

(JPS) Juvenile Pubic Symphysiodesis

What is hip dysplasia?

NORMAL HIP JOINT (Deep & Well Formed)

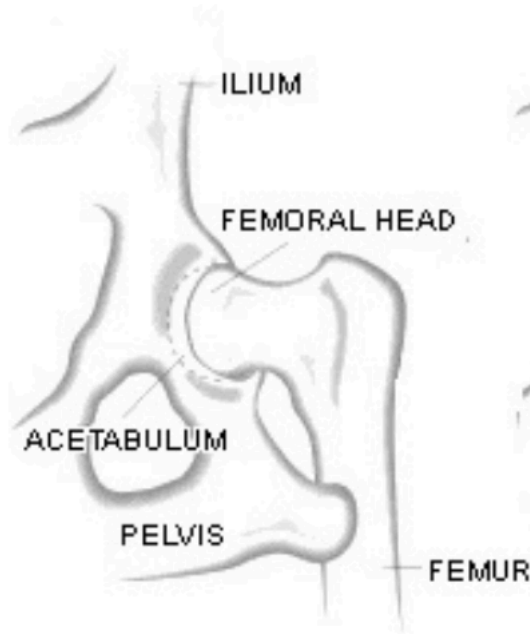


Figure 1

HIP DYSPLASIA

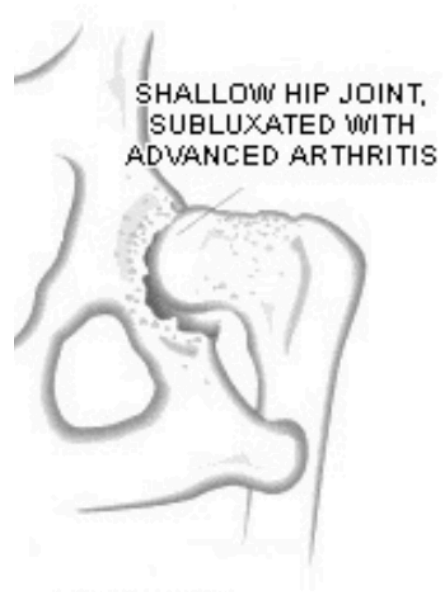


Figure 2

The hip joint is a 'ball & socket' joint. Hip dysplasia is a disease of the hip joint which causes the joint to develop in an abnormal way, resulting in a shallow socket that the ball does not fit properly into. The shallow, loose joint is then prone to subluxate (partially dislocate). Eventually this condition leads to significant discomfort, lameness & progresses to what is often quite severe osteoarthritis.

Hip dysplasia is an inherited trait. ~ 60% of the likelihood of developing hip dysplasia is based on the genes of the parents. The other ~40% is based on environmental factors such as growth rate, amount of exercise during growth & trauma to the joint.

Diagnosing hip dysplasia can be done with a great degree of certainty by 14 weeks of age using a special radiographic technique called the Pennhip system. This procedure (developed at the University of Pennsylvania) allows us to determine exactly how loose the hip joint is by providing a view of the hips where we can measure how far the femur can be pulled out of the

