

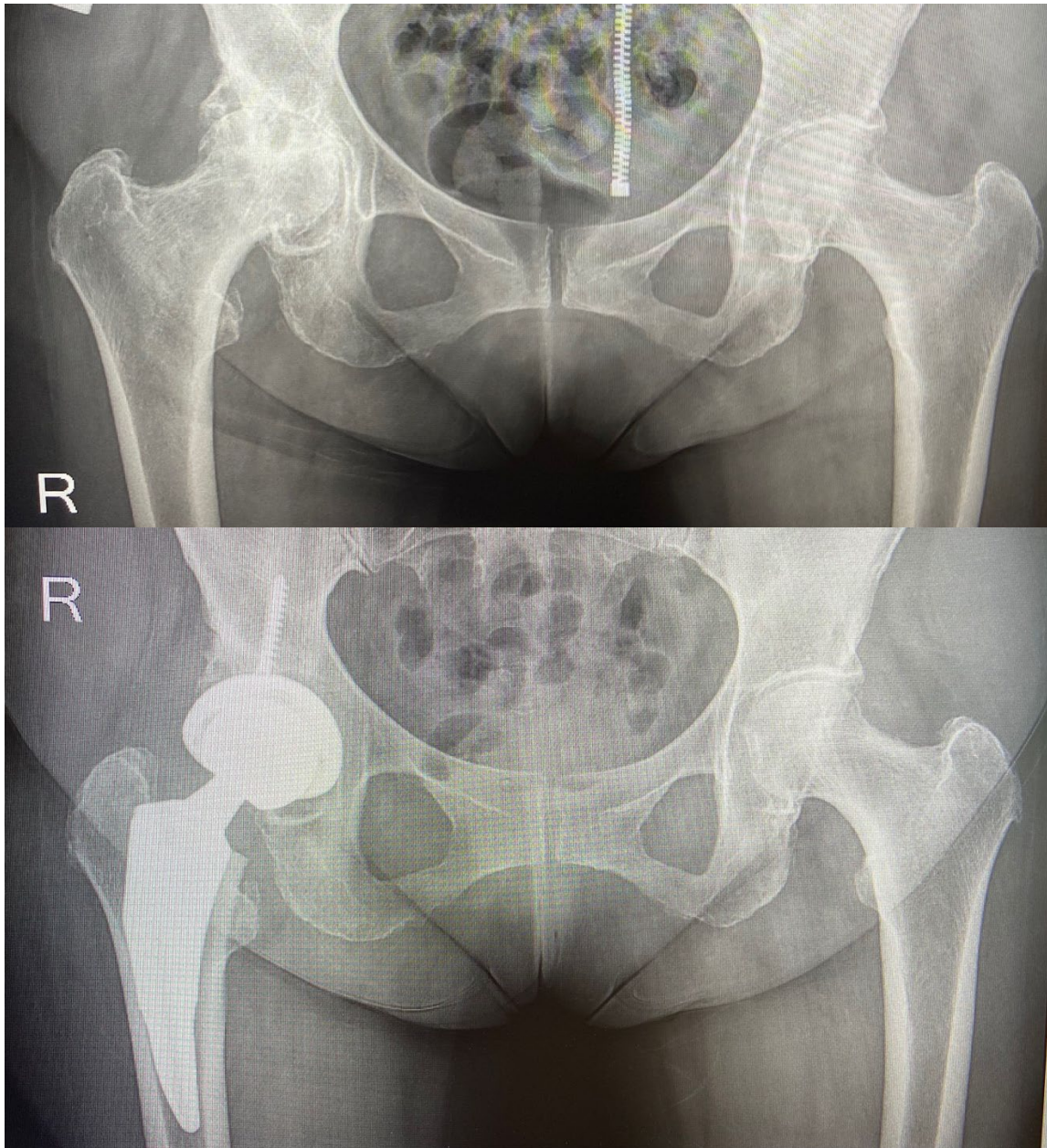
DR SIRAJ A. SAYEED
SOUTH TEXAS BONE AND JOINT INSTITUTE
5510 PRESIDIO PARKWAY, STE 2401
SAN ANTONIO, TX 78249
PHONE: (210) 696-2663



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A Patient's Guide to Artificial Joint

Replacement of the Hip



Introduction

A hip that is painful as a result of osteoarthritis (OA) can severely affect your ability to lead a full, active life. Over the last 40 years, major advancements in hip replacement have improved the outcome of the surgery greatly. Hip replacement surgery (also called *hip arthroplasty*) is becoming more and more common as the population of the world begins to age.

