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Orthopaedic Surgery

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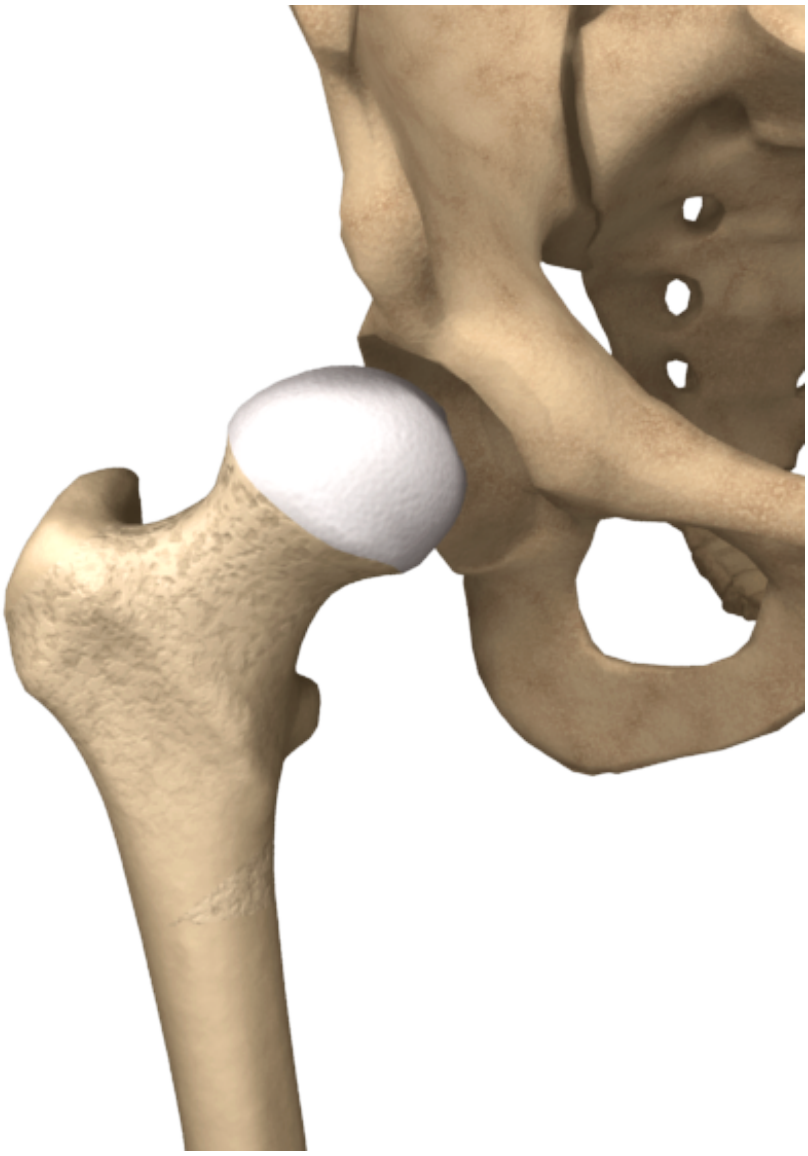
Hip Replacement - Anterior

Anterior hip replacement surgery is an alternative to hip replacements where the surgeon accesses the hip joint from the side or through the buttocks. The anterior procedure is sometimes called a mini hip replacement or mini anterior hip replacement because it uses an incision that can be as small as 3-4 inches. It's also known as a muscle-sparing hip replacement because it doesn't require detaching or cutting muscles or tendons. Consequently, patients usually experience better mobility, fewer activity restrictions, and a shorter recovery time than patients who've had other hip replacement procedures. The location in which the hip joint is accessed is what makes the anterior approach unique; as with other hip replacements, worn hip components are replaced with a titanium socket lined by a plastic or ceramic insert, and a titanium thighbone prosthesis connected to a metal or ceramic ball that rotates within the socket.



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Introduction

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Doctor's Personal Note: ***A Message From Your Doctor***

Thank you for visiting our website and viewing our 3D Animation Library. These animations should assist you in better understanding your condition or procedure. We look forward to answering any additional questions you may have at our next appointment.

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Anatomy, Risks, and Patient Selection

The hip joint is made of the ball-shaped femoral head atop the thighbone and the socket-shaped acetabulum at the union of the three bones that form the hip bone, or pelvis. A fibrous sac made of connective tissue, known as the joint capsule, encloses and lubricates the joint. Outside the capsule, the hip is stabilized by a network of muscles that also allow you to move your leg forward (flexors), back (extensors), across the body (adductors) and to the side (abductors).

Preserving muscles and tendons provides certain advantages, but anterior hip replacements can be more technically challenging than those using the posterior approach. A skilled surgeon and staff who are experienced with the technique will minimize these any risks. Although more anterior hip replacements are being done each year, the procedure is not ideal for every patient. People with very fragile bones may not be good candidates for the procedure, and another approach with a larger incision may be required for people who are very muscular or obese. Similarly, patients with an abnormally shaped acetabulum, those who require bone grafting, and people with instrumentation and hardware from prior hip surgery may be advised by their surgeon that the posterior approach may be a better option.

