

CANINE 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 a hereditary condition that creates a poorly fitting hip joint. As the dog walks on this joint, arthritis will eventually develop, 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, Pointers, and Setters. 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 rear leg pain, incoordination, and a reluctance to rise. Wasting of the large muscle groups in the rear limbs 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 lameness around one to two years of age. Dogs with mild hip dysplasia and minimal arthritis may not experience pain and lameness until they reach 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 highly 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 anesthetic. 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. Most commonly NSAIDs (non-steroidal anti-inflammatory drugs) specifically designed for veterinary use, such as Rimadyl, Deramaxx or Metacam, are prescribed for dogs. These medications have been shown to be both safe and effective in the majority of dogs. Aspirin may work well for some dogs, but is often very harsh in the stomach and can easily lead to ulceration. Other steroidal (cortisone) and non-steroidal drugs may also be used.

Although these medications are generally safe for use in healthy dogs, rare complications can lead to serious liver or kidney damage in some dogs. For this reason it is important to closely monitor a dog when starting these types of medications. Typically blood will be drawn prior to starting treatment to

ensure there is no evidence of underlying disease. Medication is then given at the maximum dosage for 7-10 days. Repeat blood tests are then performed to ensure there are no signs of damage. In most cases where there is a reaction, changes will be evident that indicate the medication should be stopped before permanent damage occurs.

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.

2. **Surgery:** There are three main procedures: femoral head ostectomy (ball removal), triple osteotomy, and hip joint replacement.

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 typically only done in dogs under 1 year of age. It is an expensive procedure.

Hip joint replacement is possible, as is done in humans. A stainless steel ball and socket are attached to the pelvis and femur in place of the abnormal ones. 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.

Can anything be done to prevent hip dysplasia in 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.

Here are some practical suggestions whether you have a new puppy or are planning to breed your dog:

1. Have your dog radiographed before breeding to be sure the hips are normal. If they are not, this dog should not be bred. When purchasing a puppy, ask to see the hip certification for both parents. If these are not available consider a different breeder.

There are currently two types of radiographic tests available to grade degree of hip dysplasia in dogs.

- OFA (Orthopedic Foundation for Animals): For this test a single x-ray of the hips is taken using a short acting anesthetic. This x-ray is then sent to specialists at the Orthopedic Foundation for Animals where the conformation of the hips is given a grade of Normal (Excellent, Good, Fair), Borderline or Dysplastic (Mild, Moderate, Severe). Only normal animals should be bred. Additional information is available on the OFA website (<http://www.offa.org/index.html>).

- PennHIP: Doctors must be specially trained to perform this test. The dog is sedated and an instrument is used to obtain very specifically positioned x-rays. These are then sent to the PennHip analysis center where a measurement is made of the “distraction index” of each hip, the lower the number the less laxity or looseness in the hips. Based on this measurement recommendations about breeding can be made. More information is available on the PennHIP website (<http://research.vet.upenn.edu/pennhip>)

2. Consider a feeding program 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 pet food companies now produce a “large breed puppy” food that contains all the vital nutrients for health, but is formulated to maintain slow steady growth.

3. 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.