This guide will help you understand

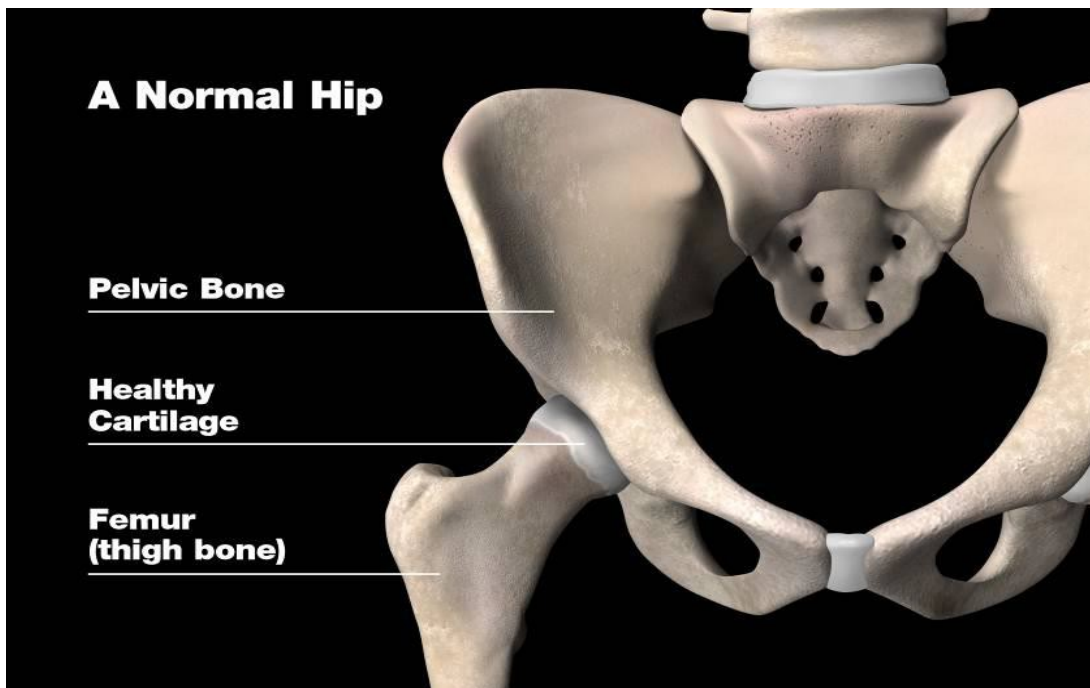
- what your doctor hopes to achieve with hip replacement surgery
- what to expect before your operation
- what happens during the procedure
- what to expect after your operation

Anatomy

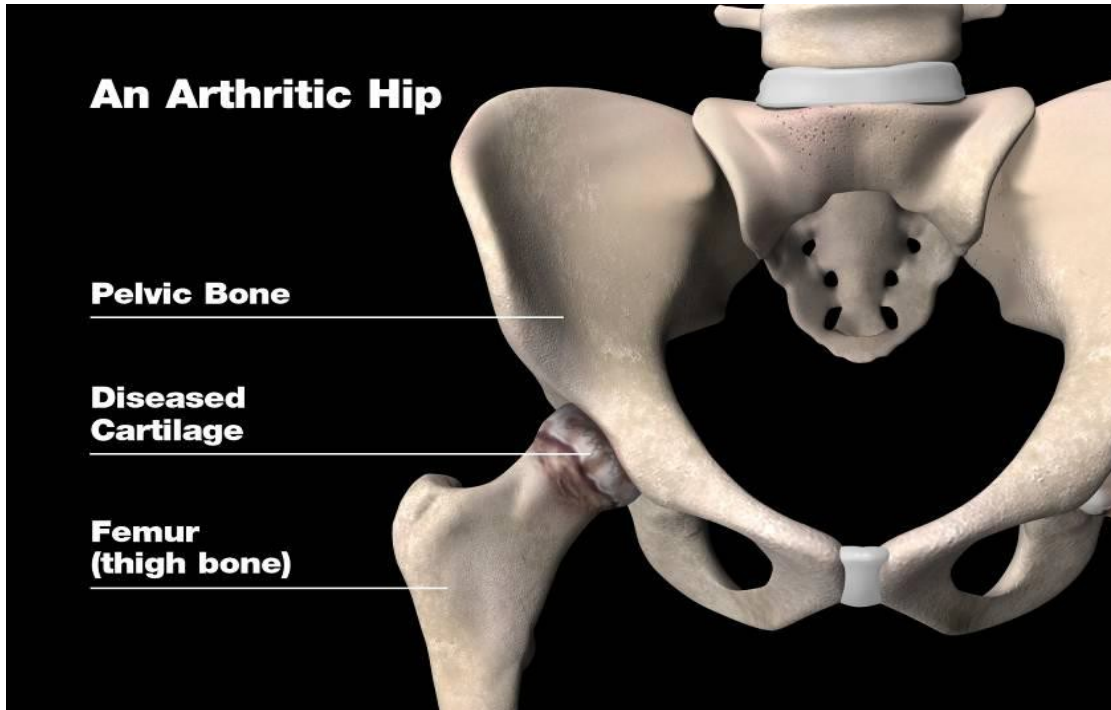
How does the hip normally work?

