

At the recent Epagneul Breton National Specialty, it was announced that the club had adopted a new policy concerning Hip Dysplasia and the practice of breeding dogs. This was a profound step, as the subject had often been talked about but never addressed in an open forum.

The policy essentially is a set of guidelines that if used by breeders will help to minimize the prevalence of Canine Hip Dysplasia (CHD) within the Epagneul Breton breed. This is a tool that has been utilized by other breed clubs, including the SCC (French Registry) for generations. Some, like the SCC and CEB-France use a system that “Recommends” dogs for breeding, and only dogs with a certain score (currently ‘B’) should be bred. This leaves the decision up to the owner whether or not to breed. Others such as the German breed club- Club fur Bretonische Vorstehhunde e.V., who utilize the breed warden format, have set standards that are absolute, if a dog does not rate a certain score, they can not be bred regardless of it other accomplishments.

What does all this mean? How does it affect our dogs? To begin understanding, how this works, you need to understand what Canine Hip Dysplasia is and how it affects dogs. The word Dysplasia is derived from Greek, dys- abnormal, plassein- to form. It is rated partially on the amount of subluxation-looseness and partially the onset of Degenerative Joint Disease (deterioration of articular cartilage and formation of new bone within the joint). Hip Dysplasia (HD) is a developmental condition of multifactorial etiology, hereditary with a polygenic (multiple genes) nature. Phenotypic evaluations are used to determine a dogs’ predisposition to this genetic disorder. HD has been around as long as the species, in the wild it is controlled by natural selection i.e.: only the strong will survive.

HD was first being discussed as early as 1937 but was given little attention by either the veterinary or breeding community. Simply put it was controlled by only breeding only the strongest candidates, somewhat mimicking natural selection. Even into the 1950’s and 60’s little concern was given to HD, until the rapid expansion of commercial dog foods generated the belief that high calorie diets were leading to joint disorders. That being said, over nutrition will make a bad situation worse, but will not cause HD itself. The 1960’s saw the first proactive steps by the veterinary community to address HD. The Orthopedic Foundation for Animals was established Aug 1, 1966 with Dr. Wayne Riser as director at the University of Pennsylvania at Philadelphia (home of Penn-Hip). Penn-HIP (Hip Improvement Program) was developed at the same facility in 1983 by Dr. Gail Smith. Both programs utilize radiographic evidence to determine the possible onset of DJD.

The Orthopedic Foundation for Animals (OFA), currently under the direction of Dr. Greg Keller, uses the “hip extended” view to evaluate hips. This is best described as a “superman” view as the dogs legs are extended behind the dog as it is lays in the dorsal recumbent position (upon its back). The spine and legs should be straight, with the patella superior to the knee joint. Incorrect placement could result in an inaccurate interpretation. OFA considers the following characteristics in evaluating a radiograph (x-ray) : Craniolateral acetabular rim, cranial acetabular rim, femoral head shape and smoothness, fovia capitus (where the teres ligament is inserted), acetabular notch, caudal acetabular rim, dorsal acetabular margin, junction of femoral head and neck, and the trochanteric fossa ( where the Morgan line can be found). After being sent to OFA the x-ray is then sent to a panel of three veterinarians for evaluation, these are done

independently by each vet and returned to OFA. Each vet gives his/her rating based on the above criteria and consensus is made. The ratings are: Excellent, Good, Fair (given when the radiograph shows either joint laxity or inward deviation of the acetabular rim), Borderline (given when there is no clear consensus), Mild HD, Moderate HD, Severe HD. Dogs with “Passing” ratings are given an OFA number that includes its age at evaluation, sex, and rating.

Penn-HIP uses three x-rays to determine the amount of laxity in the hip joint. They are the Distracted, Compression, and Hip extended views. First the extended view is taken, while that x-ray is being developed, the dogs legs are spread and the femoral head pressed toward the socket to mimic the pressure exerted while the dog is standing, then the distractor unit is applied that works like a wedge to exert outward displacement pressure on the femurs. Measurements will be taken of the joint and a “Distraction Index (DI)” will be given. Basically, the lower the DI, the tighter the hips are, the tighter the hips, there will be less possibility of joint remodeling, hence healthier hips.

How do we use this information and does it make a difference? Whichever system used, it is what we do with the information that makes the difference. To ensure that a DJD ( which is the crippling effect of HD) is minimized all owners must make a conscious decision to first have their dogs evaluated, then decide whether the dog should be used for breeding. This is not just for breeders. The most useful information that can be gained is through the vertical pedigree. That is how the siblings correlate. With HD being polygenic in nature, we may never be able to isolate the specific gene that leads to dysplastic dogs; we can however lessen the probability by determining which dogs are prone to passing the phenotypic traits that lead to DJD. Next, is how does it all make a difference. Many will tell you that even breeding a dog rated Good to Good or Exe to Exe could still produce dysplastic dogs. True, however there is less likelihood that this may occur that the chance of a Mild/Mild breeding producing Exe hips. Consider for a moment the single mating of two mildly dysplastic dogs that produce seven puppies. If five of those puppies are bred and each produce six puppies, that is now thirty dogs in two generations, all carrying the recessive gene for Osteoarthritis ( the ultimate result of DJD), imagine the impact of 4-5 generations.

In the end the most important step in the whole process is education. As responsible dog owners and lovers of our breed we must always be respectful of the part we play in the future. It often seems a daunting task to reach our goals and the big fear that the rest of the dog may be lost looms overhead, it won't so long as those with desirable abilities as well as desirable qualities are used to propagate the breed. The keys success is first being proactive by having your dogs evaluated by either OFA or Penn-HIP, and most importantly, honesty. Without the whole picture we will know nothing of the genetics of our dogs, there is nothing to be ashamed about if a dog does not rate good, or has a high DI, it is information that can be used to protect future generations against the crippling effects of DJD. The science is only as good as the methods by which it is used.

Science begets knowledge; opinions are the parents of ignorance.  
Hippocrates, 360 BC

For more information on Hip Dysplasia and the genetics behind it I recommend the following volumes:

Canine Hip Dysplasia and other Orthopedic Disorders by Fred Lanting

Genetics- An introduction for Dog Breeders by Jackie Isabell

Both were used extensively in my own education and in writing this article.