

## Pennhip

**Canine Hip Dysplasia (CHD) afflicts millions of dogs each year and can result in debilitating degenerative joint disease (DJD) of the hip. It is estimated that more than 50% of the most popular large breed dogs will show x-ray evidence of CHD. Many will suffer from osteoarthritis, pain, and lameness, costing owners and breeders millions of dollars in veterinary care, shortened work longevity, and reduced performance.**

**PennHIP (University of Pennsylvania Hip Improvement Program) incorporates a new method for evaluating the integrity of the canine hip. It is accurate in puppies as young as 16 weeks of age. It has great potential to lower the frequency of CHD when used as a selection criterion.**

The PennHIP method is a different way to assess, measure and interpret hip joint status. It consists of three separate radiographs: the distraction view, the compression view and the hip-extended view. The distraction view and compression view, developed by Dr. Smith, are used to obtain accurate and precise measurements of hip joint laxity and congruity, respectively. The hip-extended view is used to obtain supplementary information regarding the existence of DJD in the hip joint.

To summarize, PennHIP is composed of three major components

- o A diagnostic radiographic technique
- o A network of trained veterinarians
- o A medical database for scientific analysis

Why use PennHIP?\*

A growing body of scientific information from multiple independent laboratories confirms that the PennHIP method surpasses other diagnostic methods in its ability to measure hip joint laxity and accurately predict the onset of DJD. The PennHIP method can be performed on dogs as young as sixteen weeks of age compared with two years using the standard technique. The data generated by PennHIP allows breeders to confidently identify the members of their breeding stock with the tightest hips and the best breeding potential. Pet owners are able to obtain an estimate of their dog's risk for developing DJD and, if necessary, make lifestyle adjustments for their dog to enhance the quality of their pet's life. The PennHIP interpretation will also permit breeders to assess the progress they are making with their breeding program.

PennHIP is performed only by certified individuals who have undergone training and have successfully demonstrated their expertise in performing the technique. In addition to the special radiographs developed by PennHIP, the method also incorporates the standard hip-extended view into the interpretation of hip joint integrity. Upon request, your PennHIP veterinarian can make a copy of the hip-extended radiograph for submission to the OFA at the time your dog has PennHIP radiography. You do not have to abandon the OFA view or schedule a separate appointment to have it done.

To obtain diagnostic radiographs, it is important that the patient and the surrounding musculature be completely relaxed. For the comfort and safety of the animal, this requires sedation and/or general anesthesia. Typically, three separate radiographs are made during an evaluation. The first is the compression view where the femurs are positioned in a neutral, stance-phase orientation and the femoral heads are pushed fully into the sockets. This helps show the true depth of the hip socket and gives an indication of the "fit" of the ball in the socket. The second radiograph is the distraction view. Again, the hips are positioned in a neutral orientation and a special positioning device is used to apply a harmless force to cause the hips to displace laterally. This position is the most accurate and sensitive for showing the degree of passive hip laxity. Passive hip laxity has been shown to be the primary risk factor associated with the development of DJD. A hip-extended view is also included for the sole purpose of examining for existing joint disease such as osteoarthritis. The PennHIP procedure has been safely performed on thousands of patients.

A unique method for the measurement of hip joint laxity, using an index, was developed for the PennHIP compression and distraction views. The method is **\*quantitative\*** (i.e., it assigns a number to joint laxity) as opposed to being qualitative or subjective where an ordinal score is used (e.g. excellent, good, fair, etc.). the former is not as vulnerable to inter- and intra-observer errors commonly associated with subjective measurement systems.