The hip joint is a ball-and-socket joint. The hip socket is called the *acetabulum* and forms a deep cup that surrounds the ball of the upper thigh bone, known as the *femoral head*. The thick muscles of the buttock surround the hip in the back and the thigh muscles surround the hip in the front.

The surface of the femoral head and the inside of the acetabulum are covered with *articular cartilage*. This material is about one-quarter of an inch thick in most large joints. The articular cartilage surface is a tough, slick material that allows the surfaces to slide against one another without damage to either surface.



When the articular cartilage degenerates and the underlying bones rub together, patients can experience pain. This is called arthritis. There currently is no way to replace the articular cartilage and patients are initially treated with medication, activity modification and possibly with injections. However, eventually the patient will likely undergo a total hip replacement (arthroplasty).



Rationale

What does the doctor hope to achieve with surgery?

The main reason for replacing any arthritic joint with an artificial joint is to stop the bones from rubbing against each other. Replacing the painful and arthritic joint with an artificial joint gives the joint a new surface, which moves smoothly without causing pain. The goal is to help people return to many of their activities with less pain and greater freedom of movement.

Preparation

How should I prepare for surgery?

The decision to proceed with surgery should be made jointly by you and your doctor. The decision should only be made after you understand the treatment options, risks, benefits and possible complications of the procedure.

Once you decide to proceed with surgery, several things may need to be done. Dr. Sayeed may suggest a complete physical examination by your medical or family doctor. This is to ensure that you are in the best possible condition to undergo the operation. You will definitely need to see your dentist as well to have a complete examination of your mouth. This is to ensure that you don't have any dental infections that may put your hip replacement at risk of infection. A letter from your dentist will need to be brought to Dr. Sayeed's office to confirm that you are clear from dental infections.

If you have seen a cardiologist in the past for any cardiac problems such as heart attack, stroke, stents, palpitations, atrial fibrillation or symptoms of chest pain and shortness of breath, you will need to be cleared by a cardiologist. This should involve a workup with either an echocardiogram or stress test.

In addition to being medically cleared for surgery, you may consider a couple weeks of pre-rehabilitation with a physical therapist who will be managing your rehabilitation after the surgery. The therapist can begin the teaching process to help you understand the exercises that you must do after the surgery as well as ensure that you have excellent muscle strength in order to have optimal outcomes with rehabilitation.

It is normal to be nervous prior to surgery. To help you better understand what to expect before and after surgery you will be required to attend a joint class at the hospital. This is an informative meeting giving patients details about what to expect after surgery. This can be beneficial for those who have many questions or maybe even feeling a little anxious.

One of the biggest risks of the surgery that you will learn about at your visit with Dr. Sayeed as well as the joint class is the risk of a blood clot. To combat this risk a couple of different methods are used so that the risk is minimal, 1-3%. One of the things you must do is wear sequential leg compression devices for 28 days after surgery. The two brands of these are Venapro or Plasmaflo. You wear these on both legs to compress your calf muscles while you are sleeping or laying down for extended periods (1+ hours). You can purchase these devices at Dr. Sayeed's office for \$300. Another option is to obtain them from a friend, family member, or online such as EBay. However, it is recommended that these be new or ensure that the battery will last throughout the night (8 hours) if you choose to go that route. These should be obtained by the time of your surgery.

