

## Thoughts on Hip Testing — Part 1

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In 1999, Deb Lang took her less-than-a-year-old Norwich Terrier, Norma, for a routine hip X-ray. “I noticed a somewhat loose rear gait,” she says, “although she was not lame and fully functional.” Coming from a background in sporting dogs, Lang was accustomed to doing this. “It was immediately apparent that the dog was dysplastic,” she remembers.

Two and a half years later, she took Norma back again. “I re-radiographed her at 44 months, in 2003, for the express purpose of publicly surfacing to the fancy that Norwich indeed had CHD (canine hip dysplasia).” The screen was submitted to the Orthopedic Foundation for Animals (OFA), and the result was entered in the OFA database. It confirmed what Lang already knew: Norma was rated as severely dysplastic, a red flag to all breeders.

The new Norwich Terrier Club of America’s Code of Ethics specifies under “Responsibilities of Member-Breeders” that the primary objective in breeding Norwich Terriers is to improve the breed while producing physically and temperamentally sound offspring. The Code then spells out (among other things) that the responsible breeder “perform health screening tests recommended by the NTCA that will help determine the genetic soundness of the dog or bitch.” The club recommends three screening tests—of hips, eyes, and patellae.

The OFA, the main registry for this information, has been around for 40 years. However, many Norwich Terrier breeders have been testing for hip disease only for the last decade. While recordkeeping in our breed began in 1985, it was not until the year 2000 that more than 10 Norwich were tested in any one year. For the first 15 years, fewer than 30 NTs in total were tested for CHD—but in 2000 the word began getting out, and in that year 18 were tested. Of those, 14 were considered normal (with two “Excellent,” and 12 “Good”), and four (22 percent) were abnormal, with three graded mildly dysplastic and one graded “Moderate.”

CHD is a developmental and progressive disease best measured by a series of radiographs over a period. While many of us have heard that Norwich aren’t affected by CHD like larger breeds, Lang would be the first to dispute this. She has both the physical reality of Norma’s worsening CHD and the radiographs to prove it.

The OFA bases each assessment on one X-ray (the hip-extended view) that is reviewed for osteoarthritis and subluxation (abnormal position of the femoral head) by three board-certified veterinary radiologists. The result is the assignment of one of seven grades, ranging from “Excellent” to “Severe.” As of this writing, 550 Norwich Terriers have been screened. Last year (2009), 86 were tested, yielding 72 normal ratings and 14 (16.3 percent) abnormal.

Hip dysplasia means faulty development of the hips and refers to an abnormality in the way the head of the femur (thigh bone) fits into the cup-shaped joint socket called the acetabulum. Points considered include: Does the ball fit snugly and stay there? One of the earliest indicators of potential CHD is hip-joint laxity, or the amount of movement between the femoral head and the socket.

Another question is: Is the fit tight or loose? Tight hips have very little movement; loose hips have a lot.

The test we have that measures the amount of looseness was devised by Dr. Gail K. Smith, of the Veterinary School of the University of Pennsylvania, with research starting in 1983. With the PennHIP (University of Pennsylvania Hip Improvement Program) method, three X-rays are used in the evaluation: (1) the standard hip-extended view as used by OFA (evaluating for arthritis); (2) a compression view (evaluating the congruency of the hip joint, or how well the femoral head fits into the socket); and (3) a distraction view (with the hips placed in a stressed position to show maximal laxity). The laxity is quantified with a specific numerical rating, called the distraction index. The closer the measurement is to 0, the tighter the hips; the closer to 1, the looser the hips. So if a dog's hips have a DI of greater than 0.70, there is a high risk that he will develop osteoarthritis; if a dog's DI rating is less than .30, there is a very low risk for the development of osteoarthritis later in life.

Research shows that the laxity measure is the best predictor of future development of the osteoarthritis of CHD. It can be used to screen a puppy as young as 4 months old, which is an advantage to breeders who want to make informed decisions about which animals to keep in a breeding program. However, there are currently only 18 Norwich Terriers in the PennHIP database, so at this time it's very difficult

to draw conclusions on the overall health of the breed.

Lang did not elect to have Norma screened by PennHIP. ("It would have been overkill," she says.) For now, she manages the 11-year-old Norwich with Rimadyl (a nonsteroidal anti-inflammatory drug, or NSAID), Tramadol (an opioid-based pain medication), and glucosamine (an amino sugar thought to promote the formation and repair of cartilage). Norma is to date the only NT classified as "Severe" in the

OFA database. However, this doesn't mean there aren't many more who simply haven't been made public. Regardless, it has cost Lang time, money, constant concern, and lost companionship—no long walks. Most of all, it has cost Norma a life of pain and restriction. Breeders need to pay attention to this issue.

In the next two columns, Part 2 and Part 3, we'll look at the current state of NT hip-health as reflected by OFA and PennHIP statistics, the pluses and minuses of both systems, difficulties in breeding away from HD, prioritizing our health-testing dollars, and how you can manage or protect against CHD in your Norwich.

Thanks to Deb Lang for so generously sharing her story and to both OFA and PennHIP for their participation.

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