

HIP DYSPLASIA

What is hip dysplasia?

Hip dysplasia is defined as a deformity of the coxofemoral (hip) joint that occurs during the growth period. Hip dysplasia is caused by a variety of factors including genetic, overweight in the young puppy and over exercise, all of which contribute to a poorly fitting hip joint. As the dog walks on this joint, arthritis eventually develops, causing pain in the joint. The degree of lameness that occurs is usually dependent upon the extent of arthritic changes in the hip joint.

Is this found in certain breeds of dogs?

Most breeds of dogs can be affected with hip dysplasia although it is predominantly seen in the larger breeds of dogs, such as the German Shepherd, St. Bernard, Labrador Retriever, Old English Sheepdogs, etc. There is equal distribution of the disease between male and female dogs.

What are the clinical signs, and when do they occur?

The typical clinical signs of hip dysplasia are weakness and pain in the hind legs, lack of co-ordination, and a reluctance to rise. Wasting of the large muscle groups in the hind legs may eventually develop. Most owners report that the dog has had difficulty in rising from a lying position for a period of weeks or months; lameness and pain subsequently develop. Again, the severity of signs and progression of the disease usually correlate with the extent of arthritis in the joint. Clinical signs can occur as early as 4-6 weeks of age, but most dogs manifest the disease as a lameness around one to two years of age. Dogs with mild hip dysplasia and minimal arthritis may not become painful and lame until 6-10 years of age.

How is it diagnosed?

Tentative diagnosis of hip dysplasia is made on the basis of history, breed, and clinical signs. A large breed dog that has been slow to rise for several months and now is lame is a high suspect for hip dysplasia; a dog which refuses to rise should also be considered a candidate. Because the clinical signs may mimic other diseases, final diagnosis of hip dysplasia can only be made on the basis of specific radiographic (x-ray) findings. To obtain the proper radiographs, dogs must be carefully positioned on the radiographic table. This procedure requires the use of a short-acting anaesthetic or heavy sedation. The radiographs are evaluated for abnormal shape of the hip joint and for degenerative changes (arthritis).

How is it treated?

The degree of clinical signs and arthritic changes in the joints determine the specific approach to therapy. Treatment of hip dysplasia may involve the use of drugs or surgery, or both. The options are as follows:

1. Anti-inflammatory drugs:

Several drugs will give relief from pain. Early in the course of the disease drugs which protect the cartilage lining of joints may be effective in limiting pain. Also non-steroidal anti-inflammatory drugs (NSAIDs) may work well in some dogs. In others corticosteroids are used. Most drugs have some side-effects and therefore the most suitable drug for your pet may require close co-operation between you and your veterinary surgeon. Unfortunately, it is not possible to predict which dog will respond to which drug. Therefore, a series of trials may be needed to find the most effective one for your dog.

Extreme caution is advised when these drugs are given to dogs with a history of kidney disease or with impaired kidney function. Many of these drugs have an adverse effect on blood flow to the kidneys and can lead to kidney failure. This does not appear to be a concern if kidney function is normal.

Anti-inflammatory drug therapy is most often used in older dogs, in dogs that did not get good relief from surgery, or in dogs for which surgery is not feasible. Both corticosteroids and NSAIDs may be contra-indicated in dogs with a history of gastric ulceration. However compromise may sometimes be reached by combining the analgesic/anti-arthritis drug with an anti-ulcer compound.

2. Surgery:

There are four main procedures: pectineal myotomy (muscle cutting surgery), femoral head ostectomy (ball removal), triple osteotomy, and total hip replacement.

Pectineal myotomy is a relatively minor procedure that involves cutting a small muscle that puts pressure on the hip joint. It results in no loss of leg function and gives good to excellent relief in 80-90% of dogs. If both hips are abnormal, both hips may be operated at the same time. The dog recovers from surgery in one to two days. However, this procedure does not stabilise the hip joint or prevent progression of arthritic changes. Within a few months to several years, pain and lameness will return.

Femoral head ostectomy (FHO) is another choice. The hip joint is a ball and socket joint. FHO is the removal of the ball part of the joint. This gives excellent results in small dogs because a functional "false joint" forms. However, some large dogs may not form this "false joint" very well. This procedure is usually used in large dogs if arthritis is very severe, if the hip dislocates, or if the expense of the other procedures is prohibitive.

Triple osteotomy is a procedure in which the pelvis is cut in three places around the hip joint. The bone is rotated to create better alignment with the femoral head (the ball). It is reattached so that the joint functions in a more normal fashion without looseness and pain. This should only be performed in a dog with no arthritic changes in the joint and is generally reserved for younger patients.

Total Hip Replacement (THR) is possible, as is done in humans. The hip joint is replaced with an artificial ball and socket often made of plastic and stainless steel attached to the pelvis and femur in place of the abnormal joint. It is another expensive procedure, but it may give many years of pain-free use of the hips. Although the intent is for the transplant to be permanent, the new joint may loosen after a period of time.

I am considering breeding my dog. Can anything be done to prevent hip dysplasia in the puppies?

Research has shown that the cause of hip dysplasia is related to a combination of genetic and environmental factors. The disease is known to be an inherited condition and the genetics of hip dysplasia are extremely complicated. In addition, environmental factors such as overfeeding and excessive exercise can predispose a dog (especially growing puppies) to developing hip dysplasia. Because the inheritance of the disease is so complicated, many questions remain regarding eradication of the disease. However there are several practical things you can do to ensure that the incidence of the disease is reduced.

1. The Australian Veterinary Association runs a scheme (The AVA/KC Hip Dysplasia Scheme) and the New Zealand Veterinary Association also runs a scheme (The NZVA Hip Dysplasia and Elbow Scheme) under which your dog's x-rays will receive a score from an expert. Since in some HD prone breeds it is virtually impossible to find an animal that is hip dysplasia free, the object is to ensure that you breed from a dog whose score is better (lower) than the breed average score. In this way the chances of reducing the incidence of the disease are greatly increased. The procedure is as follows:
 - (a) The dog must be over one year old and can be radiographed by your own veterinary surgeon.

- (b) General anaesthesia is necessary in order that correctly positioned plates are obtained.
 - (c) The x-rays are then submitted to the Australian Veterinary Association or the New Zealand Veterinary Association together with the appropriate fee and the hips are assessed by a veterinary radiologist and a score awarded and reported to the veterinary surgeon.
 - (d) The higher the score, the worse the hips.
2. When purchasing a puppy it is always worthwhile ascertaining whether the parents have been radiographed under the AVA/KC or the NZVA scheme and if so, what their respective scores were. Even if you did not do this at the time and are contemplating breeding from your dog, it is still worthwhile contacting the breeder to see if you can obtain this information. However it should be borne in mind that because heredity is not the only factor involved, there is still a chance of parents with normal hips throwing a puppy with hip dysplasia. Once you have obtained the necessary information, including the hip score, do discuss any breeding programme with your veterinary surgeon.

Consider a feeding programme to slow growth

There is a growing body of evidence indicating that dogs that grow very rapidly are more likely to have hip dysplasia. Many authorities recommend feeding an adult-type food to puppies of high risk breeds so their growth is slower. They will still reach their full genetic body size, but just not as rapidly.

Avoid excessive exercise in a growing puppy. Any abnormality in the structure of the hip joint is magnified if excessive running and jumping occur. It is not necessary to treat your puppy as if it were handicapped, but long sessions of running or chasing thrown objects can be detrimental to joints.