Surgical Procedure

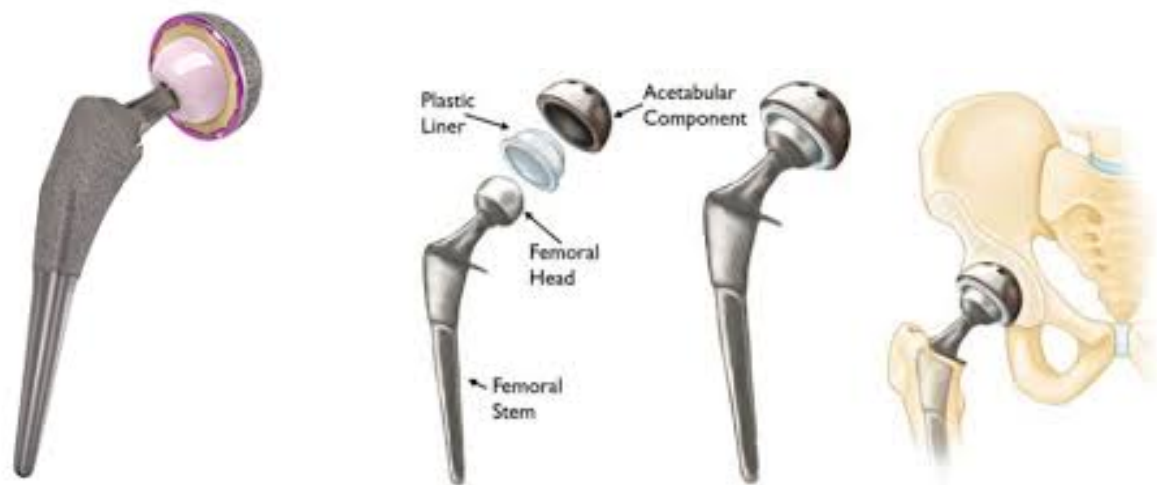
What happens during the operation?

Before we describe the procedure, let's look first at the artificial hip itself.

The Artificial Hip

The *acetabular component* (socket) replaces the acetabulum. The acetabular component is made of a metal shell with a plastic inner liner that provides the bearing surface. The plastic used is so tough and slick that you could ice skate on a sheet of it without much damage to the material.

The *femoral component* (stem and ball) replaces the femoral head. The femoral component is made of metal. A metal stem goes inside the middle of the femur bone and a ceramic ball is attached to the stem.



The Operation

The surgeon begins by making an incision on the front of the thigh to allow access to the hip joint.

Once the hip joint is entered, the surgeon dislocates the femoral head from the acetabulum. Then the femoral head is removed by cutting through the femoral neck with a power saw.

The acetabulum or “socket” is usually prepared first. The surgeon uses a power drill and a special reamer (a cutting tool used to enlarge or shape a hole) to remove cartilage from inside the acetabulum. The surgeon shapes the socket into the form of a half-sphere. This is done to make sure the metal shell of the acetabular component will fit perfectly inside. After shaping the acetabulum, the surgeon tests the new component to make sure it fits just right.

The metal shell is held in place by the tightness of the fit and by using a screw to hold the shell in place.

To begin replacing the femur, special rasps (filing tools) are used to shape the hollow femur to the exact shape of the metal stem of the femoral component. Once the size and shape are satisfactory, the stem is inserted into the femoral canal.

Again, the stem is held in place by the tightness of the fit into the bone (similar to the friction that holds a nail driven into a hole that is slightly smaller than the diameter of the nail).

The metal or ceramic ball that makes up the femoral head is then inserted.

Once the surgeon is satisfied that everything fits properly, the incision is closed with several layers of stitches. The stitches are under the skin only. A glued mesh is placed on top of the incision.

Complications

What might go wrong?

As with all major surgical procedures, complications can occur. This document doesn't provide a complete list of the possible complications, but it does highlight some of the most common problems. Some of the most common complications following hip replacement surgery are

- anesthesia complications
- thrombophlebitis (blood clot)
- infection
- dislocation
- loosening

Anesthesia Complications

Most surgical procedures require that some type of anesthesia be done before surgery. A very small number of patients have problems with anesthesia. These problems can be reactions to the drugs used, problems related to other medical complications, and problems due to the anesthesia. Be sure to discuss the risks and your concerns with your anesthesiologist.

Thrombophlebitis (blood clots)

Thrombophlebitis, sometimes called deep venous thrombosis (DVT), can occur after any operation, but it is more likely to occur following surgery on the hip, pelvis, or knee. DVT occurs when the blood in the large veins of the leg forms blood clots. This may cause the leg to swell, become warm to the touch, and painful.

If the blood clots in the veins break apart, they can travel to the lung, where they lodge in the capillaries and cut off the blood supply to a portion of the lung. This is called a *pulmonary embolism*. (*Pulmonary* means lung, and *embolism* refers to a fragment of something traveling through the vascular system.)

Most surgeons take preventing DVT very seriously. There are many ways to reduce the risk of DVT, but probably the most effective is getting you moving as soon as possible. Two other commonly used preventative measures include

- pressure stockings and compressive devices that keep the blood in the legs moving
- medications that thin the blood and prevent blood clots from forming.

