HIP DYSPLASIA AND THE CLUMBER SPANIEL

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Hip dysplasia (HD) is an inherited trait seen in the dog and in other species. It has been known in the dog since the 1930s and has received prominence in canine literature since the early 1960s. Very many scientific papers have been written in the subject, and several books. Some that might be available to dog breeders are Willis (1976), Hutt (1979), Foley et al. (1979), and Lanting (1981), with a comprehensive cover in Willis (1982, in press).

It is generally accepted that HD is inherited in a complex fashion by polygenic mechanisms. Estimates of the heritability (the degree to which HD is under additive genetic control) range from 25% on American OFA data, to 40% from Swedish army data, through to 47% from my own work on some 2500 German shepherd dog (GSD) hip scores. Heritability varies with breed (the above are all GSD data) and population. Estimates on other breeds have not been made but are likely to be similar to those in GSD except where the incidence of HD is very low (as in the Siberian Husky).

Although genetic in origin, HD is influenced in terms of its expression by non-genetic factors. Thus age will lead to increasing score (worsening hips) under the BVA/GSDL [British Veterinary Association/GSD League] scheme. We also know that weight is involved with rapidly growing animals being more at risk. In general, heavy breeds are more seriously affected but this is by no means always true.

Data on breed incidence are largely lacking in this country but the BVA/GSDL scoring scheme has examined 2500 GSD in the past three years and found an average score of about 17 (range 0 to 108 with low numbers being better). This is little different from mean scores in breeds like the Welsh springer but as yet only a dozen of these have been examined. Other breeds – on small samples – appear better than this while yet others are obviously worse.

One cannot say where the Clumber spaniel stands in HD terms as not many dogs have been examined and, in any event, they have no access to the scoring schemes. It would, however, seem reasonable to assume that the breed is not devoid of HD problems. As spaniels go, it is a heavy breed with weight ranges in the standard being 25 – 31.8 kg for males and 20.4 – 27.2 kg for females. These are not markedly below GSD weights in a much smaller dog in stature terms. One is thus dealing in the Clumber with a heavy animal and thus potentially one with rapid growth in early life and potential HD problems.

I am given to understand that the Kennel Club (KC) has been asked to increase the Clumber spaniel weights (in the breed standard) from the present figures to: males, 35.3 – 45.4 kg; females, 27.2 – 36.3 kg.

These represent enormous increases. The male maximum size at present is proposed as being below the future minimum, while the present female maximum is proposed as the future minimum. In effect, maximum weight is increased to 43% above the present maximum for males and 33% in females. Such weight increases will be accompanied by increased rates of growth in early life, increased stress on bones and joints and are <u>certain</u> to lead to increased HD risk and incidence. It is highly likely that other bone/growth defects will ensue and we shall see elbow trouble, spinal problems and other bone defects increasing in this breed.

The forces working on the femoral head are the sum of the forces working on the lever arms (one the distance from the greater trochanter to the centre of the femoral head, and the other from the femoral head to the body axis). This is some three to four times the body weight. Thus in a dog weighing 31.8 kg the force will be some 95.4 kg if one leg is propelling the body forward. If we increase weight to 45.4 kg this force will increase to 136.2 kg. The force will further increase if the dog accelerates as would happen in jumping. Thus a 30 kg dog accelerating at 2 metres per second would have the hip force increase to 180 kg and in a 45 kg dog the force would exceed 200 kg.

In my view the Clumber spaniel is numerically small enough to have severe problems with regard to inbreeding and if you alter the standard to increase weight at all, still less by the sums envisaged, the working qualities will be impaired because the motility will be adversely affected and the hip status of the breed will decline.

Rather than seek to increase weight, breeders should contemplate reducing existing values so that maximum weights drop by some 5 kg and breeders should seek to introduce some hip scoring scheme to combat any HD existing.

In my considered opinion the proposals show limited understanding of the biological consequences to the individual dog and to the breed as a population. They must be rejected by the KC and I, as a geneticist, would seek to ensure that the proposals fail.

In case my qualifications should be questioned I will give them. I am a BSc in agriculture (Durham University, 1956) and have a PhD in animal genetics from the Institute of Animal Genetics (Edinburgh University, 1960). From 1960 – 1965 I was geneticist to the Milk Marketing Board. From 1965 – 1972 I was head of the Animal Science Division at the Instituto de Ciencia Animal, Havana University, and from 1972 to date senior lecturer in animal breeding and genetics at Newcastle University.

I am a member of the British Society of Animal Production, the American Dairy Science Association and the American Society of Animal Science. I am the author of some 70 scientific papers in various animal genetic/production fields and author of three books. I have experience in dogs since 1953. I am a council member of the GSD League and genetics advisor to that body as well as to the British Briard Club and the KC/BVA Standing Committee. I am a KC member (since 1972) and a CC judge of GSD, judging in the UK, Eire, South Africa, Australia and Barbados. I control the hip scoring schemes in genetic terms.

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18 March 1982

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