH GROUP

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Chairman: Position vacant.
Treasurer: Anne Morgan
Committee: The committee comprises:
Two delegates, one reserve Delegate and One Trustee from each of the four Breed Clubs (NEWSSC, SEWSSC, WSSC AND WSSCSW)

DISEASES AFFECTING THE WELSH SPRINGER SPANIEL FACT SHEET 3 – GLAUCOMA

WHAT IS GLAUCOMA?

Glaucoma is an increase in fluid pressure within the eye which, if not successfully treated, leads to pain and blindness. Two forms of inherited glaucoma are considered to exist in the dog: primary open angle glaucoma and primary closed angle glaucoma. The latter form is considered to be inherited in the Welsh Springer Spaniel. In primary closed angle glaucoma, goniodysgenesis (an abnormality of the drainage angle and also referred to as pectinate ligament dysplasia) predisposes the dog to acute onset disease, usually in middle age. Primary closed angle glaucoma is very painful and affected dogs are usually quiet, head shy and inappetent. The affected eye usually appears red, cloudy and swollen and is blind.

The Joint Health Group now collects information on Welsh Springer Spaniels that develop Primary Glaucoma, and you are requested to contact the Secretary (details on the heading of this Fact Sheet) with this information if your dog should develop it.

WHAT TREATMENT IS AVAILABLE?

Treatment is often unrewarding and most dogs with primary closed angle glaucoma need to have their eyes removed on welfare grounds. Medical treatment, in the form of pressure-reducing eye drops applied several times a day, is usually the first choice of treatment and can sometimes preserve vision and comfort for considerable periods. Surgical procedures to either increase the drainage of fluid from the eye or to reduce fluid formation within the eye are also available but are not without significant complications. Research continues into the most appropriate and successful methods of treating this distressing condition.

IS GLAUCOMA INHERITED?

Goniodysgenesis is known to be the main risk factor for primary closed angle glaucoma. Goniodysgenesis is highly heritable and is particularly prevalent in certain breeds. Thus, both goniodysgenesis and primary closed angle glaucoma are considered to be inherited. In a recent study in the Welsh Springer Spaniel, moderate to severe goniodysgenesis was found in 36.2% of dogs which is similar to other predisposed breeds (Oliver et al,

2016). Originally, glaucoma was suggested to be inherited as a dominant trait in the Welsh Springer Spaniel but it is now known that the inheritance mechanisms underpinning both glaucoma and goniodysgenesis are much more complex, likely involving mutations in more than one gene and possibly environmental influences.

CAN MY DOG BE TESTED FOR THIS CONDITION?

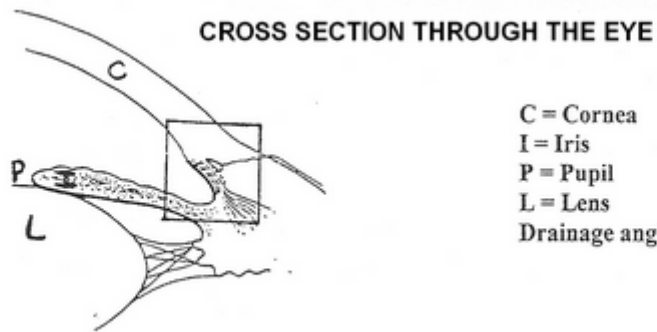
The risk factor for primary closed angle glaucoma, goniodysgenesis, can be screened for by an examination technique called gonioscopy and affected dogs can then be eliminated from breeding programmes. Gonioscopy can be performed from 6 months of age but should be repeated every 3 years as it is now known that goniodysgenesis can progress with time in several dog breeds, including the Welsh Springer Spaniel. An appointment with a panellist of the BVA/KC/ISDS Eye Scheme is required for this test (<https://www.bva.co.uk/canine-health-schemes/find-an-eye-panellist/>). A few drops of local anaesthetic are applied to the eyes and then a special type of contact lens is applied to the eye, permitting examination of the drainage angle of the eye.

Currently, it is not possible to accurately predict what degree of goniodysgenesis places a dog at significant risk of developing clinical glaucoma. The BVA eye test has, until recently, provided only two categories of possible result – affected or unaffected which has neither allowed a way of monitoring gradual progression of disease nor the identification of dogs at particular risk of glaucoma. However, the BVA/KC/ISDS Eye Scheme is currently trialling a pilot scheme of gonioscopy grading to help combat these problems and allow for more informed breeding decisions. Under this pilot scheme, dogs are either classified as Grade 0 (unaffected), Grade 1 (mildly affected), Grade 2 (moderately affected) or Grade 3 (severely affected). Breeding advice will vary from breed to breed being related to the prevalence of goniodysgenesis within and numerical size of the breed in question. Generally, however, it would be preferable to only breed with dogs with Grade 0 or Grade 1 goniodysgenesis in most breeds. Dogs which are scored Grade 2 (moderately affected) represent a greater risk for breeding than Grades 0 and 1. However, in breeds in which there are significant concerns relating to maintenance of genetic diversity we advise that, if these dogs are otherwise in excellent health and have good results from other screening schemes, they may be used cautiously for breeding with particular care to use mates with the best possible gonioscopy results. This advice may change, however, as further research is performed and, it remains to be seen, whether the current pilot project will be formally adopted or not. .

It is important to emphasise that if your dog is found to be affected with goniodysgenesis (Grade 1 – 3), it DOES NOT MEAN that your dog will develop glaucoma. Currently, only dogs with very severe goniodysgenesis (Grade 3) are considered at risk of glaucoma. It should be noted, however, that because goniodysgenesis can progress with age, and even dogs found to be unaffected for goniodysgenesis at a young age, may still develop the risk factor and, ultimately, possibly also glaucoma. Thus, it is important to retest your dog(s) every 3 years.
(James Oliver2017)

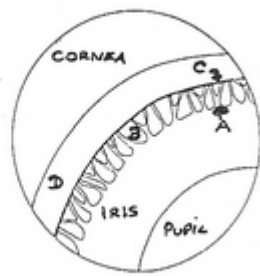
ANATOMY OF THE EYE AND THE DRAINAGE ANGLE

The drainage angle (or iridocorneal angle) is formed by the iris and cornea. Aqueous (the fluid inside the eye) is produced at a constant rate, and in a healthy eye drains out through this angle into the veins around the eye. In the normal eye, production and drainage of fluid occur at the same rate, keeping a constant pressure inside the eye. In the dog, abnormality of the pectinate ligament (which spans the angle) can lead to impaired drainage. This leads to an increase in pressure, as aqueous continues to be formed at the same rate. This abnormality can be detected by looking at the drainage angle through a goniolens, and is termed goniodysgenesis.



C = Cornea
 I = Iris
 P = Pupil
 L = Lens
 Drainage angle is shown in the box

VIEW THROUGH A GONIOLENS



A = Pectinate Ligament Fibre
 B = Space between Fibres
 C = Deep Pigment Line
 D = Superficial Pigment Band

It is suggested that for a more complete explanation of Primary Glaucoma and the Eye Testing Scheme you should look at the following links:

<https://www.bva.co.uk/Canine-Health-Schemes/Eye-scheme/>

<https://www.bva.co.uk/uploadedFiles/Content/Canine Health Schemes/Primary%20Glaucoma Final%20revised 21.07.17.pdf>

Other fact sheets are produced by the WSS Joint Health Group.
 Contact the Secretary for further information.

Dated: January 2018