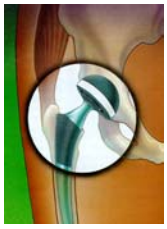
Total Hip Replacement

Whether you have just begun exploring treatment options or have already decided with your orthopaedic surgeon to undergo hip replacement surgery, this information will help you understand the benefits and limitations of this orthopaedic treatment. You'll learn how a normal hip works and 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 then, improvements in joint replacement surgical techniques and technology have greatly increased the effectiveness of this surgery. 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.

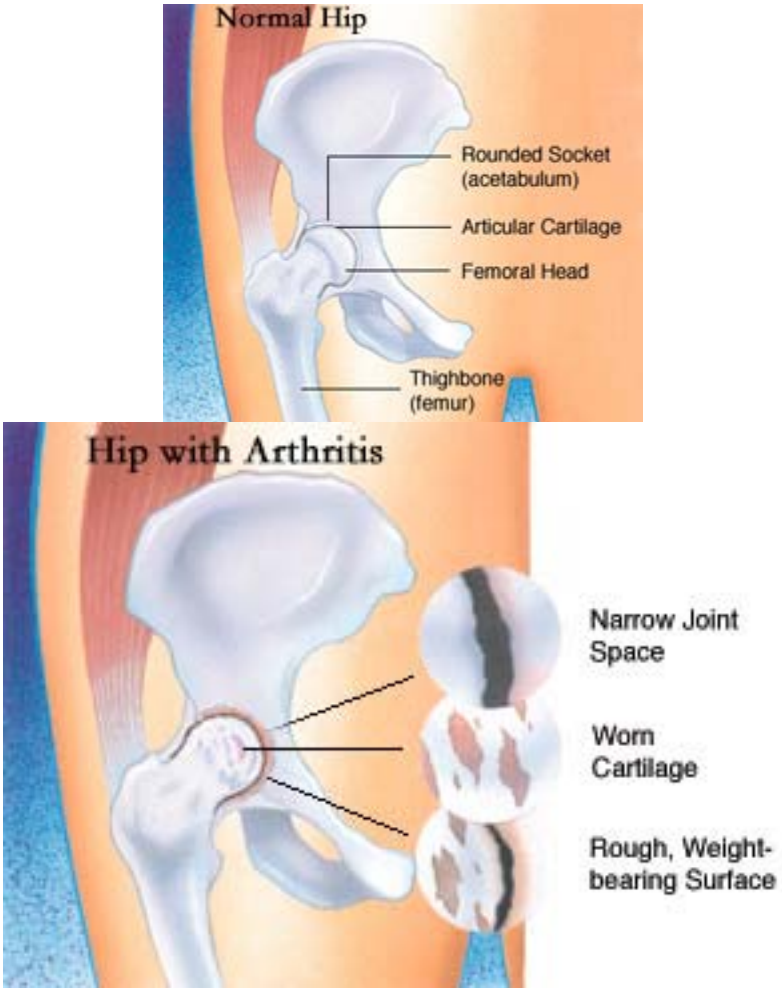
How the normal hip works

The hip is one of your 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 bone surfaces of your 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 of these 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 after age 50 and often in an individual 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 avascular necrosis. The articular cartilage becomes damaged and, over time, causes hip pain and stiffness.

Is hip replacement surgery for you?

The decision whether to have hip replacement surgery should be a cooperative one between you, your family, your primary care doctor, and your orthopaedic surgeon. The process of making this decision typically begins with a referral by your doctor to an orthopaedic surgeon for an initial evaluation.

Although many patients who undergo hip replacement surgery are age 60 to 80, orthopaedic surgeons evaluate patients individually. Recommendations for surgery are based on the extent of your 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 don't relieve hip pain.

The orthopaedic evaluation

Your orthopaedic 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 orthopaedic 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. These risks and complications are discussed later in this booklet.

- *A medical history*, in which your orthopaedic surgeon gathers information about your general health and asks questions about the extent of your hip pain and how it affects your ability to perform every day activities.
- *A physical examination* to assess your hip's mobility, strength and alignment.
- *X-rays* to determine the extent of damage or deformity in your hip.
- *Occasionally, blood tests* or other tests such as an *Magnetic Resonance Imaging (MRI)* or a *bone scan* may be needed to determine the condition of the bone and soft tissues of your hip.

What to expect from hip replacement surgery

An important factor in deciding whether to have hip replacement surgery is understanding what the procedure can and can't do.

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.

Preparing for surgery

Medical Evaluation. If you decide to have hip replacement surgery, you may be asked to have a complete physical by your primary care doctor before your surgery. This is needed to assess your health and find conditions that could interfere with your surgery or recovery.