Infection

Infection can be a very serious complication following artificial joint replacement surgery. The chance of getting an infection following total hip replacement is probably around one percent. Some infections may show up very early, even before you leave the hospital. Others may not become apparent for months, or even years, after the operation. Infection can spread into the artificial joint from other infected areas. Dr. Sayeed will advise you to take antibiotics when you have dental work or surgical procedures on your bladder or colon to reduce the risk of spreading germs to the joint.

Dislocation

Just like your real hip, an artificial hip can dislocate if the ball comes out of the socket. There is a greater risk just after surgery, before the tissues have healed around the new joint, but there is always a risk. The physical therapist will instruct you very carefully how to avoid activities and positions which may have a tendency to cause a hip dislocation. A hip that dislocates more than once may have to be *revised* to make it more stable. This means another operation.

Loosening

One of the reasons that artificial joints fail continues to be a process of loosening where the metal or cement meets the bone. Great advances have been made in extending how long an artificial joint will last, but some will loosen and require a revision. Hopefully, you can expect 30 years of service from an artificial knee. A loose prosthesis is a problem because it usually causes pain. Once the pain becomes unbearable, another operation will probably be required to revise the hip replacement.

After Surgery

What happens after surgery?

After surgery, your hip will be covered with a padded dressing. Special boots or stockings are placed on your feet to help prevent blood clots from forming. A triangle-shaped cushion may be positioned between your legs to keep your legs from crossing or rolling in.

If your doctor used a general anesthesia, a nurse or respiratory therapist will visit your room to guide you in a series of breathing exercises. You'll use an *incentive spirometer* to improve breathing and avoid possible problems with pneumonia.

Physical therapy treatments are scheduled one to three times each day as long as you are in the hospital. Your first treatment is scheduled soon after you wake up from surgery. Your therapist will begin by helping you move from your hospital bed to a chair. By the second day, you'll begin walking longer distances using your crutches or walker. You will be able to put full weight down when standing or walking. Ankle and knee movements are used to help pump swelling out of the leg and to prevent the formation of blood clots.

Patients are usually able to go home after spending one to two days in the hospital. You'll be on your way home when you can demonstrate a safe ability to: get in and out of bed, walk up to 75 feet with your crutches or walker, can tolerate food and water and consistently remember to use your hip precautions. Patients who still need extra care or have limited help at home may be sent to a rehabilitation hospital until they are safe and

ready to go home.

Your first follow-up is a wound check about 14 days after surgery. Follow-up will usually be at 2 weeks, 6 weeks, 3 months, 6 months and then annually. However, you may need to follow-up more often.

Patients who have an artificial joint will sometimes have episodes of pain, but when you have a period that lasts longer than a couple of weeks you should consult your doctor. During the examination, the orthopedic surgeon will try to determine why you are feeling pain. X-rays may be taken of your artificial joint to compare with the ones taken earlier to see whether the joint shows any evidence of loosening.

Rehabilitation

What should I expect during my recovery?

After you are discharged from the hospital, you will need to continue with hip precautions for 6 weeks. No hip flexion (bending) greater than 90 degrees, no crossing your leg (bringing the operative knee past the midline), and no extending your leg backwards. These safety tips may require the use of a raised commode seat and bathtub bench, and also include raising the surfaces of couches and chairs. This keeps your hip from bending too far when you sit down. Bath benches and handrails can improve safety in the bathroom. Other suggestions may include the use of strategic lighting and the removal of loose rugs or electrical cords from the floor.

You should use your walker or crutches as needed while you regain your strength. Most patients progress to using a cane in 2-3 weeks.

Patients are usually able to drive in three weeks and walk without a walking aid by four to six weeks. Upon the approval of the physician, patients are generally able to resume sexual activity by one to two months after surgery.

You will have home physical therapy for the first 3 weeks. However, there is not a strong need for physical therapy afterwards. Just focus on walking and activities of daily living and continue the exercises you learned from therapy. Every week, you should increase your walking time by 5 minutes. You can start hip strengthening exercises at 6 weeks. A few visits to outpatient physical therapy may be needed for patients who have problems walking or who need to get back to heavier types of work or activities.

Impact activities are not allowed after a total knee replacement. This includes any activities that have running or jumping associated with them. Some activities that are OK to return to after total hip replacement are: walking, hiking, swimming, golfing, bowling, fishing, doubles tennis, and riding a bicycle. Please consult your orthopedic surgeon prior to returning to activities to make sure they are allowed after total hip replacement.