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## Young Puppies and Loose Hips: Catch 'em While They're Young

**H**ip dysplasia (abnormal development of the hip joint) is one of the more common causes of rear limb pain and lameness in dogs.

A more normal hip is basically a simple ball and a socket [Figure 1]. The socket, also called the acetabulum, forms a sphere, and is located within the pelvis bones. The ball, also called the femoral head, forms a smaller sphere, and is found at the top of the femur (thigh bone). Ideally, the center of the ball sphere should line up with the center of the socket sphere when the ball is placed within the socket. Dogs with hip dysplasia do not have this perfect fit [Figure 2], which results in a "loose" hip, where the ball bounces around within the socket, leading to the development of arthritis [Figure 3].



Figure 1

A common misperception regarding hip dysplasia is that it is mainly a problem in middle age to older dogs once the arthritis sets in. Hip dysplasia is actually a disease process that dogs are born with and develop arthritis, pain, and lameness from over time. The ideal scenario would be to diagnose those puppies with loose hips at an early age, with the goal of providing early treatment to help decrease the amount of hip arthritis and associated hip discomfort and lameness.

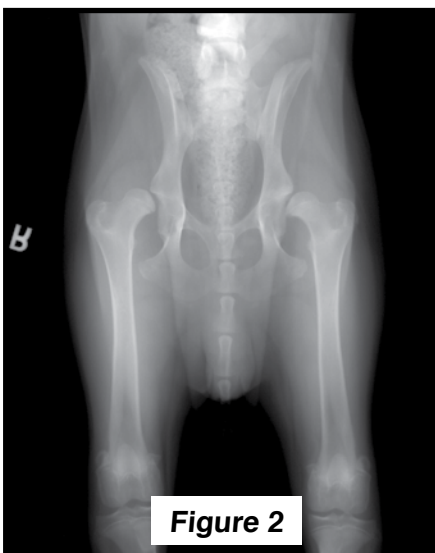


Figure 2

Routine X-rays have been used to diagnose arthritic hips, as well as certify dog hips for breeding purposes for years. The problem with these X-rays is that they are not as dependable for predicting loose hips in young dogs (4 months to 2 years of age). Thus, a new technique has been developed at the University of Pennsylvania. The technique, PennHIP® radiography (x-ray), is an x-ray technique where the hips are put under tension during the X-ray. This tension allows for identification of those dogs with loose hips, which are more susceptible to the development of arthritis.

PennHIP® radiography has been found to be the best predictor of future hip arthritis development in young dogs. In other words, we can identify those puppies with loose hips before more significant arthritis has developed.



Figure 3

PennHIP® radiography can be performed as early as 4 months of age, whereas the traditional X-ray technique for hips is not certifiable until 2 years of age.

PennHIP® radiography has stimulated the development of a new treatment option for the young puppy called Juvenile Pubic Symphysiodesis (JPS). JPS involves the fusion of a growth plate within the pelvis. All bones have what are called cartilage growth plates, which is how bones form their shape and length. Fusion, or stoppage of growth, of a growth plate will alter the shape and development of the affected growth plate and bone.

JPS alters the pelvis development with the ultimate result of the ball and socket fitting much more "tightly," therefore decreasing the amount of future hip arthritis. Also, compared to other more traditional surgeries for hip dysplasia, JPS is a much easier technique, is less invasive, less costly, and is a more simple recovery for dogs. JPS should not be thought of as a complete cure for hip dysplasia, but can significantly improve hip joint conformation and lessen the long-term effects of hip arthritis.

Today, we now have the tools to better diagnose young dogs earlier with loose hips predisposed to hip arthritis and provide a new, more simplified treatment before the negative issues of hip arthritis have developed.

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