Tests. Several tests such as blood samples, a cardiogram, chest X-rays and urine samples may be needed to help plan

your surgery.

Preparing Your Skin. Your skin should not have any infections or irritations before surgery. If either is present, contact your orthopaedic surgeon for a program to improve your skin before your surgery.

Blood Donations. You may be advised to donate your own blood prior to surgery. It will be stored in case you need blood after surgery.

Medications. Tell your orthopaedic surgeon about the medications you are taking. Your orthopaedist or your primary care doctor will advise you 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 minimize the stress on your new hip, 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 procedures, you should consider getting treatment for significant dental diseases (including tooth extractions and periodontal work) before your hip replacement 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. Although you will be able to walk with crutches or a walker soon after surgery, you will need some help for several weeks with such tasks as cooking, shopping, bathing and laundry. If you live alone, your surgeon's office, a social worker, or a discharge planner at the hospital can help you make advance arrangements to have someone assist you at your home. A short stay in an extended care facility during your recovery after surgery also may be arranged.

Home planning

Here are some items and home modifications that will make your return home easier during your recovery.

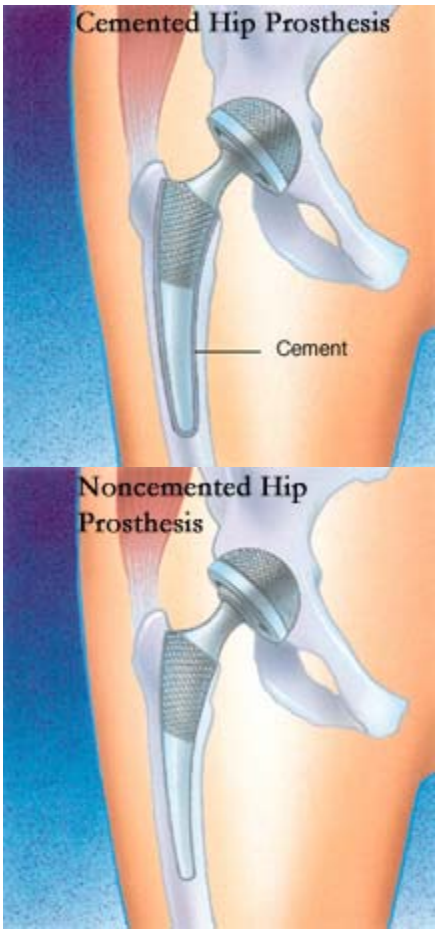
- Securely fastened safety bars or handrails in your shower or bath
- Secure handrails along all stairways
- A stable chair for your early recovery with a firm seat cushion that allows your knees to remain lower than your hips, a firm back and two arms
- A raised toilet seat
- A stable shower bench or 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 to sit on that keep your knees lower than your hips for your chairs, sofas and car
- Removal of all loose carpets and electrical cords from the areas where you walk in your home

Your surgery

You will most likely be admitted to the hospital on the day of your surgery. Prior to admission, 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 breath) or *spinal anesthesia* (which allows

you to breath 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.



Surgical procedure

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

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

Special surgical cement may be used to fill the gap between the prosthesis and remaining natural bone to secure the artificial joint.

A noncemented prosthesis has also been developed which 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.

A combination of a cemented ball and a noncemented socket may be used.

Your orthopaedic surgeon will choose the type of prosthesis that best meets your needs.

After surgery, you will be moved to the recovery room where you will remain for one to two hours while your recovery from anesthesia is monitored. After you awaken fully, you will be taken to your hospital room.

A special note about minimally invasive total hip replacement

Over the past several years, orthopaedic surgeons have been developing new techniques, known as minimally invasive hip replacement surgery, for inserting total hip replacements through smaller incisions. It is hoped, but not yet proven, that this may allow for quicker, less painful recovery and more rapid return to normal activities. Minimally invasive and small incision total hip replacement surgery is a rapidly evolving area. While 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 malposition of the implants, which can contribute to premature wear, dislocation and loosening of your hip replacement. Patients who have marked deformity of the joint, those who are heavy or muscular, and those who have other health problems, which can contribute to wound healing problems, appear to be at higher risk of problems. Your orthopaedic surgeon can talk to you about his or her experience with minimally invasive hip replacement surgery and the possible risks and benefits of minimally invasive hip replacement surgery. The AAOS and the American Association of Hip and Knee Surgeons have developed information for patients about minimally invasive hip replacement surgery.

Your stay in the hospital

You will usually stay in the hospital for a few days. After surgery, you will feel pain in your hip. Pain medication will be given to make you as comfortable as possible.

To avoid lung congestion after surgery, you will be asked to breathe deeply and cough frequently.

