

## ***What Is Canine Hip Dysplasia?***

The term hip dysplasia means bad formation of the hip and describes a developmental disease of the hip joints in dogs of many different breeds. Unsound hip joints are a common problem in working and sporting breeds and hip dysplasia is a serious problem in any dog that is to be used for breeding or trained for a demanding activity.

**SYMPTOMS** - Signs of hip dysplasia cannot be detected in the newborn puppy, but signs may appear in the rapid growth period between four and nine months of age. Signs of the disease can vary widely from slight irregularities of gait to crippling hip disease. Improvement or even apparent disappearance of lameness can occur as the dog matures, but arthritis of the hip joints is usually present in the older dog with hip dysplasia.

**DIAGNOSIS** - The best way to determine the condition of the hip joints of a dog is by good x-ray examination. Sedation or a short acting anesthetic may be necessary to restrain the dog so that a diagnostic film can be made.

**TREATMENT** - Your veterinarian may suggest rest and supportive care as a medical treatment during the acute phase of the disease. Surgical treatment for the relief of pain may be of value if discomfort persists. Moderate and regular exercise, control of excessive weight and anti-inflammatory drugs are helpful in the management of arthritis associated with hip dysplasia in the older dog.

**GENETICS** - Hip dysplasia is an inherited defect with polygenic mode of inheritance. The degree of heritability is moderate in nature and the condition of the hip joints can be modified by environmental factors such as overnutrition and excessively rapid growth. As with any qualitative trait, hip joint conformation can range from good to bad with all shades in between.

**CONTROL** - Inasmuch as faulty hip joints are not readily observable, dogs intended for breeding should be x-rayed when mature to select for sound hips. Two years of age is considered to be the minimum age for radiographic certification of desirable conformation with respect to canine hip dysplasia. Dogs with hip dysplasia should never be used for breeding!

**PennHIP™** - A revolutionary new procedure for early detection of hip dysplasia has been developed at the University of Pennsylvania. The laxity, or looseness, of the hip joints is measured by x-raying the anesthetized dog while in a position in which the femoral head is forcibly displaced from the acetabulum. The procedure is completely harmless to the dog, and can be used on puppies as young as 16 weeks. The degree of laxity is an excellent predictor of hip dysplasia later in the dog's life.

For more information contact:

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# ***PennHIP™ Early Identification for Canine Hip Dysplasia***

## ***What is PennHIP?***

PennHIP™ is a collaborative effort having many objectives, the primary one being to reduce the frequency of hip dysplasia in all breeds of dogs. Based at the University of Pennsylvania School of Veterinary Medicine, PennHIP is an organized cooperative effort with nearly 100 qualified veterinarians throughout the country. Participating veterinarians received specialized training and passed a series of quality-assurance exercises before being certified as collaborators in the PennHIP system.

## ***History of a New Technique***

Over the past 10 years, an improved diagnostic method for the detection of canine hip dysplasia (CHD) has been developed and tested at the University of Pennsylvania under the direction of Dr. Gall K. Smith. The new method has superior accuracy to the conventional radiographic method and can predict the susceptibility to CHD *in dogs as young as sixteen weeks*. As a collaborator, your veterinarian will be working with PennHIP in two very important ways. First, he/she will be providing a direct service to you to inform you of the CHD status of your dog. Second, your veterinarian will be forwarding the radiographic results from your dog, and others like it, to the University of Pennsylvania for storage in a large nationwide database. The data will be accumulated and analyzed at Penn where the information is used to increase our understanding of CHD as well as to monitor PennHIP's progress in decreasing the unacceptably high frequency of CHD.

## ***General Information***

It is generally agreed that hip joint laxity, or the degree of "looseness" of a hip joint, is directly related to whether a dog will develop degenerative joint disease (DJD) and thus CHD. Quite simply, the looser the hip, the greater the chance of developing hip dysplasia. Both the standard hip-extended method of radiography that we are all familiar with (the OFA method) and the PennHIP method incorporate hip joint laxity into their analysis, however, how correctly each method measures this laxity is quite different. The new technique, called the Compression/Distracton method, or simply the C/D method, has proved itself to be diagnostically superior to the conventional method. The major differences of the two methods are that in the new C/D method, the legs of your dog are placed in a normal weight-bearing orientation and a small harmless distractive force is applied to the hips while the radiograph is made. Both procedures require the dog to be deeply sedated or anesthetized.

## ***Why ?***

After 10 years of careful scientific scrutiny, in 1993 PennHIP was established to transfer the new technology to multiple centers throughout North America. Clearly we do not profess to know all of the answers about CHD and therefore we are constantly evaluating our information for new insight into this most frustrating disease. The standard hip-extended method, on the other hand, has been in use for 30 years, however, there have been few scientific studies published as to its true diagnostic worth.

## ***Benefits***

The PennHIP diagnostic technology benefits both you and your dog. This method can be performed on dogs as young as sixteen weeks of age, as opposed to 2 years using the standard technique. Breeders and dog owners can get an early estimate of their dog's hip integrity, whether the dog is intended for breeding, work, sport, or companion. Because CHD is a genetic trait, its early detection can aid in the selection of suitable breeding stock. We project that as the average breed laxity decreases, so will the incidence of CHD.

Laxity data will be stored in a large 'closed' medical database. PennHIP maintains strict confidentiality on all dogs in the database unless specified otherwise by the owner. Owners may opt to make their dog's hip score public, (open database) meaning that any interested breeder or pet owner would have access to this information through PennHIP. For example, a breeder with an excellent, tight-hipped, breeding candidate could learn of other tight-hipped dogs in this 'open' portion of the database.