

Explanation of Diagnosis and Procedure

Whether you have just begun exploring treatment options or have already decided with your orthopedic surgeon to undergo hip replacement surgery, this information will help you understand the benefits and limitations of total hip replacement. This article describes how a normal hip works, the causes of hip pain, what to expect from hip replacement surgery, and what exercises and activities will help restore your mobility and strength and enable you to return to everyday activities.

If your hip has been damaged by arthritis, a fracture or other conditions, common activities such as walking or getting in and out of a chair may be painful and difficult. Your hip may be stiff and it may be hard to put on your shoes and socks. You may even feel uncomfortable while resting.

If medications, changes in your everyday activities, and the use of walking aids such as a cane are not helpful, you may want to consider hip replacement surgery. By replacing your diseased hip joint with an artificial joint, hip replacement surgery can relieve your pain, increase motion, and help you get back to enjoying normal, everyday activities.

First performed in 1960, hip replacement surgery is one of the most important surgical advances of the last century. Since 1960, improvements in joint replacement surgical techniques and technology have greatly increased the effectiveness of total hip replacement. Today, more than 193,000 total hip replacements are performed each year in the United States. Similar surgical procedures are performed on other joints, including the knee, shoulder, and elbow.

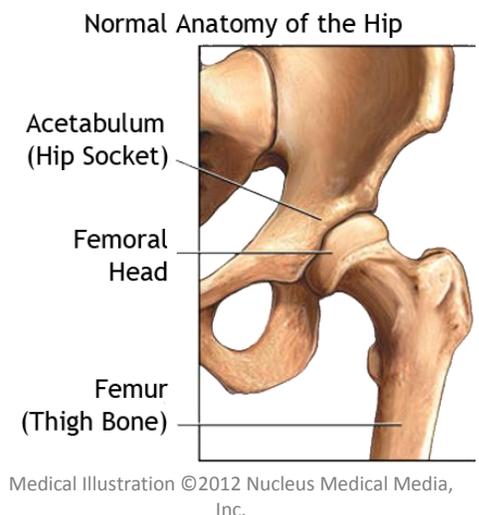
Normal Hip Anatomy

The hip is one of the body's largest weight-bearing joints. It consists of two main parts: a ball (femoral head) at the top of your thighbone (femur) that fits into a rounded socket (acetabulum) in your pelvis. Bands of tissue called ligaments (hip capsule) connect the ball to the socket and provide stability to the joint. The bony surfaces of the ball and socket have a smooth durable cover of articular cartilage that cushions the ends of the bones and enables them to move easily.

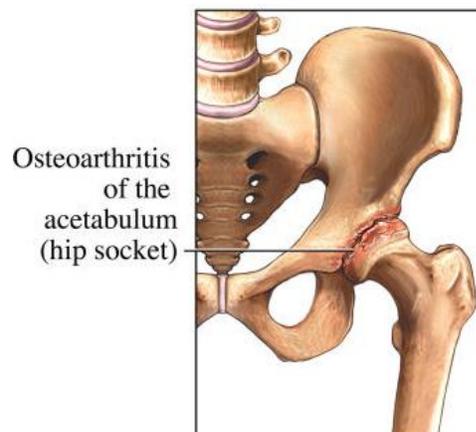
A thin, smooth tissue called synovial membrane covers all remaining surfaces of the hip joint. In a healthy hip, this membrane makes a small amount of fluid that lubricates and almost eliminates friction in your hip joint. Normally, all the parts of your hip work in harmony, allowing you to move easily and without pain.

Common Causes of Hip Pain and Loss of Hip Mobility

The most common cause of chronic hip pain and disability is arthritis. Osteoarthritis, rheumatoid arthritis, and traumatic arthritis are the most common forms of this disease.



- **Osteoarthritis** usually occurs in people 50 years of age and older and often individuals with a family history of arthritis. It may be caused or accelerated by subtle irregularities in how the hip developed. In this form of the disease, the articular cartilage cushioning the bones of the hip wears away. The bones then rub against each other, causing hip pain and stiffness.
- **Rheumatoid arthritis** is an autoimmune disease in which the synovial membrane becomes inflamed, produces too much synovial fluid, and damages the articular cartilage, leading to pain and stiffness.
- **Traumatic arthritis** can follow a serious hip injury or fracture. A hip fracture can cause a condition known as osteonecrosis. The articular cartilage becomes damaged and, over time, causes hip pain and stiffness.



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The Surgical Procedure

The surgical procedure takes a few hours. The orthopedic surgeon removes the damaged cartilage and bone and then position new metal, plastic, or ceramic joint surfaces to restore the alignment and function of the hip.

Total Hip Replacement

Many different types of designs and materials are currently used in artificial hip joints. All of them consist of two basic parts: the ball component (made of a highly polished strong metal or ceramic material) and the socket component (a durable cup made of plastic, ceramic, or metal which may have an outer metal shell).

