

Total Hip Replacement

Written for VSC by Dr. Andrew S. Levien, BVSc (hons), PgCertVS, MANZCVSc, DACVS-SA

Diseases of the hip joint are common. Hip dysplasia (HD) is the most common disease of the hip joint. It occurs primarily in large-breed dogs but can also affect small dogs and cats. HD is inherited, which means that it can pass down the line from parents to offspring. Other diseases of the hip can also occur, including trauma (fractures and dislocation/luxation) as well as Legg-Calves Perthes disease (also called avascular necrosis of the femoral head). Fortunately, all of these diseases are universally treatable, often with total hip replacement.

The hip joint is also called the coxofemoral joint and consists of the femoral head and the acetabulum. Imagine the joint as a “ball and socket,” with the femoral head being the “ball” and the acetabulum being the “socket.” Increased looseness of the two components of the hip is called hip dysplasia. Untreated HD leads to degenerative joint disease, better known as “old age osteoarthritis.” The X-Ray to the right shows a dog with severe hip osteoarthritis due to HD.

What are the symptoms of hip pain?

The symptoms of hip pain cause changes in a patient’s gait, activity level, and comfort. An acutely luxated (dislocated) hip can make a patient very painful and unable to walk. Other causes, such as Legg-Calve Perthes disease or hip dysplasia (HD), can be more subtle. HD can be diagnosed at any age. Typically, dogs are presented with signs of HD as puppies, while osteoarthritis develops during middle and older ages.



Presenting symptoms for diseases of the hip include: hind limb lameness (abnormal way of walking in the rear legs, such as favoring one leg over the other), difficulty rising, inability to jump into the car, refusal to use stairs, reluctance to exercise, and a tendency to be very tired after exercise and needing to lay down. Dogs often bunny-hop or skip when running and tend to be less active than littermates or other household dogs.

What is the diagnosis for hip dysplasia?

Hip dysplasia is commonly diagnosed by physical examination and X-Rays. Light sedation helps pain free manipulation of both hips, as the patient has to be placed in dorsal recumbency (on its back) on an X-Ray table and in lateral recumbency (on the side).

What are the treatment options for hip dysplasia?

Once hip dysplasia is diagnosed, the treatment consists of either medical (conservative) or surgical management.

Medical management includes weight reduction, pain management, nutraceuticals/joint supplements (e.g. glucosamine and chondroitin), and physical therapy. Medical management has some long-term disadvantages. First, it can be costly over the lifetime of the pet; second, it does not consistently remove

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pain associated with arthritis; and finally, it does not give the pet a biomechanically normal hip allowing full athletic activity (unlike a total hip replacement).

Total hip replacement (THR) restores the function of hip to normal and is the treatment of choice in all breeds of dog as well as cats. Some dogs needing a THR are as young as 7 months of age.

Total Hip Replacement

Hip replacement is an excellent procedure that removes the degenerated femoral head (ball) and acetabulum (socket) and replaces them with artificial components. The goal of the surgery is to improve quality of life by providing pain relief and allowing the pet to return to an active lifestyle. It is the same as the operation performed in humans. The acetabular component is comprised of ultra-high molecular weight polyethylene, while the femoral component is titanium or cobalt chrome. The components are either cemented into the bone or cementless (press fit). Your surgeon will determine which implant best suits your pet (see the X-Ray to the right). The cementless system relies on bone ingrowth into the implant for permanent fixation. In contrast, the cemented total hip replacement (THR) relies on bone on-growth onto the cement to provide fixation of the implant. THR has the potential to restore a pain-free, biomechanically normal hip joint and allow a return to full activity.



Femoral Head Ostectomy

This is a procedure where the femoral head and neck are removed (see the X-Ray to the right), creating a so-called false joint (pseudoarthrosis). The procedure generally alleviates pain, although the recovery can be prolonged and most often requires rehabilitation. Biomechanically, the leg is not as normal as it is after total hip replacement (THR)—this procedure has been super-seeded by THR.



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Can a total hip replacement be used for diseases other than hip dysplasia?

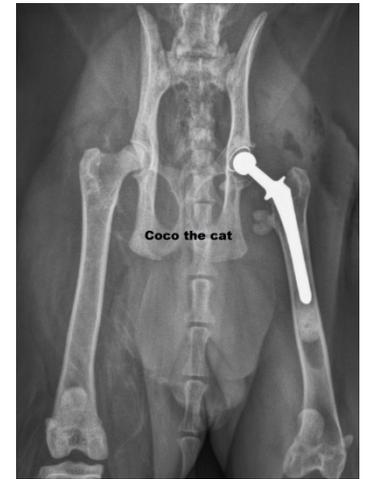
Yes, total hip replacement is a versatile procedure that can be used to alleviate pain and restore hip function for a number of diseases of the hip, including fractures, luxations, vascular problems, and malformations.

Will the total hip replacement wear out?

No, total hip replacements are designed using the same implants that are used in humans. The lifetime of such implants is at least 15-20 years, which is beyond the life expectancy of pets. Unless a problem arises, the implant should not need replacement.

Can a total hip replacement be used in a small dog or cat?

Yes, total hip replacement is an excellent choice for a small dog or cat. It restores pain-free, biomechanically normal hip function. Historically, many veterinarians were performing femoral head ostectomy (FHO) prior to the design and availability of implants for small pets. The total hip replacement is now an option for small animals weighing as little as 4 pounds. (See X-Rays of Coco the cat in the figure to the right.)



Is it possible to have both hips replaced at once?

In general, we stage the surgeries a minimum of 12 weeks apart. A large portion of dogs do well with only one hip replacement, by shifting their weight onto the side with the hip replacement. Quite often, pet owners return for the second side once they see how well their dog functions after total hip replacement.

How long is the recovery after a total hip replacement?

Animals are usually walking on the operated limb within 24 to 48 hours. The confinement period is six weeks of activity restriction, followed by four weeks of gradual return to activity (10 week total recovery). The confinement period is intended to allow the bone to grow into or onto the implant for permanent fixation.

How is the proper treatment selected?

Total hip replacement (THR) is the only option that will restore the biomechanics of the hip joint to normal with pain-free function. THR is one of the most successful operations used in people and animals. A femoral head ostectomy (FHO) is an old procedure where the femoral head (see previous page) is removed, creating a false hip joint (pseudoarthrosis). Although FHO alleviates pain, it has been shown scientifically to not restore the biomechanics of the normal hip joint. FHO generally has a three-month recovery. Alternatively, a triple pelvic ostectomy is an operation used to treat very young dogs with hip dysplasia only selected dogs are able to have this operation.

What are the potential complications of total hip replacement?

As with any operation, there are potential complications, some of which can be serious. Major complications include infection, hip luxation, or fracture of the femur or acetabulum. Generally, the complication rate is less than 5 percent.