Total Hip Arthroplasty

A total hip arthroplasty/replacement is a surgical intervention used for advanced osteoarthritis of the hip joint, a fracture, or other conditions when functional activities such as transitioning from sitting to standing, walking, or climbing stairs may be difficult and painful. You may feel stiff or uncomfortable while resting and it may be difficult for you to put on shoes and socks.

If modifications to your daily activities, the use of walking aids, and medications do not sufficiently help your symptoms, you may consider hip replacement surgery. Hip replacement surgery is a safe and effective procedure that can relieve your pain, increase motion, and help you get back to enjoying normal, everyday activities.

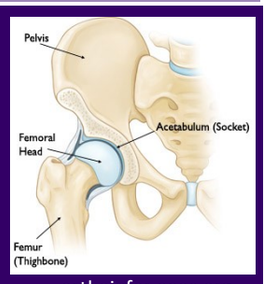
Indications for Surgery

Pain: located in the groin and buttock with possible radiation into the thigh and occasionally below the knee

Functional Limitations: walking, climbing stairs, decreased range of motion or stiffness causing difficulty with putting shoes and socks on, difficulty transitioning from sitting to standing

Anatomy of the Hip:

- The hip is one of the body's largest joints.
  It is a ball-and-socket joint.
  - The socket is formed by the acetabulum, which is part of the large pelvis bone.
  - The ball is the femoral head, which is the upper end of the femur (thighbone).
- The bone surfaces of the ball and socket are covered with articular cartilage, a smooth tissue that cushions the ends of the bones and enables them to move easily.
- A thin tissue called synovial membrane surrounds the hip joint. In a healthy hip, this membrane makes a small amount of fluid that lubricates the cartilage and eliminates almost all friction during hip movement.
- Bands of tissue called ligaments (the hip capsule) connect the ball to the socket and provide stability to the joint.



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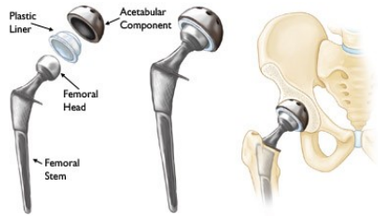

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Common Causes of Hip Pain

Osteoarthritis (OA): It is an age related "wear and tear" type of arthritis. This typically occurs over the age of 50 and often in individuals with a family history of arthritis. The cartilage cushioning the bones of the hip wears away. The bones then run against each other, causing hip pain and stiffness. OA may also be caused or accelerated by subtle irregularities in how the hip developed in childhood.

Rheumatoid Arthritis (RA): It is an autoimmune disease where the synovial membrane becomes inflamed and thickened. This chronic inflammation can damage the cartilage, leading to pain and stiffness. RA is the most common type of "inflammatory arthritis."

Post-traumatic Arthritis: This type can follow a serious hip injury or fracture. The cartilage may become damaged and lead to hip pain and stiffness overtime.

Avascular Necrosis: An injury to the hip joint, such as a dislocation or fracture, may limit the blood supply to the femoral head. The lack of blood may cause the surface of the bone to collapse, and arthritis will result. Some diseases can also cause avascular necrosis

Childhood Hip Disease: Infants and children may have hip problems. Even though the problems are successfully treated during childhood, they may still cause arthritis later on in adulthood. This can happen because the hip may not grow normally, and the joint surfaces are affected.

In a total hip replacement/arthroplasty, the damaged bone and cartilage is removed and replaced with prosthetic components.

- The damaged femoral head is removed and replaced with a metal stem that is placed into the hollow center of the femur. The femoral stem may be either cemented or "press fit" into the bone.
- A metal or ceramic ball is placed on the upper part of the stem. This ball replaces the damaged femoral head that was removed.
- The damaged cartilage surface of the socket (acetabulum) is removed and replaced with a metal socket. Screws or cement are sometimes used to hold the socket in place.
- A plastic, ceramic, or metal spacer is inserted between the new ball and the socket to allow for a smooth gliding surface.
- The prosthetic components may be "press fit" into the bone to allow your bone to grow onto the components or they may be cemented into place. The decision to press fit or to cement the components is based on a number of factors, such as the quality and strength of your bone. A combination of a cemented stem and a non-cemented socket may also be used.
- Your orthopaedic surgeon will choose the type of prosthesis that best meets your needs.

Risk Factors After Surgery

Infection

Blood clots

Leg-length discrepancy

Dislocation

Loosening and implant wear

Nerve or blood vessel injury

Fracture

Stiffness

Precautions After Surgery

Do NOT cross your legs

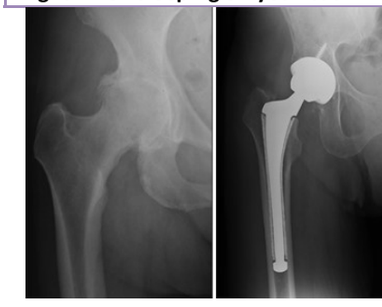
Do NOT bend your hips >90°

Do NOT turn your feet excessively inward or outward

Do NOT twist

Avoid falling

Use a pillow in between your legs at night when sleeping on your back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X-rays before and after total hip replacement. In this case, non-cemented components were used

Physical Therapy Goals After Surgery

Regain strength and muscular endurance

Improve cardiopulmonary endurance

Reduce contractures while adhering to motion precautions

Improve postural stability, balance, and gait

Prepare for a full level of functional activities

Caring For Your NEW Hip

Engage in regular low impact exercise programs to maintain mobility and strength

Take precautions in order to avoid falls and injuries

Make sure your dentist knows about your artificial hip. You will need to take antibiotics before dental procedures.

Follow up with your surgeon periodically for routine follow-up examinations.

Prognosis

Hip replacement surgery is successful more than 90% of the time.

Expect your new hip to reduce the pain you felt before surgery and increase your range of motion in the joint.

Do not expect to do anything you couldn't do before surgery such as high impact activities of running and/or playing basketball. Although in time you may be able to return to low impact activities such as swimming, playing golf, and riding a bike.

You may activate metal detectors required for security in airports and some buildings. Notify the security agent about your hip replacement if the alarm is activated. You may also ask your surgeon for a card confirming your artificial hip.

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