

Canine Hip Dysplasia (CHD)

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 guardians 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 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 (xray) 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:

Anti-inflammatory drugs. Several drugs will give relief from pain. Aspirin or acetaminophen may work well in some dogs. Other steroidal (cortisone) and non-steroidal drugs may also be used. Most have some side-effects and most require administration once or twice daily. Many dogs have severe stomach irritation to ibuprofen, so this drug is not recommended. Unfortunately, it is not possible to predict which dog will respond to which drug. 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 marginal 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. As alluded to above, dogs with a history of ulcers are also at risk for complications. Your veterinarian can determine the risk for your dog. 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.

Surgery: There are four main procedures: pectineal myotomy (muscle cutting surgery), femoral head ostectomy (ball removal), triple osteotomy, and hip joint 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 on at the same time. The dog recovers from surgery in one to two days. However, this procedure does not stabilize the hip joint or prevent progression of arthritic changes. Within a few months to several years, pain and lameness will return. This procedure is especially recommended in older dogs. *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. 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. 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.

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.

Here are some practical suggestions:

- 1.** Have your dog radiographed before breeding to be sure the hips are normal. If they are not, this dog should not be bred. Adopt, don't breed.
- 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 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. Some dog food manufacturers are now making puppy foods for large breed dogs. This is essentially the same approach as feeding an adult food because these puppy foods are formulated for slower 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 he were handicapped, but long sessions

of running or chasing thrown objects can be detrimental to joints.

What does it mean to have the hips certified as normal?

The Orthopedic Foundation for Animals (OFA) is an organization established for the purpose of standardizing the evaluation process of canine hip radiographs. The OFA consists of a board of certified veterinary radiologists who are skilled in detecting hip dysplasia. If the radiographs submitted to the OFA are declared normal, the dog is issued an OFA certificate number indicating that he or she has normal hip confirmation. The OFA requires that dogs must be a minimum of two years of age to be certified. Many breeders require that a dog must have an OFA certificate before breeding is allowed.

Another hip evaluation program is called the PennHip method. Radiographs are made of the anesthetized dog in such a manner as to place outward force on the hip joints. This can reveal looseness in the joints that may elude detection by the more standard radiographic methods. It is also useful in identifying hip dysplasia in puppies as young as four months of age. Although any veterinarian can make the appropriate radiographs and submit them for OFA certification, the PennHip method must be performed by a veterinarian specifically trained and certified in this procedure.

How does OFA know that the hip radiographs belong to my dog?

The radiographs must be imprinted with identification information about your dog at the time they are made and developed. This procedure creates a permanent mark on the radiograph. In addition, OFA now requires that certified dogs be permanently marked with either a tattoo or a microchip implant. The implant process is simple and very effective. A tiny microchip is implanted under your dog's skin through a special injection needle. A special scanner can detect these chips through the skin. They can identify the dog and the guardian through its code number and a registry system. This is also an excellent means of getting lost dogs back home because the registry system is national in scope.