

The Importance of Early Hip Screening

Michael Guilliard MA VetMB CertSAO MRCVS
Nantwich Veterinary Hospital
Crewe Road
Nantwich , Cheshire, CW5 5SF
guilliard@talk21.com

The earliest that an official BVA/KC hip x-ray can be taken is one year of age but a number of owners like to have an idea of the hip status of their pup at an earlier age. The reasons are possibly concern over movement, selection for retention of future breeding stock, or just plain curiosity.

Early screening x-rays are taken from six months of age but often the official results at one year appear worse than the screening ones and this is due to the fact that the early hips are maturing and remodelling. Also the labrum or cartilaginous lip of the acetabulum has not, at that age, become bony making the true dimensions impossible to determine on the x-ray.

All of the different hip schemes around the world exist to determine the probability of a dog developing hip osteoarthritis at a later age and so to advise on the suitability of that dog for breeding. Osteoarthritis is the painful sequel to hip dysplasia and is always progressive. Dysplasia means misshapen. It has been scientifically proven that none of the schemes that rely on a hip extended view can predict the probability of developing osteoarthritis. The BVA/KC and the German SV schemes rely on the hip extended view.

The measurement of hip joint looseness or laxity has been proven to be a measurable objective component that does predict the probability of developing osteoarthritis and this is the basis of the PennHIP scheme founded at the University of Pennsylvania and now operating in many countries. However this scheme relies on the manual positioning of the limbs for the x-ray and this raises serious health and safety issues in the UK.

Additional faults with the BVA/KC scheme are many. In the hip extended position the hips are actually tightened and this has the effect of reducing the observed laxity by up to 50%. The breed mean score published, that has decreased little over the decades, is totally meaningless as many x-rays of poor hips are just not submitted. With the PennHIP scheme failure to submit, results in the operator losing his certification making that breed mean score accurate.

The one good point about the BVA/KC scheme is that the identification of poor hips is accurate. But because laxity is not measured, about 50% of the so called good hips will go on to develop osteoarthritis and these dogs should be excluded from breeding. In fact in my opinion, **any** dog that already has radiographic signs of osteoarthritis at screening should not be used for breeding.

Hands free or non-manual positioning is now available in the UK and it is possible to measure hip laxity legally. The degree of laxity is called the distraction index (DI) and it ranges from about 0.3 to 1. A DI of 0.3 is considered normal and it means that there is 30% less coverage of the femoral head when the hips are distracted. It also means that it is most unlikely that the dog will develop osteoarthritis, whereas a dog with a DI of 0.8 may have a 90% chance of developing osteoarthritis by three years of age.

Distraction radiography can be done from **16 weeks of age** with accurate results and, according to PennHIP, breeding is recommended only from dogs with a lower DI (tighter hips) than the breed mean. Obviously selecting tight hips in both dam and sire will result in better hips in the offspring. The current breed mean distraction index for German shepherd dogs is 0.45.

Very early determination of the distraction index will also identify the dogs that might benefit from juvenile pubic symphysiodesis (JPS) surgery that increases femoral head coverage. The window for this procedure is 14 to 18 weeks of age. Perhaps this may be the subject of an article in the future!

Distraction radiography is available at Nantwich Veterinary Hospital with the fee being the same as an ordinary hip film. This costing includes the calculation of the DI and its interpretation. JPS surgery is also a procedure offered.