

INTERIM HEALTH STATEMENT

Research is ongoing and there will be an updated, potentially modified, and more complete statement when it is finished.

In the meantime, here are the links to the BVA Advice and the Kennel Club Advice regarding elbows and breeding:

<https://www.bva.co.uk/media/2791/chs-elbow-dysplasia-2019-v2-web-170419.pdf>

Advice on breeding:

The overall grade is used internationally as the basis for breeding advice. Ideally dogs with 'normal' (grade 0) elbows should be chosen and certainly dogs with 2 or 3 arthrosis should not be used for breeding.

- Also, the CHS (Canine Health Scheme), in the above link, says:
CHS recommends only breeding from dogs that have an elbow grade of 0.

<https://www.thekennelclub.org.uk/health/for-breeders/complex-inherited-disorders/bvakc-health-schemes/bvakc-elbow-dysplasia-scheme/>

Where EBVs are not available for your breed

Ideally dogs with grade zero elbows should be chosen for breeding and at least dogs with a score of 2 or 3 should not be used for breeding.

Where EBVs are available for your breed

Previously, the best advice was to ideally use dogs with an elbow score of zero, which meant that many dogs could have been excluded from a breeding plan if their scores were a significant consideration. Excluding dogs from a breeding plan can have an impact on genetic diversity

Unfortunately, as yet, we do not have EBVs (Estimated Breeding Values) for elbows for the Large Munsterlander as not enough dogs are scored. With, or without an EBV, it is important to consider the scores of the siblings, the parents & their siblings, at least. Even with a good EBV, there is still a risk of Elbow Dysplasia. And, without an EBV, two dogs of ED 0 from parents with ED 0 still can produce offspring with elbow scores and/or dysplastic puppies. In some cases, a dog with an elbow score of 1 with 0 scored siblings and 0 scored relatives, may be a lower genetic risk than a 0 scored dog with siblings and/or close relatives with scores. It is said that the best way to try to assess genetic risk is to look at the progeny, assuming that they are scored or there is information available. It is important for the health of the breed that as many dogs as possible have their hips & elbows scored.

It is thought that Elbow Dysplasia in the Large Munsterlander has a low heritability. This means that it will be harder to improve. Elbow Dysplasia is a polygenic (lots of genes), multifactorial (many factors contribute to its expression from the neo-natal period until the growth plates close) complex condition. It is very difficult, or impossible, to attribute elbow dysplasia purely to genetics.

Contributing factors are exercise (too much and anything which puts pressure on the joints for example, long walks/runs, stairs, ball launchers), weight (this is of utmost importance) and diet (too much calcium, incorrect balance of calcium and phosphorus etc). It is very important that puppies (until the growth plates have closed around 14 months plus) are kept lean (2.5-3 on the 5 point scale), do not have exercise which puts pressure on the joints and that the diet is suitable for a large breed puppy. Some diets have been found to contain too much calcium per 1000 kcal or to have had calcium at an incorrect ratio to phosphorus for a large breed puppy. Until the amounts are recommended definitively, please check with the vet or the manufacturer (this includes raw and

homemade diets). All dogs have 'dodgy' genes; it is best not to double them up and to breed out as much as possible.

Whilst considering elbows for breeding, it is important not to forget about hips and temperament etc (eyes must be tested and HUU carriers must only be bred to HUU Clear). The average/median hip score for the breed is 8 (total). It is thought that this is artificially low due to not enough dogs being scored. It is very important when placing importance on one health issue, particularly in a small gene pool, that one doesn't forget about another health issue or one risks exacerbating either the issue one is trying to improve, exacerbating another health issue, or even introducing a completely new health issue.

End of Interim Statement

February 2020