An uncemented prosthesis has been developed and is used most often in younger, more active patients with strong bone. The prosthesis may be coated with textured metal or a special bone-like substance, which allows bone to grow into the prosthesis.

Surgical cement may be used to fill the gap between the prosthesis and remaining natural bone to secure the artificial joint. A combination of a cemented stem and an uncemented socket may be used. Your orthopedic surgeon will choose the type of prosthesis that best meets your needs.



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Less Invasive Total Hip Replacement

Over the past several years, orthopedic surgeons have been developed new less invasive surgical techniques for inserting total hip replacement implants through smaller incisions. This is a rapidly evolving area. Although certain techniques have proven to be safe, others may be associated with an increased risk of complications, such as nerve and artery injuries, wound healing problems, infection, fracture of the femur, and incorrect positioning of the implants, which can contribute to premature wear, dislocation, and loosening of your hip replacement. We perform less invasive surgery whenever possible to minimize trauma, decrease pain, and increase your chances of a full recovery.

Patients who have marked deformity of the joint, those who are heavy or muscular, and those with other health problems that can contribute to wound healing problems appear to be at higher risk of problems. Please talk to your orthopedic surgeon about less invasive hip replacement surgery and the possible risks and benefits.

Is Hip Replacement Surgery for You?

Whether to have hip replacement surgery should be a cooperative decision made by you, your family, your primary care doctor, and your orthopedic surgeon. The process of making this decision typically begins with a referral by your doctor to an orthopedic surgeon for an initial evaluation. Although many patients who undergo hip replacement surgery are 60 to 80 years of age, orthopedic surgeons evaluate patients individually.

Recommendations for surgery are based on the extent of pain, disability, and general health status-not solely on age. You may benefit from hip replacement surgery if:

- Hip pain limits your everyday activities such as walking or bending.
- Hip pain continues while resting, either day or night.
- Stiffness in a hip limits your ability to move or lift your leg.
- You have little pain relief from anti-inflammatory drugs or glucosamine sulfate.
- You have harmful or unpleasant side effects from your hip medications.
- Other treatments such as physical therapy or the use of a gait aid such as a cane do not relieve hip pain.

The Orthopedic Evaluation Your orthopedic surgeon will review the results of your evaluation with you and discuss whether hip replacement surgery is the best method to relieve your pain and improve your mobility. Other treatment options such as medications, physical therapy, or other types of surgery also may be considered. Your orthopedic surgeon will explain the potential risks and complications of hip replacement surgery, including those related to the surgery itself and those that can occur over time after your surgery. The orthopedic evaluation typically includes:

- A medical history, in which your orthopedic surgeon gathers information about your general health and about the extent of how your hip pain affects your ability to perform every day activities.
- A physical examination to assess hip mobility, strength, and alignment.
- X-rays (radiographs) to determine the extent of damage or deformity in your hip.
- Occasionally, blood tests or other tests such as MRI (magnetic resonance imaging or bone scanning may be needed to determine the condition of the bone and soft tissues of your hip.

What to Expect with Hip Replacement Surgery

Most people who undergo hip replacement surgery experience a dramatic reduction of hip pain and a significant improvement in their ability to perform the common activities of daily living. However, hip replacement surgery will not enable you to do more than you could before your hip problem developed.

Following surgery, you will be advised to avoid certain activities, including jogging and high-impact sports, for the rest of your life. You may be asked to avoid specific positions of the joint that could lead to dislocation.

Even with normal use and activities, an artificial joint (prosthesis) develops some wear over time. If you participate in high-impact activities or are overweight, this wear may accelerate and cause the prosthesis to loosen and become painful. Patients may still experience bursitis or tendinitis after surgery.

Surgical Risks and Possible Complications

The complication rate following hip replacement surgery is low. Serious complications, such as joint infection, occur in fewer than 2% of patients. Major medical complications, such as heart attack or stroke, occur even less frequently. However, chronic illnesses may increase the potential for complications. Although uncommon, when these complications occur they can prolong or limit full recovery. Other risks include dislocation of the hip, temporary or permanent injury to the nerve and blood vessels, and need for revision surgery. Some patients may notice a slight change in limb length.

Blood clots in the leg veins or pelvis are the most common complications of hip replacement surgery. Your orthopedic surgeon may prescribe one or more measures to prevent blood clots from forming in your leg veins or, if they do form, measures to prevent them from becoming symptomatic. These measures may include special support hose, inflatable leg coverings, ankle pump exercises, and blood thinners.

Although implant designs and materials, as well as surgical techniques, have been improved, wear of the bearing surfaces or loosening of the parts may occur. Discuss any concerns with your orthopedic surgeon prior to surgery.