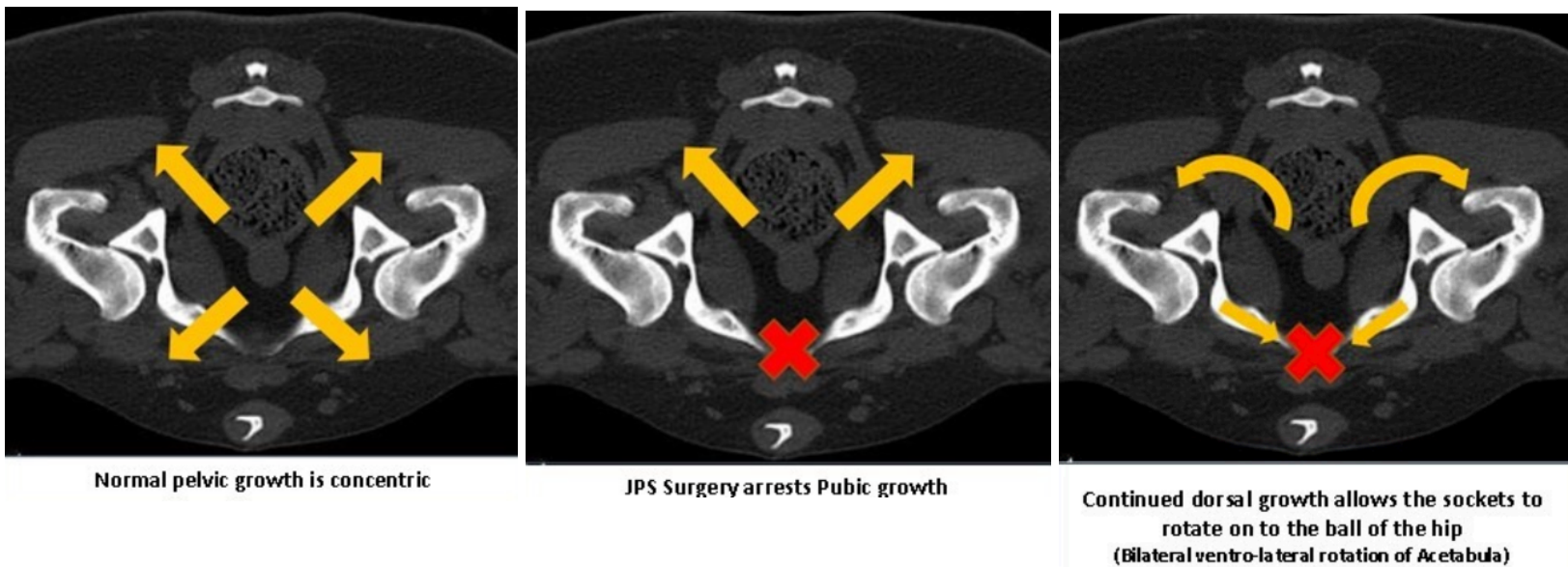
acetabulum. These measurements are calculated & a value known as the distractive index (DI) is determined. This value is compared to the averages of the breed & from that we can tell what the probability is that the pet will develop hip dysplasia & whether or not they are acceptable for breeding. In general, if the DI is greater than 0.3, the pet has over an 80% probability of developing dysplasia. Because dysplasia is heritable, we can select only pets with DI values that are better than the breed average to breed. In doing so, we can eventually reduce & hopefully eliminate dysplasia from that line of dogs.

Risk breeds include Labradors, Golden Retrievers, German Shepherds, Rottweilers, Great Danes, Bernese Mountain Dogs, Saint Bernards, Newfoundlands, Neapolitan Mastiffs, British & French Bulldogs, Basset Hounds, pugs & King Charles Cavalier Spaniels. – Yes, even some small breeds!

The cause of hip dysplasia is multifactorial – mainly genetic, partly dietary, partly growth related & partly unknown. Purchasing a pup bred from parents that have good hip scores (this is determined by X-ray screening) may help to reduce the chance of getting this problem, but is in no way a guarantee. People are often disappointed when purchasing a pup from parents who have great hip scores, only to find out later their pup has severe hip dysplasia.

Hip dysplasia may be suspected (or in very severe cases diagnosed) by palpation for joint laxity (looseness), but requires X-rays of the hip joints under deep sedation or general anesthesia to definitively determine if hip dysplasia exists. There are many options for treatment of hip dysplasia & these depend on the age of the pup at diagnosis, the severity, & whether or NOT osteoarthritis is present. ALL dogs diagnosed with hip dysplasia should be desexed due to the hereditary component of this disease.

What is Juvenile Pubic Symphysiodesis (JPS)?



JPS is a relatively minor & cost effective early intervention surgical procedure that may significantly reduce the chance of needing far costlier surgical intervention (such as hip replacements), later on in life. It will also potentially reduce the development of osteoarthritis & the costly ongoing medical management associated lifelong with this condition.

This procedure uses an “electrocautery” to create scarring in the growth plate of the floor of the pelvis. The effect of this is to halt bone development from this growth plate so that as the rest of the pelvis continues to grow, the cups of the hip joint externally rotate onto the ball of the hip joint to provide better coverage of the balls of the hip joint. The surgery causes minimal discomfort & your pup will need to have his/her activities slightly for 10-14 days after surgery. Follow-up X-rays are taken 2 months post-operatively to assess the success of the surgery.