To protect your hip during early recovery, a positioning splint, such as a V-shaped pillow placed between your legs, may be used.

Walking and light activity are important to your recovery and will begin the day of or the day after your surgery. Most hip replacement patients begin standing and walking with the help of a walking support and a physical therapist the day after surgery. The physical therapist will teach you specific exercises to strengthen your hip and restore movement for walking and other normal daily activities.

Possible complications after surgery

The complication rate following hip replacement surgery is low. Serious complications, such as joint infection, occur in less than 2 percent 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 your full recovery.

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

Leg-length inequality may occur or may become or seem worse after hip replacement. Your orthopaedic surgeon will take this into account, in addition to other issues, including the stability and biomechanics of the hip. Some patients may feel more comfortable with a shoe lift after surgery.

Other complications such as dislocation, nerve and blood vessel injury, bleeding, fracture and stiffness can occur. In a small number of patients, some pain can continue, or new pain can occur after surgery.

Over years, the hip prosthesis may wear out or loosen. This problem will likely be less common with newer materials and techniques. When the prosthesis wears, bone loss may occur because of the small particles produced at the wearing surface. This process is called osteolysis.

Your recovery at home

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

Wound Care. You will have stitches or staples running along your wound or a suture beneath your skin. The stitches or staples will be removed about two weeks after surgery.

Avoid getting the wound wet until it has thoroughly sealed and dried. A bandage may be placed over the wound to prevent irritation from clothing or support stockings.

Diet. Some loss of appetite is common for several weeks after surgery. A balanced diet, often with an iron supplement, is important to promote proper tissue healing and restore muscle strength. Be sure to drink plenty of fluids.

Activity. Exercise is a critical component of home care, particularly during the first few weeks after surgery. You should be able to resume most normal light activities of daily living within three to six weeks following surgery. Some discomfort with activity and at night is common for several weeks.

Your activity program should include:

- A graduated walking program, initially in your home and later outside
- Walking program to slowly increase your mobility and endurance
- Resuming other normal household activities
- Resuming sitting, standing, walking up and down stairs
- Specific exercises several times a day to restore movement
- Specific exercises several times a day to strength your hip joint

- May wish to have a physical therapist help you at home

Avoiding problems after surgery

Blood Clot Prevention. Follow your orthopaedic 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, 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. For many patients with a normal immune system the AAOS and ADA recommend dental prophylaxis for two years after a primary total joint surgery. A complete discussion of this topic is available on the AAOS patient education Web site, Your Orthopaedic Connection.

Warning signs of a possible hip replacement infection are:

- Persistent fever (higher than 100 degrees 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.

Avoiding falls

A fall during the first few weeks after surgery can damage your new hip and may result in a need for more surgery. Stairs are a particular hazard until your hip is strong and mobile. You should use a cane, crutches, a walker or handrails, or have someone help you until you improve your balance, flexibility and strength.

Your surgeon and physical therapist will help you decide what assistive aides will be required following surgery, and when those aides can safely be discontinued.

Other precautions

To assure proper recovery and prevent dislocation of the prosthesis, you must take special precautions. Do not cross your legs. Do not bend your hips more than a right angle (90 degrees). Do not turn your feet excessively inward or outward. Use a pillow between your legs at night when sleeping until you are advised by your orthopaedic surgeon that you can remove it. Your surgeon and physical therapist will give you more instructions prior to your discharge from the hospital.

How your new hip is different

You may feel some numbness in the skin around your incision. You also may feel some stiffness, particularly with excessive bending. These differences often diminish with time and most patients find these are minor compared to the pain and limited function they experienced prior to surgery.

Your new hip may activate metal detectors required for security in airports and some buildings. Tell the security agent about your hip replacement if the alarm is activated. You may ask your orthopaedic surgeon for a card confirming that you have an artificial hip.

After surgery, make sure you also do the following:

- Participate in a regular light exercise program to maintain proper strength and mobility of your new hip.
- Take special precautions to avoid falls and injuries. Individuals who have undergone hip replacement surgery and suffer a fracture may require more surgery.
- Notify your dentist that you have had a hip replacement. You will need to take antibiotics before any dental procedure for a minimum of two years after your surgery and possibly longer, depending on your past health history. Guidelines for the use of antibiotics for your surgeon and dentist are available from the AAOS and the American Dental Association.
- See your orthopaedic surgeon periodically for routine follow-up examinations and X-rays, even if your hip replacement seems to be doing fine.

Your orthopaedic surgeon is a medical doctor with extensive training in the diagnosis and nonsurgical and surgical treatment of the musculoskeletal system, including bones, joints, ligaments, tendons, muscles, and nerves.