Preparing for Surgery

- **Medical Evaluation**

In preparation for surgery, you may be asked to have a complete physical examination by your primary care doctor before your surgical procedure. This is needed to assess your health and identify conditions that can interfere with your surgery or recovery. Additional approval for surgery may be needed if you also receive medical care from a specialist such as a cardiologist or a urologist.

- **Tests**

Several tests may be needed to help plan your surgery: blood and urine samples may be tested and an electrocardiogram and chest x-rays may be ordered.

- **Medications**

Tell your orthopedic surgeon about the medications you are taking, including your over-the-counter medications. Your orthopedist or your primary care doctor will let you know which medications you should stop or can continue taking before surgery.

- **Weight Loss**

If you are overweight, your doctor may ask you to lose some weight before surgery to reduce the stress on your new joint and possibly decrease the risks of surgery.

- **Dental Evaluation**

Although infections after hip replacement are not common, an infection can occur if bacteria enter your bloodstream. Because bacteria can enter the bloodstream during dental work, you should consider getting treatment for significant dental diseases (including tooth extractions and periodontal work) before your surgery. Routine cleaning of your teeth should be delayed for several weeks after surgery.

- **Urinary Evaluation**

Individuals with a history of recent or frequent urinary infections and older men with prostate disease should consider a urological evaluation before surgery.

- **Social Planning**

You will need some help with tasks such as cooking, shopping, bathing, and laundry in the weeks following your surgery. Please arrange for help with these tasks. If you live alone and require additional help, please tell your surgeon before surgery.

To Do List:

- Stop blood thinning medications before surgery as instructed by your surgeon. Be sure to consult with your primary care doctor before stopping any medications.
- Stop all weight-loss medications and herbal supplements 14 days before surgery.
- Notify your physician if you develop a cold, fever, or other infections before surgery.

Home Planning

The following is a list of home modifications that will make your return home easier during your recovery:

- Securely fastened safety bars or handrails in your shower or bath
- Secure handrails along all stairways
- A stable chair for your early recovery with a firm seat cushion (that allows your knees to remain lower than your hips), a firm back, and two arms
- A raised toilet seat
- A stable shower bench or chair for bathing
- A long-handled sponge and shower hose
- A dressing stick, a sock aid, and a long-handled shoe horn for putting on and taking off shoes and socks without excessively bending your new hip
- A reacher that will allow you to grab objects without excessive bending of your hips
- Firm pillows for your chairs, sofas, and car that enable you to sit with your knees lower than your hips
- Removal of all loose carpets and electrical cords from the areas where you walk in your home

The Night before Surgery

- Eat a light meal the night before surgery.
- Pack your hospital bag including the following: two loose fitting tops or T-shirts, photo identification, your walker for trial with Physical Therapist, Insurance information, advanced directives (if you have them), eyeglasses, shaving items, dentures and denture cream, deodorant, CPAP machine (or any other device you use every day), toothbrush/toothpaste, tennis shoes and socks, books, magazines or activity books to keep you entertained during your stay, and two pair elastic waist shorts.

The Day of your Surgery:

- Wash from the neck down with a clean washcloth and the chlorhexidine scrub or wipes that will be given to you. Caution: Avoid eyes, nose, mouth and genital areas.
- Brush your teeth the morning of surgery, but be careful not to swallow any water.
- Wear comfortable loose-fitting clothes that are easy to take on and off.
- Take only the medications approved by your surgeon with a small sip of water.
- Bring your pre-packed hospital bag with your personal items.

Do Not:

- Do not shave the area of surgery. Your surgeon will prepare the incision area for you.
- Do not eat or drink anything eight hours before your scheduled surgery time. Typically, eat or drink nothing after midnight the night before your surgery. Your surgery may be cancelled if you eat or drink anything within eight hours of your surgery time.
- Do not smoke after midnight. Smoking can irritate the lungs and contribute to nausea and reduce your body's ability to fight infection.

- Do not bring any jewelry, cash, credit cards or other valuables.
- Do not bring or take your own medications during your stay in the hospital unless specifically told to do so.
- Do not wear make-up, hairpins, lotions, powder, or perfume.

At the Hospital

You arrive at the surgery registration area where you are checked in. All your insurance information is verified and you will be escorted to the preoperative area. You will change into a hospital gown and support stockings. All your personal items will be marked and placed in a bag for safe-keeping, and will be returned to you after surgery.

Once dressed, your nurse will take a complete set of vitals including blood pressure, heart rate, temperature, respiratory rate, and oxygen level. An IV (intravenous) line will be placed to administer fluids. This line provides fluids and medications to your body during and after surgery. You may find that you are asked to repeat information several times or be asked the same questions throughout your stay. This is for your safety. Every team member is dedicated to making your safety of primary importance.