The best results are achieved if surgery is performed at 14-16 weeks of age, while the pelvis is still growing & developing. Between 16-20 weeks of age a good outcome is still possible, but significantly reduced compared to 14-16 weeks. Dogs >20 weeks of age are unlikely to get a successful result. So, in order to have the option of this procedure for your dog, we need to diagnose him/her between 14-16 weeks of age. This is most important.

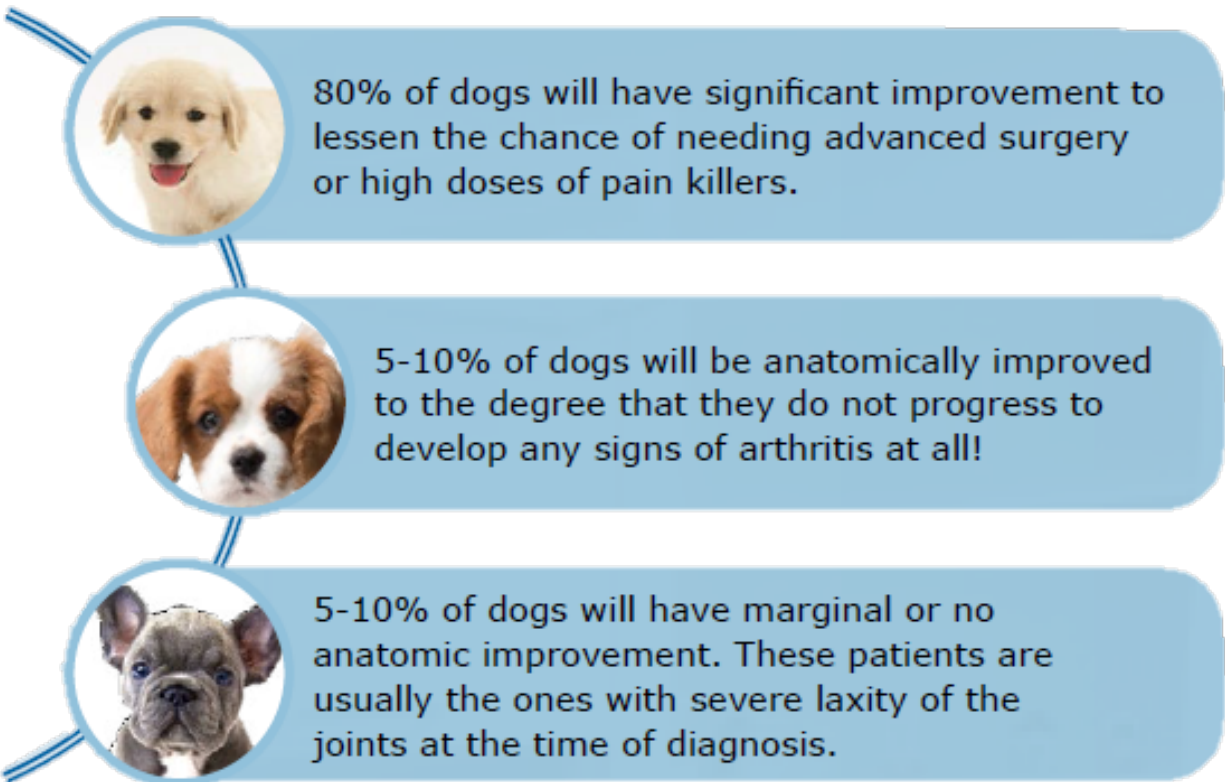
This operates on the principle that if we can close the growth plate between the left & right halves of the pubis (the bones on the bottom of the pelvis), it will force the acetabuli to move further out to the sides & cover the femoral heads more effectively thus reducing the instability of the hip joint.

