Hip dysplasia

What is hip dysplasia?

Hip dysplasia means abnormal development of the hip joint. It inevitably leads to the development of arthritis (osteoarthritis). Either the hip dysplasia or the secondary arthritis may cause hip pain.

Hip dysplasia is a genetic disorder caused by the combination of genes from the parents (dam and sire). During the first few months of life, as the hips are developing, they become unstable. As a result the ball (femoral head) and socket (acetabulum) move apart during weight bearing. This causes abnormal forces on the soft bones which leads to the ball becoming flattened and the socket becoming shallow. The process is self-perpetuating and causes damage to the covering of the bones (the articular cartilage). Cartilage damage is a key feature of the secondary osteoarthritis.

What are the signs of hip dysplasia?

Hip dysplasia is a common condition, especially in large breed dogs. The key signs are hind limb lameness and stiffness. The latter is generally most evident after rest following exercise. Difficulty rising and reluctance to jump or exercise are also common features. A rolling hind limb action may be seen in young dogs. More subtle signs include restlessness, moaning and licking the skin over the hip.

Signs tend to develop when the dog is immature and growing (five to 10 months of age) or when adult (perhaps a few years of age). When immature, it is the instability of the hip that causes the pain whereas in adult dogs it is the osteoarthritis which leads to discomfort.

How is hip dysplasia diagnosed?

Examination may reveal muscle wastage (atrophy), especially over the hips. Manipulation of the joints may cause increased pain and instability may be palpatible.

X-rays (radiographs) are necessary to diagnose hip dysplasia. They enable the severity of the abnormal joint development and presence of secondary osteoarthritis to be assessed.
How can hip dysplasia be treated?

The majority of dogs with hip dysplasia can be managed satisfactorily without the need for surgery. Exercise often needs to be controlled to some degree. Each dog will have its own threshold of duration and type of activity beyond which hip pain may increase. Hydrotherapy is often beneficial. Dogs that are overweight benefit from being placed on a diet. Tit-bits may need to be withdrawn and food portions reduced in size. Regular monitoring of weight may be necessary. Pain killers (anti-inflammatory drugs) may be indicated to make the dog more comfortable. Long-term drug therapy should be avoided if at all possible in view of potential side effects.

Some dogs with hip dysplasia fail to respond satisfactorily to conservative treatment and in these cases surgery may be indicated. The two key types of surgery are (1) reconstructive and (2) salvage.

1. **Reconstructive surgery**  
   In some young dogs (usually less than a year of age) the abnormal hip joint may be reconstructed to make it more stable. This involves cutting the pelvis and rotating the cup (acetabulum) over the ball (femoral head). The rotated section is secured in the new position with a specially designed plate. Either a triple pelvic osteotomy (TPO) or a double pelvic osteotomy (DPO) can be performed. Reconstructive surgery has the advantage of maintaining the dog’s own joint tissues and hopefully reducing the development of osteoarthritis. Unfortunately many young dogs with hip dysplasia are not good candidates for reconstructive surgery.

   The aftercare following DPO or TPO surgery is very important. Exercise has to be restricted for eight weeks until the cut bones heal. Long-term hip function is generally good. Further surgery or long-term medication is generally not necessary.

2. **Salvage surgery**  
   Adult dogs with hip dysplasia and secondary osteoarthritis that fail to respond to medical management may require salvage hip surgery. The principle options are to replace the hip with an artificial one (total hip replacement) or to remove the ball (femoral head removal or excisional arthroplasty).

   Total hip replacement generally results in significantly better limb function compared to femoral head removal and the recovery is much quicker. However, although uncommon, there are potential complications with total hip replacement surgery that need to be carefully considered prior to making a decision. With modern systems total hip replacement can be performed successfully in all sizes of patients.

   Femoral head removal provides a ‘false joint’ where the limb is supported on the pelvis by scar tissue and the surrounding muscles. Recovery following surgery is slow and the limb ends up slightly shorter. Aftercare, especially physiotherapy and hydrotherapy, is very important.

   Total hip replacement surgery involves replacing the painful joint with a plastic cup and a metal ball (acetabular and femoral prostheses). Care following surgery is critical to reduce the possibility of complications, such as dislocation of the prostheses. A rapid reduction in joint pain and improvement in limb function are to be expected. (See also Total hip replacement information sheet)

What is the outlook with hip dysplasia?

The outlook or prognosis with hip dysplasia and the associated osteoarthritis is generally good. As mentioned above many dogs can be managed successfully with conservative treatment involving modification of exercise and weight, with or without the need for anti-inflammatory painkiller drugs. Those that fail to respond satisfactorily may necessitate reconstructive procedures (DPO or TPO) or salvage surgery such as total hip replacement. The outcome of these procedures is generally very good, albeit that there are potential complications.