PennHIP determines a dog's risk for developing hip dysplasia.

HIP SCORING AND REPORT INTERPRETATION

Your PennHIP veterinarian will submit the three PennHIP radiographs to the PennHIP Analysis Center for specialized evaluation. A confidential report comprised of the following three key parts will be sent to you and your PennHIP veterinarian:

Distraction Index (DI)

The DI is a measure of hip laxity—the inherent distance the ball can be displaced (distracted) from the hip socket—and is expressed as a number between zero and one. A DI near zero indicates little joint laxity (very tight hips). A DI closer to 1.0 indicates a high degree of laxity (very loose hips). Dogs with tighter hips are less likely to develop hip dysplasia than dogs with loose hips. A threshold level of 0.30 has been identified, below which hip dysplasia is very unlikely to occur.

Degenerative Joint Disease (DJD)

The PennHIP report also includes an evaluation of the hip-extended radiograph for evidence of DJD, confirming a diagnosis of hip dysplasia. For dogs with evidence of osteoarthritis, your veterinarian can explain the disease fully and recommend palliative measures.

Breed Laxity Profile Ranking

Based on the DI, your dog is ranked within its breed. For the dog breeder this ranking helps in the selection of breeding candidates—dogs in the tighter half of the population are recommended for breeding.

By selecting breeding dogs with tight hips (lower DI), meaningful progress toward better hips can be made within a few generations.

PENNHIP — MAKING A DIFFERENCE

PennHIP is the most accurate hip screening method available and can be safely performed on dogs as young as 16 weeks. An early estimate of a dog's hip integrity is invaluable, whether the dog's intended purpose is for breeding, for working, or as a family pet.

For breeders

Information compiled in PennHIP's international database permits informed selection of breeding stock based on hip tightness relative to other members of the same breed.

Breeders can reduce the incidence and severity of Canine Hip Dysplasia (CHD) in future generations of dogs by applying selection pressure towards tighter hips. Among current hip screening methods, PennHIP has the highest heritability value to bring about these genetic changes.

For service and working dog organizations

The investment in training service/working dogs is enormous. The ability to prescreen the dog's genetic predisposition to CHD is an invaluable tool when evaluating a future service/working dog's hip integrity.

For companion dog owners

If your dog is identified to be at risk for hip dysplasia, your veterinarian can recommend, at an early age, appropriate strategies (diet, medication, and/or activities) to delay or diminish the ultimate course of the disease.

The PennHIP database has expanded rapidly, representing all major breeds. Interest in utilizing the PennHIP method as the primary hip screening tool continues to grow both nationally and internationally.

PennHIP is recognized by the American Kennel Club for inclusion in its Canine Health Information Center (CHIC).

For more detailed information, or to find a certified PennHIP veterinarian in your area, visit the PennHIP website at

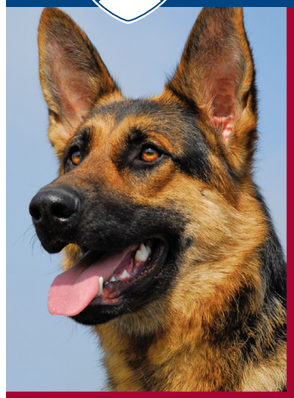
www.pennhip.org

PennHIP

PennHIP Analysis Center
20 Valley Stream Parkway, Suite 267
Malvern, PA 19355

PennHIP

THE KEY TO REDUCING CANINE HIP DYSPLASIA



Ask your Certified PennHIP veterinarian to test your dog's susceptibility to hip dysplasia.

For more information visit the PennHIP website at
www.pennhip.org

University of Pennsylvania Hip Improvement Program

PennHIP is the most accurate hip screening method.

THE PROBLEM

Canine Hip Dysplasia (CHD)

Severe Hip Dysplasia

- Is the most commonly inherited orthopedic disease
- Leads to hip arthritis causing pain, stiffness, and diminished quality of life
- Has no medical or surgical cure
- Afflicts more than 50% of the dogs in some breeds
- Clinically affects large breed dogs more severely than smaller breed dogs

THE KEY FACTOR

Hip Laxity

In the 1980's, researchers at the University of Pennsylvania's School of Veterinary Medicine pioneered a better diagnostic method to assess hip laxity—the key factor in the development of Canine Hip Dysplasia (CHD).

The hip joint is a ball-and-socket joint, with the ball of the femur (femoral head) fitting into the hip socket (acetabulum). Hip laxity refers to the degree of "looseness" of the ball in the hip socket.

Studies have shown that dogs with looser hips (excessive hip laxity) are at higher risk to develop hip dysplasia than dogs with tighter hips (minimal hip laxity).

THE SOLUTION

PennHIP - University of Pennsylvania Hip Improvement Program

The research-based hip-screening procedure known as PennHIP has proven to be the most accurate and precise method to measure hip laxity. It can identify—as early as 16 weeks—dogs that are susceptible to developing hip dysplasia. This offers breeders the opportunity to make early decisions on breeding stock, and allows veterinarians to advise pet owners on lifestyle adjustments and preventative strategies to minimize the pain and progression of the disease.

THE PENNHIP PROCEDURE

There are two principal innovations in the PennHIP method. First, the dog is positioned on the x-ray table with hips in a neutral orientation, and second, a custom distraction device is applied to reveal the maximum amount of hip laxity. To achieve this, the dog's muscles are completely relaxed by administering sedation or general anesthesia.

Veterinarians must complete specialized training and quality control exercises before becoming certified to perform the PennHIP procedure.

A complete PennHIP evaluation includes office consultation, sedation/anesthesia, and submission of the three PennHIP radiographs to the PennHIP Analysis Center for evaluation.

Your certified PennHIP veterinarian will be happy to discuss the procedure and cost with you.

PENNHIP RADIOGRAPHS

PennHIP screening includes three separate radiographs (x-rays). Following are examples of the three PennHIP radiographs of a 15-month-old Labrador Retriever.

1 DISTRACTION RADIOGRAPH

The dog's hind legs are positioned in a neutral, weight-bearing orientation and a special device is used to reveal the dog's inherent joint laxity.

This exclusive feature of the PennHIP procedure permits accurate measurement of maximal hip laxity.

2 COMPRESSION RADIOGRAPH

The dog's hind legs are positioned in the same neutral position as the distraction radiograph but the femoral heads (balls of the femur) are gently seated into the acetabula (hip sockets).

This view can identify critical anatomic landmarks of the hip and determine how well the femoral head fits into the acetabulum.

3 HIP-EXTENDED RADIOGRAPH

The dog's hind legs are placed in "extension." PennHIP utilizes the hip-extended view to identify radiographic signs of osteoarthritis.

The hip-extended view (photo 3) on this dog shows no evidence of hip arthritis. When comparing this dog's hip-extended view (photo 3) to the distraction view (photo 1), the distraction view reveals much greater joint laxity. So although there is no evidence of osteoarthritis at this time, the PennHIP method uses the amount of joint laxity revealed in the distraction view (photo 1) to tell us that this dog is actually susceptible to developing hip dysplasia.

Traditional hip screening methods rely solely on the hip-extended view (photo 3) to evaluate both the presence of hip arthritis and joint laxity (subluxation). Using traditional systems this dog's hips would be considered normal because the hip-extended view (photo 3) shows no evidence of arthritis or subluxation. But, while the hip-extended view can detect existing arthritic changes it often conceals hip laxity thereby giving a false impression of joint tightness. So, in the absence of arthritic changes, as in this dog, the hip-extended view does not reliably distinguish between dogs that are disease-susceptible and those that are not.