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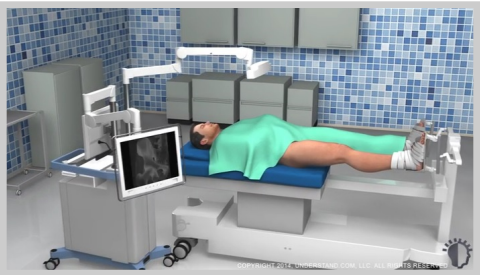
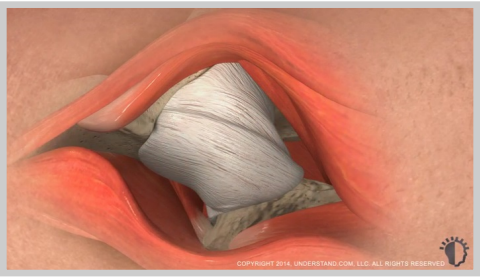


Preparation

Prior to the procedure, X-rays will be taken to make measurements and develop an operative plan. The day of your surgery, you may undergo general anesthesia, in which an injection or a gas puts you to sleep, or regional anesthesia, where an injection or small tube (catheter) delivers medication to the spinal column, numbing you from the waist down.

You will be positioned on your back. A specialized operating table may be used for this procedure. A portable X-ray device called a fluoroscope, which allows the surgeon to see accurate details at points during the procedure, is positioned over the operating table. In some surgical centers, computer-assisted imaging will also be positioned to help guide the procedure.

The surgical site will be cleaned and draped for surgery, and a series of lines are often drawn to help align the skin at the end of the procedure.



Accessing the Joint

A single incision is made through the skin at the front of the hip. Underlying fatty material and tissue covering the musculature are held apart. Next, your surgeon will find the interval between the tensor fascia lata muscle and the rectus femoris and separate them to access the underlying hip joint capsule. The joint capsule is opened to expose the underlying bone. A portion of the labrum, which is a layer of firm, rubbery tissue that surrounds the acetabulum and seats the femoral head, may be removed along with any bone spurs that may have developed.

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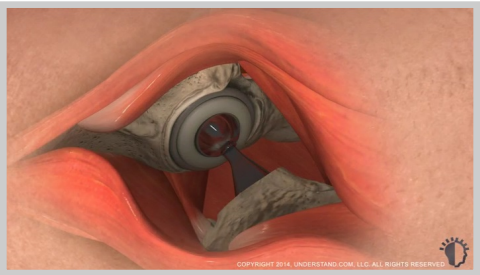

Hip Replacement Procedure

An oscillating saw and bone chisel (osteotome) are used to cut through the femoral neck and the femoral head and neck are removed. Surgical technique varies, and some surgeons will do this step before removing the labrum. Next, a specialized instrument called a reamer is employed to remove the soft tissues lining the acetabulum and to prepare the bone for the socket cup. Once the correct shape and position of the socket are confirmed under X-ray, the cup is press-fit directly into the bone. The rough outer surface holds it in place by friction but screws are occasionally placed for added fixation. New bone growth after the procedure will secure it more permanently. The liner is inserted into the cup to complete the socket-side of the repair.

To prepare the femur, an instrument called a broach will be hammered down the main shaft and then removed to create a space for the femoral prosthesis. A trial prosthesis is added and once a trial head is positioned on a stem, the hip is placed back into its normal position for X-rays that will confirm accurate positioning and length. Once any necessary changes to the stem length or position are determined, the final femoral prosthesis is inserted into the opening in the femur. This stem will usually have a porous surface that allows new bone growth to secure it. A permanent ball-shaped femoral head is affixed atop the stem and the leg is rotated to place the ball in the socket. Once an ideal repair is confirmed with X-rays, the capsule, the membrane covering muscles that were separated, and tissues under the skin are closed with dissolvable sutures. A temporary drainage tube is sometimes placed to prevent fluid buildup during initial healing, and removable staples, sutures or dissolving sutures are used to close the skin incision.

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Recovery and Results

There are few dislocations after anterior hip replacement, so unlike other procedures that usually require movement restrictions to prevent accidentally dislocating the hip while healing, you will be able to bend at the hip, cross your legs, and sleep without a pillow between your knees. Most patients return home within two to three days of the procedure, but some leave the day after or even the same day as the procedure. Drain tubes will be removed the day after surgery and if they were used, the external staples or sutures are usually removed in 10 days to two weeks. Your scar will fade considerably over time.

Because muscles are not cut or detached, there is often minimal pain during recovery and patients generally don't need extensive physical therapy. Your surgeon will recommend when you can return to work, specific sporting activities, and driving. Anterior hip replacement typically has a faster initial recovery period than other hip replacement procedures, but the long term results are the same. The anterior hip replacement procedure provides complete or nearly complete pain relief for a wide variety of patients, and has a high degree of patient satisfaction.

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