



CANINE HIP DYSPLASIA

What is Hip Dysplasia? - Hip dysplasia is the malformation and degeneration of the hip joints in dogs. It is a developmental defect initiated by a genetic predisposition to subluxation (partial dislocation) of the immature hip joint. Poor congruence between the femoral head (ball) and acetabulum (socket) creates abnormal forces across the joint, interferes with normal development (leading to irregularly shaped acetabula and femoral heads), and overloads the joint cartilage (causing micro-fractures and degenerative joint disease).

Hip dysplasia is caused by a genetic predisposition for hip laxity. Rapid weight gain, nutrition, and pelvic muscle mass influence the expression and progression of the disease.

Can Any Dog Get Hip Dysplasia? - Any dog can, but large breed dogs, including Saint Bernards, German shepherds, Labrador retrievers, golden retrievers, and rottweilers are the most likely to develop hip dysplasia. Smaller breed dogs may be affected but are less likely to demonstrate clinical signs. Hip dysplasia begins in the immature dog. Clinical signs may develop after 4 months of age in some dogs, whereas other dogs show clinical signs at an older age when degenerative joint disease develops.

What Are Its Symptoms? - Clinical signs are dependent on the degree of joint laxity or looseness, the amount of degenerative joint disease present, and the chronicity of the disease. Early clinical signs are related to joint laxity; later signs are related to joint degeneration. Common signs include reduced activity, difficulty rising, reluctance to run or jump or climb stairs, intermittent or persistent hind limb lameness (often worse after exercise), “bunny hopping” or swaying gait, and narrow stance in the hind limbs.

How is It Diagnosed? - The histories are suggestive. Physical examination findings may include pain, laxity, crepitus or grating, and diminished range of motion in the hip joints. Often the dog may have atrophy (degeneration) of the thigh muscles and hypertrophy (enlargement) of the shoulder muscles.

Later joint laxity may no longer be present due to fibrosis or scar tissue buildup around the affected hip joint. Radiographs (x-rays) are usually needed to confirm the diagnosis and determine degree of involvement. Sedation or general anesthesia may be required for accurate positioning. Radiographic signs in early disease include subluxation of the hip joint with poor congruence between the femoral head and acetabulum. The shape of the acetabulum and femoral head are normal initially, however, the acetabulum becomes shallow and the femoral head begins to flatten as the disease progresses. Radiographic evidence of degenerative joint disease eventually develops, including flattening of the femoral head, shallow acetabulum, periarticular osteophyte (bone spurs) production, thickening of the femoral neck, disolving of the sub-cartilage bone, and soft-tissue scar buildup.

Can It Be Treated? - Treatment options for dogs with hip dysplasia are a) conservative medical therapy and b) surgery. The preferred treatment depends on the dog's size, age, intended function, severity of joint laxity, the presence or absence of degenerative joint disease, clinician's preference, and the financial considerations of the owner. Patients are treated as outpatients unless surgery is performed.

Medical therapy tends to be, at best, just palliative because the joint instability is not corrected. Joint degeneration often progresses unless a corrective osteotomy procedure is performed early in the disease. However, surgical procedures can be used to salvage joint function once severe joint degeneration is present.

The triple pelvic osteotomy is a corrective procedure designed to reestablish congruity between the femoral head and acetabulum. The acetabulum is rotated in the immature patient (6- 12 months) to improve the dorsal coverage of the femoral head and correct the forces acting on the joint. This will minimize the progression of degenerative joint disease and may allow development of a more normal joint if performed early (before severe degeneration develops).



Total hip replacement is indicated to salvage function in mature dogs with severe degenerative disease unresponsive to medical therapy. Studies have indicated that pain-free joint function returns after total hip replacement in >90% of cases.

Approximately 80% of cases require only one side replacement for acceptable function. Complications reported after hip replacement include luxation, sciatic nerve irritation or malfunction, and infection.

Excision arthroplasty is the surgical removal of the femoral head and neck and is used to eliminate joint pain. Results are consistently better in smaller, lighter dogs (<50 lb.), and those with good hip musculature. After joint pain is eliminated, however, a slightly abnormal gait often persists.

Postoperative muscle atrophy is common, particularly in large dogs. Excision arthroplasty is primarily used as a salvage procedure when severe degenerative joint disease is present and pain cannot be controlled medically, or when total hip replacement is cost prohibitive. Medical therapy for hip dysplasia includes analgesics and anti-inflammatory medications to minimize joint pain, and stiffness and muscle atrophy caused by limited usage, and to reduce synovitis (joint capsule inflammation). The biomechanical abnormality within the hip joint is not corrected, however, and the degenerative process will likely progress. Frequently, medical therapy provides only temporary relief of signs. Polysulfated glycosaminoglycans have been shown to have a cartilage-protective effect in dogs with degenerative joint disease but have not been fully evaluated for treatment of hip dysplasia.

PREVENTION/AVOIDANCE - Hip dysplasia is best prevented by not breeding affected dogs. Pelvic radiographs can help identify abnormal dogs but may not identify all dogs carrying this genetic disease.

Dam/sire breedings that result in dysplastic offspring should not be repeated.

PREGNANCY - Dogs with hip dysplasia should not be bred. If a dysplastic bitch becomes pregnant, the added weight may make clinical signs become apparent.

ACTIVITY

- Exercise should be limited to the individual tolerance of the patient.

- Swimming is recommended to maintain joint mobility while minimizing weight bearing.

- Physiotherapy (passive joint motion) will reduce joint stiffness and help maintain muscle integrity.

DIET: Weight control is important to reduce the load applied to the painful joint and minimize weight gain associated with reduced exercise.

PATIENT MONITORING - Clinical and radiographic monitoring to assess progression of hip dysplasia is recommended. Clinical deterioration suggests an alternate dosage, alternate medication, or surgical intervention is indicated. Patients treated by triple pelvic osteotomy are monitored radiographically to assess osteotomy healing, implant stability, joint congruence, and progression of degenerative joint disease. Patients treated with hip replacement are monitored radiographically to assess implant stability.

EXPECTED COURSE AND PROGNOSIS

Joint degeneration usually progresses, though most dogs can lead normal lives with proper medical and/or surgical management.