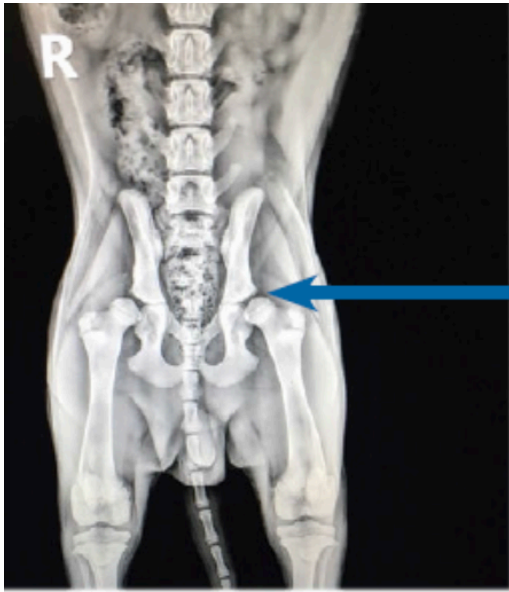
What happens during the surgery

- Patient will be put under general anesthesia
- Small incision is made between the hind limbs to expose the pubic bone of the pelvis
- Growth plate of the pubis is cauterized to destroy the growing cells of this part of the pelvis
- Patient will go home the same day with pain medication & NSAID (anti-inflammatory)
- An E-collar will be dispensed to prevent your pet from licking the wound.

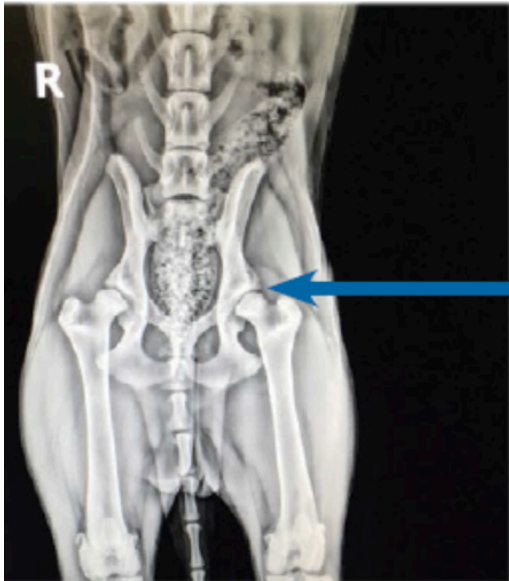
What is the Prognosis After Surgery?

~85-90% of dogs will have significantly improved anatomy, such that they are an excellent chance to NOT require more involved (& costly) specialist surgical revision at a later time in life such as hip replacement (~ \$10,000 – per side!). Some dogs will still develop hip arthritis but it is far more likely to occur later in life than it would have without JPS & is also far more likely to be managed well with reduced medications than may otherwise be required.





**Patient at 12 weeks
of age
(Pre-operative)
Note the femoral
head not sitting
snugly in
the socket**



**Patient at 6 months
of age
(3 months Post-
operative)
Femoral head sitting
nicely in socket**

For any Risk Breed We Advise the Following:



1. At 14-16 weeks of age, X-ray the hips under sedation.
2. If there is evidence of significant hip dysplasia (determined either by joint looseness or X-Ray changes), we will provide you with an estimate & the nearest time to perform the surgery with general anesthesia.

(NOTE: we only recommend this procedure if significant changes are evident. If changes are minor or subtle & we do NOT feel there is a significant chance of improvement, we do NOT recommend proceeding with surgery. We will call you at the time of x-rays to discuss).

3. 2 months after JPS surgery, follow-up X-rays can be taken to assess the femoral head coverage under the hip joint (acetabulum).

What if my hips are normal, am I able to be desexed at the same time at 14-16 weeks?



Absolutely! The beauty & flexibility of this process is that the choice is yours. You can choose to desex your dog at the same time, or later if you prefer your dog to grow out a little more. Feel free to discuss early diagnosis & corrective JPS further with any of our veterinarians.

Potential Complications

- Very Safe & minimally invasive procedure when performed in young pets.
- Failure of the pubic growth center to be successfully ablated by the cauterization surgery, thus the pelvis grows as it would naturally & the hip dysplasia progresses
- Seroma (a serum pocket) formed at the surgical site
- Infection is uncommon

If you have any questions, please feel free to ask your veterinarian &/or veterinary surgeon.

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