



GRCWA Inc

**JUVENILE PUBIC
SYMPHYSIODESIS (JPS)
SURGERY**



Hip Dysplasia

Hip dysplasia is a very common orthopaedic disease in large breed dogs. The most noticeable sign of hip dysplasia is lameness due to the development of hip joint osteoarthritis (OA). However, it is important to recognise that certain factors, such as diet and exercise, as well as the physical characteristics of the dog, can significantly influence the manifestation of OA in dogs with a genetic predisposition to hip dysplasia. In certain cases, OA may not become apparent until later in the dog's life or may not develop at all during the dog's lifetime.

Numerous studies have demonstrated that the likelihood of hip OA increases when the hip joint is loose. Unfortunately, there is currently no method available to measure functional laxity. Instead, the distraction index (DI), which measures the extent to which the ball of the hip joint can be displaced from the socket on PennHip radiographs, is used to assess passive laxity. These studies have indicated that dogs with minimal passive hip joint laxity (DI <0.3) rarely develop OA, while those with greater degrees of passive laxity (DI >0.3) may or may not develop OA. Although there are no absolute thresholds in nature, the concept of establishing a threshold DI below which dogs are unlikely to develop OA holds great appeal. However, it is important to note that current research shows that it is not possible to determine whether an individual dog will develop OA. What can be stated is that as the DI increases, the probability of a dog developing OA also increases. This needs to be kept in mind by those who propose using the DI to determine whether to proceed with surgery in order to prevent the development of OA

Juvenile Pubic Symphysiodesis (JPS)

Juvenile pubic symphysiodesis (JPS) is a surgical procedure that can be used to help young dogs with hip dysplasia (HD). This procedure, which has been available since 1996, aims to alter the orientation of the hip sockets as the pelvis grows. It has been scientifically proven that JPS promotes a better fit between the joints and reduces looseness in the hips. However, the fact that JPS alters the geometry of the pelvis cannot be construed as proof of its clinical effectiveness for prevention of hip dysplasia and hip joint osteoarthritis. Further research, focusing on different breeds with DI-matched individuals, is necessary to determine the efficacy of JPS.

During this procedure, the growth plate in the bottom of the pelvis, called the pubic symphysis, is fused prematurely using electrostimulation or staples. This stops further growth in that area. As the rest of the pelvis continues to grow, it causes a slight downward rotation of the two sides of the pelvis, which in turn leads to a slightly more horizontal position of the hip sockets. In dogs that are selected properly for this procedure, the change in the shape of the hip joint is expected to reduce the abnormal forces that cause stretching, remodelling, and ultimately degeneration of the hip joints over time. JPS surgery has a very low chance of complications, However, it does have the effect of decreasing the size of the pelvic canal. Consequently, this decrease in size could give rise to dystocia in sexually intact females and potentially lead to colonic disease and obstipation. Moreover, it is crucial to note that any changes made to the dog's hip joint could potentially render them more susceptible to femoroacetabular impingement, and as we all know, this can ultimately lead to Joint damage and pain.



Case Selection

JPS is most effective when performed on young puppies who have not yet undergone significant growth of the pelvis. It is ideal to perform the procedure around the tender age of 15 weeks. Furthermore, it is of utmost importance to bear in mind that this method is only effective on hips that are mildly to moderately lax (DI 0.3 > 0.6) and show no signs of lameness or disease. Unfortunately, this procedure will not be effective for puppies with excessively loose hips (DI > 0.6) or for dogs that have already been diagnosed with OA and exhibit clinical signs of HD. In these particular cases, a slow-effect procedure like JPS won't be able to stop the ongoing degenerative process.

At such a young age, it's impossible to definitively determine which puppies with mild to moderate loose hips will go on to develop significant OA. Different breeds have varying levels of sensitivity to hip laxity in the development of OA. Extensive studies have shown that the average DI for golden retrievers is 0.55. Moreover, it is noteworthy that a DI of 0.5 in golden retrievers carries an incredibly low risk of OA, approximately 10%. This implies that approximately 90% of golden retrievers who have mild to moderate loose hips will not develop OA. Furthermore, it is vital to consider that the eagerness to perform surgical procedures to prevent OA should be approached with a balanced perspective, as it is well-established that mild to moderate OA typically does not cause significant clinical abnormalities in dogs. In fact, conservative methods such as diet and appropriate exercise have been unequivocally proven to be equally as effective in managing HD and preventing the onset of OA.

The selection of suitable cases is undeniably paramount to the success of JPS. In fact, a staggering 90% of golden retrievers with mild to moderate loose hips would not derive any benefit from this pre-emptive surgery. Regrettably, this procedure will not be effective for golden retrievers with severe hip laxity or for dogs that have already been diagnosed with osteoarthritis and display clinical signs.



The ideal age for JPS is
15 Weeks

A Golden Retriever with
a DI of 0.5 carries an
extremely low risk of
developing
osteoarthritis ~ 10%



JPS is not effective in
puppies with a DI
greater than 0.6 or in
puppies showing
lameness.

Diet & appropriate
exercise have been
proven to be equally
as effective in
managing HD

