

Study compares PennHIP vs OFA hip dysplasia tests

[Three Polyamorous Gay Women Are Expecting Their First Child Together. | BuzzWok.com | The Best Buzzing Stories Frying In One Place \(Buzzwok\)](#)

By Ben Williams

Responsible breeders are always trying to reduce the risk of hip dysplasia in their dogs blood lines. One way to achieving this goal is to have an accurate test for susceptibility to this disease. A recent [STUDY](#) attempted to look at the differences in the two most common tests.

Currently the test regarded as the "gold standard" used to determine a dogs susceptibility to hip dysplasia is the [Orthopedic Foundation for Animals](#) (OFA) hip joint scoring system. This system rates a dogs hip joint on a seven-point scoring system. The test relies on interpretation of a radiograph of the dogs hips, which are then assigned a score by three independent radiologists: Excellent, Good, Fair, Borderline, Mild, Moderate and Severe ([Click here to read an explanation of each score](#)).

Another, more recently developed test, is the [University of Pennsylvania Hip Improvement Program](#)(PennHIP) test. Unlike the OFA test, PennHIP requires the dog to be anesthetized. Three radiographs are taken to measure the hip joint laxity. A score between 0-1 is assigned, with 0 being very tight hips and 1 being very loose. The test is not pass-fail, and the score is actually based on a measurement of the hip's distraction index (DI).

According to the organization, "the DI is an indication of the 'percent out of joint' that the femoral head is displaced from the acetabulum." So a DI of 0.15 means the femoral head is 15 percent out of joint (a tight hip), and a DI of 0.77 means the head is 77 percent out of joint (a pretty loose hip). The index is measured using circular gauges that are placed over the films, and the final number reflects factors such as the size of the dog and how it compares to the rest of the population. This method generally defines a DI of ≥ 0.30 as "osteoarthritis-susceptible," and a DI of ≤ 0.30 as "osteoarthritis-non-susceptible."

Quick comparison		
	PennHIP	OFA
Veterinarian CERTIFICATION REQUIRED?	Yes	No
Anesthesia required?	Yes	No
Cost to client	\$200-\$400	\$35 + radiograph, veterinarian fees
Earliest age of evaluation (for certified results)	16 weeks	2 years
Radiographs required	3	1
Scoring system	Quantitative: Calculated Distraction Index	Qualitative: 7-point system

	0-1 (0 is the best) evaluated by TRAINED veterinarian	from excellent to severe, based on evaluation of three independent radiologists
Recognized by AKC	No	Yes
Year founded	1993	1966

A recent **STUDY** compared the relationship between the OFA hip joint scores and the PennHIP distraction index values.

The study was conducted by researchers from the University of Pennsylvania's School of Veterinary Medicine, one of whom, Gail Smith, VMD, PhD, invented the PennHIP method. The study found that the PennHIP method was a more accurate indicator of dogs' susceptibility to **OSTEOARTHRITIS**.

"Results suggested that OFA scoring of HE [hip joint-extended] radiographs underestimated susceptibility to **OSTEOARTHRITIS** in dogs, which may impede progress in reducing or eliminating hip dysplasia through breeding," the study says.

The researchers looked at the differences in the OFA scores and the PennHIP DIs of radiographs of 439 dogs that were screened between 1987 and 2008. The specific results showed that:

- 14% of dogs had hip joints scored as excellent by OFA standards, but 52% (31/60) of those had a DI ≥ 0.30 (range, 0.14 to 0.61)
- 82% of dogs with OFA-rated good hip joints had a DI ≥ 0.30 (range, 0.10 to 0.77)
- 94% of dogs with OFA-rated fair hip joints had a DI ≥ 0.30 (range, 0.14 to 0.77)
- Of all dogs with fair to excellent hip joints by OFA standards, 80% had a DI ≥ 0.30 .
- All dogs with OFA-rated borderline hip joints or mild, moderate, or severe hip dysplasia had a DI ≥ 0.30 (range, 0.30 to 0.83).

Specialist weighs in

Reproductive specialist Milan Hess, DVM, DACT, of Colorado Veterinary Specialists said her clinic performs OFA tests more often than PennHIP.

"Breeders know what Excellent, Good or Fair means when discussing hip scores," Hess said. "Breeders are typically not **EDUCATED** in distraction indices or in knowing how their dogs hips compared to the rest of the population can help them make objective breeding choices. OFA evaluation does not require heavy sedation or general anesthesia and requires only one view. For these reasons, OFA evaluation is significantly less expensive than PennHIP evaluation. OFA does not require films to be submitted so breeders can elect not to submit films with obviously poor joint conformation. Finally, OFA evaluations

tend to be easier to 'pass' than PennHip evaluations and many breeders are unfortunately more interested in passing the test than having an objective evaluation in which the result may not be as good."

While the conclusions of the study may seem foregone, Hess said the results published generally correlate with her experience with the two methods. However, she pointed out that the lack of [IMPROVEMENT](#) in dogs' hips is not only the fault of the evaluation method.

"As veterinarians, we need to encourage owners to submit films that will obviously not pass due to poor joint conformation AND make the results available to the public (there is a box on the OFA form the owner can initial if they wish to have non-passing results made public)," Hess said. "It does no good for a breeder to be using a dog with Excellent hips if they didn't know that 3 of the littermates were dysplastic. Used properly, OFA evaluations likely could be used to direct selection pressure to [IMPROVE](#) hip scores."

The study, "Evaluation of the relationship between [ORTHOPEDIC](#) Foundation for Animals' hip joint scores and PennHIP distraction index values in dogs," was published in the [Journal of the American Veterinary Medical Association \(JAVMA\)](#) in September.