Prior to surgery, a member of the anesthesia team will evaluate you. The most common types of anesthesia for hip replacement surgery are general anesthesia (which puts you to sleep throughout the procedure and uses a machine to help you breathe) or spinal anesthesia (which allows you to breathe on your own but anesthetizes your body from the waist down). The anesthesia team will discuss these choices with you and help you decide which type of anesthesia is best for you.

Before being transported to the operating room, your surgeon will mark your operative site. It is also a good idea to use the bathroom before going to the operating room.

There will be a designated area for your family and friends to wait while you are having surgery. They will be updated on the surgery. Your surgeon will contact after the surgery.

Breathing

After surgery, it is important to exercise your lungs. You will be given an incentive spirometer upon arrival to the hospital floor and instructed on how to use it. Take a slow, deep breath in, hold it for a few seconds and then breathe out. You should feel your lungs expanding. The spirometer will help you monitor the volume of air you are taking in. Work on increasing this volume daily. It is important to exercise your lungs frequently throughout the day. You will be encouraged to use your incentive spirometer 10 times every hour that you are awake.

Circulation

It is important to promote circulation after any surgery, especially after orthopedic surgery. This will help decrease your chance of forming a blood clot. Immediately after surgery you will have a surgical dressing on the leg that has been operated on and a support stocking (TED hose) on your other leg. On post-operative day two, your surgical dressing will be removed and your new dressing held in place by a TED hose. Wear your support stockings (TED hose) throughout your hospital stay and for the following six weeks.

Another circulatory aid is a compression device, which is used after surgery. The sequential compression device (SCD) is a sleeve that wraps around your lower leg, routinely inflating to promote circulation. When you are resting in bed, the SCD should be used. If you have discomfort, tingling or numbness, immediately notify your nurse.

A blood thinner will also be started after surgery to reduce your risk of blood clots. Starting the day after surgery, you will receive aspirin. This will continue while you are in the hospital. You will be discharged from the hospital on either 325 mg of aspirin twice a day. You may require a stronger medication such as Coumadin, Lovenox, or Xarelto, depending on your other medical conditions and your risk of blood clots. You will take this medication for six weeks, or until you have returned to an active lifestyle.

An easy way to help prevent blood clots is to increase your circulation with activity. After surgery, work on your exercises a minimum of three times a day and walk regularly. It is important to remain as active as possible. This is also good for your overall health.

Physical Therapy

You will receive therapy instructions before your hospital discharge. You need to do your therapy exercises as recommended by your therapy team and attend all your scheduled therapy sessions. The more energy you put into your rehabilitation, the better the results. Contact your therapist or surgeon at any time with questions.

We encourage you to exercise daily and follow your therapy program as prescribed by your therapy team. Please discuss the types of activities you enjoy with your therapist. Your therapist will let you know when it is safe for you to start those activities again.

Avoid any activities that are high impact, or involve heavy lifting until you are cleared by your therapy team.

Other Precautions

To assure proper recovery and prevent dislocation of the prosthesis, you must avoid extremes in hip range of motion.

Recovery

The success of your surgery will depend in large measure on how well you follow your orthopedic surgeon's instructions regarding home care during the first few weeks after surgery. After surgery:

- Participate in a regular light exercise program to maintain strength and your ability to move.
- Take special precautions to avoid falls and injuries.
- Notify your dentist about your orthopedic surgery and discuss your individual need to take antibiotics before any dental procedures.
- See your orthopedic surgeon for all scheduled follow-up appointments and periodic checkups.

Avoiding Problems After Surgery

Blood Clot Prevention

Follow your orthopedic surgeon's instructions carefully to minimize the potential risk of blood clots, which can occur during the first several weeks of your recovery.

Warning signs of possible blood clots include:

- Pain in your calf and leg that is unrelated to your incision
- Tenderness or redness of your calf
- Swelling of your thigh, calf, ankle, or foot

Warning signs that a blood clot has traveled to your lung include:

- Shortness of breath
- Chest pain, particularly with breathing

Notify your doctor immediately if you develop any of these signs.

Preventing Infection

The most common causes of infection following hip replacement surgery are from bacteria that enter the bloodstream during dental procedures, urinary tract infections, or skin infections. These bacteria can lodge around your prosthesis.

Following your surgery, you may need to take antibiotics prior to dental work, including dental cleanings, or any surgical procedure that could allow bacteria to enter your bloodstream.

Warning signs of a possible hip replacement infection are:

- Persistent fever (higher than 100°F orally)
- Shaking chills
- Increasing redness, tenderness, or swelling of the hip wound
- Drainage from the hip wound
- Increasing hip pain with both activity and rest

Notify your doctor immediately if you develop any of these signs.

Questions

The CORE Institute is dedicated to your outcome. We are here to answer any question or concern that may arise after your surgery. If any questions or concerns arise, please call The CORE Institute at 1.866.974.2673.