

GRUNFELD GERMAN SHEPHERDS

Hip Dysplasia Latest News

by Fred Lanting

A research study funded by Morris Animal Foundation with grants from The Seeing Eye, Inc. and the Golden Retriever Club of America has raised quite a few eyebrows. The data, presented at the 27th Veterinary Orthopedic Society meeting, held in France in 2000, concerned Golden Retrievers radiographed for signs of hip joint laxity. Average age was 11 months. Three views were made, including the traditional hip-extended one used by OFA and almost every control registry in the world, and the PennHIP distraction and compression views that more accurately reveal joint looseness.

In the hip-extended view, the measure of observable laxity was made using the Norberg Angle (NA), and in the view with the femoral heads levered out from the sockets as far as they will go, the measure used is the distraction Index (DI) developed by PennHIP for early and accurate detection of that most important HD risk factor. The study was to determine heritability estimates for the different types of hip scores in this breed. Heritability is a ratio that refers to how much effect "selection pressure" (choices of breeding partners, mostly) has on genetic progress; it is expressed by a number between zero and one (0 - 1). The higher the number, the faster one can make progress (in reducing HD, for example). These heritability numbers vary considerably from one diagnostic technique to another.

The heritability estimate of the subjective hip-extended scoring method was 0.22 and this was not statistically different from zero (0). Remember, when we use the word "statistically" we are talking about a specific mathematical science, not the very loose use of such words by the general public. The heritability estimate for the only objective part of the hip-extended view (NA) was 0.46, a big improvement. Both it and the 0.64 heritability estimate of the DI method are statistically significant.

Conclusions: Using DI, genetic change (progress in your hip improvement program) will occur 40% faster than you would expect using the NA, and a whopping 290% faster than by using the OFA-type hip-extended subjective method. Further calculations and comparisons showed that the square roots of these heritability estimates are important: the subjective hip-extended figure here is 0.47, which means that if you use just that knowledge to choose breeding partners, you have no more chance of making a lucky decision (improvement in hips) than if you had just flipped a coin. The DI square root of 0.8 is twice as high, and your odds of making a wise move armed with such knowledge are vastly improved. When you factor in the relatively new and until now obscured calculation of Breeding Value or Zuchtwert, you can get even more accuracy and faster progress. The Seeing Eye has been using BV for years, and the largest breed club in the world, the SV (GSDs) has begun publishing ZW numbers for all breeding dogs, active or potential. I think when the more sensible leaders of the Golden club sees these data and conclusions, they will want to implement a BV-ZW system as well as encourage PennHIP DI use by breeders.

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