Hip Dysplasia

Meaning
A badly formed joint (Willis). The degree of malformation can vary from unnoticeable, (i.e. only detectable on X-Ray), to sufficiently severe to cause discomfort, and in very extreme cases, even temporary or permanent lameness requiring veterinary treatment. The normal hip consists of a cup-shaped acetabulum into which snugly fits the ball-shaped head of the femur. In a Dysplastic dog due to the relative shapes and sizes of the bone processes, the joint lacks the necessary detailed fit at one or more points on the head of the femur and at the edges of the cup in which it rotates, and the cup, or Acetabulum, is shallower. The dog may later be subject to secondary changes in the joint due to friction, which can sometimes result in further damage. Poor hipped animals tend to be more prone to osteo-arthritis when elderly.

Diagnosis
Definitive diagnosis can only be certain by X-Ray. A youngster showing stiffness can be diagnosed from five months on, but will require a follow-up X-Ray at over twelve months, the KC/BVA Scheme for hip scoring requires the dog to be at least a year old. Palpation by the vet may indicate general looseness or a reduced degree of swing at the joint, but without X-Ray this has proved too
ambiguous a method of diagnosis. (Willis et al.)
The KC/BVA scheme will, for a fee, grade specially prepared X-Rays, compute a 'hip score' and publish the results in the Kennel Gazette. Eight different features making up the joint are graded from 0 to 6 plus one graded from 0 -5 on each hip, giving a hypothetical 'worst' total hip score of 106. The lower the number, the better the overall structure of the hip joints.

**Symptoms**
Discomfort and/or stiffness may be observed in an affected dog, particularly when it has just got up from rest, or a day or so after unusually vigorous, unrestrained exercise. If a leg is favoured or carried, muscle may be under-developed. More usually, both left and right joints are affected, and stiffness may be detected in the gait. A degree of Hip Dysplasia (H.D.) may be radiographically diagnosed by X-Ray, without clinical symptoms. This is termed Radiographic Dysplasia.

**Treatment**
A vet may temporarily treat with anti-inflammatory drugs, to reduce joint swelling and pain. This must be combined with rest, in a puppy pen if necessary, as damage might ensue without the warning of discomfort. Excessive long term 'bed-rest' leads to muscle wastage, which can even lead to secondary slipping patellas. Exercise must be built up very gradually, on the lead, in a
straight line, on a hard surface. (Not galloping, twisting and turning or 'bunny hopping'.) A few minutes at a time is enough to begin with, several times a day; resting for a few days and resuming with shorter sessions if discomfort is seen. No conclusive evidence whatsoever exists to suggest that H.D. may be intrinsically prevented or cured by vitamin supplements though, as part of a balanced diet, they may well play a part in reducing the degree to which it manifests itself. Overfeeding accentuates the affect of H.D. Ideally the puppy should be kept slightly lean. (Willis et al.)

**Breeding**

Obviously affected animals showing clinical symptoms should never be bred from. It is inadvisable also to breed from animals diagnosed by a specialist as radiographically dysplastic. To be of any practical value to the breed, the useful interpretation of KC/BVA Hip Score data for use in determining breeding strategy requires that sufficient animals be tested, at random, to allow the calculation of a statistically viable mean score - the Breed Average Score. This can then be used as a yardstick when deciding upon what scores to grade 'good' 'intermediate' 'moderate' and 'poor'. Hip scoring is a useful tool when assessing the breeding potential regarding hip status of outwardly apparently unaffected animals, and in planning matings. In a numerically small breed
such as the Affenpinscher, Willis does not advocate drastic culling of otherwise outstanding animals from breeding programmes purely on the basis of a moderate or intermediate hip score, and at present we do not have sufficient representative animals scored to have a breed average with which to compare scores. It is to be expected that the permissible breed average for an Affenpinscher will be a far higher figure than that recommended for large breeds, as Toys are unaffected or only lightly affected by the sort of scores which produce clinical symptoms of H.D. in larger breeds. However, monitoring scores can prevent unwise 'doubling up' on moderate hips, and ensure a breed problem is not created for the future. At present the Affenpinscher does not have an appreciable breed problem with Hip Dysplasia, as only a very small number have presented with symptoms. Ideally, at this stage in the breed's development, it is desirable that at least one parent exhibits a low (i.e. 'good') score, and the other, if it only has a 'moderate' or 'intermediate' hip grading, (i.e. a higher numerical score) should have other good qualities to justify its use for breeding. The conformation of the hip is additively polygenetically inherited, with a heritability varying between 25% and 50% depending on the individual animal. By following up the scores of progeny of scored animals, and noting whether the parents were mated to 'better'
or 'worse' scoring dogs or bitches, it is possible to assess which individuals are capable of effectively improving, on average, the hip quality in their progeny, in comparison to that of the other parent, when mated to partners of only 'moderate' hip status, (i.e. with higher numerical scores). Such beneficial animals, particularly if dogs at public stud, would be of most use to the breed if allowed to mate with not just other numerically low (i.e. 'good') hip scoring animals, but with a range of bitches outstanding in other departments, but exhibiting numerically higher (i.e. only 'moderate' or 'intermediate' quality) hip scores. In this way it is possible to gradually improve the overall breed average for hip score, without losing general quality and type. It may seem tempting, to deal with the question of hip status 'once and for all', by mating together only the numerically low (i.e. 'good') scoring animals, but with an effective national breeding population of approximately 200 or less, radically different breeding strategies, geared to a more gradual, general improvement are required, rather than those appropriate for breeds numbering thousands. Conservation of desirable genetic material is also extremely important, as even if a good feature co-exists with undesirable features in an individual, it may be possible to segregate it out and recombine it with better features in some of the progeny, or in that of future generations.
Jettisoning any appreciable number of the breed's current breeding stock, with consequent reduction of all-round quality and loss of other important characteristics, is an instant route to mediocrity, if not to extinction.

**Further Reading**
Genetics of the Dog - Malcolm Willis
Practical Genetics for Dog Breeders - Malcolm Willis

**BVA/KC Hip Scoring Results for Affenpinscher 1992 - 2008**

The Affenpinscher Club is interested in hearing of any dogs who have had this condition diagnosed.