

## Restoring Pets to Their Full Potential

### Before Surgery



The femoral head (ball) is partially out of the joint, indicating joint laxity (looseness). Over time, this leads to cartilage damage and arthritis.

This radiograph of a canine pelvis immediately before surgery shows bilateral subluxation of the femoral heads (on both sides, ball partially out of the socket) and arthritis, worse on the left. At this stage, dogs usually require medication, such as non-steroidal anti-inflammatory drugs. When discomfort can no longer be controlled with medical management, surgery becomes the best option.

### After Surgery



Acetabular Cup  
Femoral Head  
Femoral Stem

The same view, three months after surgery. The acetabular cup, femoral head, and femoral stem appear as dense white structures. The range of motion of the left hip is better than that of the right, which results in greater extension, making the left femur (thigh bone) appear longer than the right.

For more information,  
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BioMedtrix was founded in 1989 with the objective of designing, developing, and manufacturing state-of-the-art veterinary orthopedic implants. Our continuing mission is to provide quality in all aspects of product development, manufacturing, and customer service. Through research sponsorships and collaborations with the world's foremost surgeons, BioMedtrix continues to support the development of new programs to address veterinary needs.



## Canine Total Hip Replacement



*“Natasha was in constant pain before her THR surgery. She is now frequently found frolicking in Orion Oaks Dog Park.”*

Steve Funck

*Natasha's THR was performed on May 27, 2010*



## Frequently Asked Questions About THR

### What is canine total hip replacement (THR)?

Canine THR is a surgical procedure in which the arthritic hip joint surfaces are replaced with a new prosthetic ball and socket. The prosthesis is designed to fit precisely and mimics the anatomy of the original joint. The arthritic joint is pain free after total hip replacement.

### Why has THR been recommended for my dog?

THR has been recommended to alleviate the pain and/or disability associated with hip pathology. Specific common indications include arthritis secondary to hip dysplasia, traumatic hip luxation that cannot be maintained in place following reduction, specific indications associated with fractures of the femoral head or neck that do not have a good prognosis following surgical repair, and developmental problems such as avascular necrosis of the femoral head that leads to arthritis. The goal in all cases is to provide a pain-free joint and to restore normal joint function.

### What is hip dysplasia?

Hip dysplasia is an abnormal development and growth of the hip joint. Both hips are usually affected but symptoms may be more severe on one side. Hip dysplasia is manifested by varying degrees of laxity (looseness) of the hip joint with instability and malformation of the joint components. Arthritis is the long-term consequence of hip joint laxity.

### What are the clinical signs of hip dysplasia?

The signs of hip dysplasia may be subtle. They can include the presence of lameness in one or both hind legs and the reluctance to climb stairs or jump. Dogs that are affected often become less active and less playful. They may be reluctant to go on walks and their gait may be a “bunny hop” at certain speeds.

### What does THR surgery entail?

A THR involves removing both the arthritic ball (femoral head) and socket (acetabulum) and replacing them with an artificial ball and socket joint.

The surgical procedure is precisely planned using several radiographic (X-ray) views and specialized templates that match the available implant sizes.

The average length of a THR surgical procedure is approximately 75 minutes.

During surgery, the arthritic femoral head is removed, the arthritic acetabulum is prepared, and the acetabular component (socket) is implanted. Next, the femur is prepared, and the femoral component (stem) is implanted. The femoral head (ball) is placed on the femoral stem, and the new joint is articulated by placing the femoral head (ball) within the acetabulum (socket).

### What are the alternatives to THR?

Alternatives to THR include medical management of the pain or a surgical salvage procedure called a femoral head ostectomy (FHO). Medical management can include optimization of body weight, administration of non-steroidal anti-inflammatory drugs, nutritional supplementation, or implementation of a rehabilitation program. FHO surgery removes the femoral head and neck which severely alters the biomechanics of the hip joint.

### What are the benefits of THR over an FHO?

Pain relief following THR is more predictable than after FHO. Dogs with THR are expected to be pain-free for life. Research has shown objective evidence that dogs return to normal function in three to six months following THR. FHO is less predictable and the joint may remain painful. Dogs that have had successful THR surgery do not require long-term drug therapy. In addition to significant cost savings, this will eliminate the potential problem of long-term complications associated with chronic use of anti-inflammatory drugs.

### What are the risks of THR surgery?

THR, like all surgeries, carries a low risk of anesthetic and infection complications. Additional risks can include femur fracture and luxation of joint components. In rare instances, the sciatic nerve can be injured during the surgery. Sciatic nerve problems are usually transient and recovery occurs within a few weeks. If complications arise, they can usually be resolved successfully.



*“Zora’s THR has enabled her to excel as a wildfowling dog in all weather conditions. She easily outperforms our Labrador Retriever in terms of speed and performance.”*

Paul Mara, Wakefield, UK



*“Josephine loves to go on hikes and has had no problem with trails up to 8 miles long. Giving her a hip replacement was the best thing I could have done for her.”*

Josephine’s THR was performed on May 10, 2011

### Are there reasons why my dog shouldn’t have THR surgery?

THR is not performed on dogs with cancer or other major medical problems of higher priority for treatment. Dogs with lameness caused by problems other than hip pain including problems affecting the knee joint or spine must be carefully evaluated before THR is performed.

### How common are THR in dogs?

The first THR in a dog was performed in 1957. Since their introduction in 1990, over 54,000 procedures have been performed using BioMedtrix implants. THR can be performed on dogs ranging from five through 170 pounds, and also on cats.

### What is the success rate for canine THR procedures?

The success rate is very high. More than 95% of the patients who receive a THR should be able to use the new hip for the rest of their lives.

### How long will the implant last?

THR implants are expected to last a lifetime.

### How long will my dog be in the hospital following THR surgery?

Most veterinarians keep dogs for one to three days following surgery. In some rare instances, high-risk patients may be hospitalized for longer periods to provide additional assistance or to protect the stability of the new prosthetic joint.

### What is the typical recovery time for THR and what is involved?

Dogs often begin using their operated limb on the day of surgery. Most dogs use their operated leg quite well within a couple of weeks but activity should be supervised and limited to leash walks for approximately six weeks after surgery.