

*Questions
& Answers
about . . .*

**Hip
Replacement**

*National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
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You can also find this booklet on the NIAMS Web site
at www.niams.nih.gov/hi/topics/hip/hiprepqa.htm.

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What Is a Hip Replacement?

Hip replacement, or arthroplasty, is a surgical procedure in which the diseased parts of the hip joint are removed and replaced with new, artificial parts. These artificial parts are called the prosthesis. The goals of hip replacement surgery are to improve mobility by relieving pain and improve function of the hip joint.

Who Should Have Hip Replacement Surgery?

The most common reason that people have hip replacement surgery is the wearing down of the hip joint that results from osteoarthritis. Other conditions, such as rheumatoid arthritis (a chronic inflammatory disease that causes joint pain, stiffness, and swelling), avascular necrosis (loss of bone caused by insufficient blood supply), injury, and bone tumors also may lead to breakdown of the hip joint and the need for hip replacement surgery.

Before suggesting hip replacement surgery, the doctor is likely to try walking aids such as a cane, or non-surgical therapies such as medication and physical therapy. These therapies are not always effective in relieving pain and improving the function of the hip joint. Hip replacement may be an option if persistent pain and disability interfere with daily activities. Before a doctor recommends hip replacement, joint damage should be detectable on x rays.

In the past, hip replacement surgery was an option primarily for people over 60 years of age. Typically, older people are less active and put less strain on the artificial hip than do younger, more active people. In recent years, however, doctors have found that hip replacement surgery can be very successful in younger people as well. New technology has improved the artificial parts, allowing them to withstand more stress and strain. A more important factor than age in determining the success of hip replacement is the overall health and activity level of the patient.

For some people who would otherwise qualify, hip replacement may be problematic. For example, people with chronic diseases such as those that result in severe muscle weakness or Parkinson's disease are more likely than people without chronic diseases to damage or dislocate an artificial hip. Because people who are at high risk for infections or in poor health are less likely to recover successfully, doctors may not recommend hip replacement surgery for these patients.

What Are Alternatives to Total Hip Replacement?

Before considering a total hip replacement, the doctor may try other methods of treatment, such as an exercise program and medication. An exercise program can strengthen the muscles in the hip joint and sometimes improve positioning of the hip and relieve pain.

The doctor also may treat inflammation in the hip with nonsteroidal anti-inflammatory drugs, or NSAIDs. Some common NSAIDs are aspirin and ibuprofen. NSAIDs also include Celebrex*, one of the so-called COX-2 inhibitors that block an enzyme known to cause an inflammatory response. Many of these medications are available without a prescription, although a doctor also can prescribe NSAIDs in stronger doses.

In a small number of cases, the doctor may prescribe corticosteroids, such as prednisone or cortisone, if NSAIDs do not relieve pain. Corticosteroids reduce joint inflammation and are frequently used to treat rheumatic diseases such as rheumatoid arthritis. Corticosteroids are not always a treatment option because they can cause further damage to the bones in the joint. Some people experience side effects from corticosteroids such as increased appetite, weight gain, and lower resistance to infections. A doctor must prescribe and monitor corticosteroid treatment. Because corticosteroids alter the body's natural hormone production, patients should not stop taking them suddenly and should follow the doctor's instructions for discontinuing treatment.

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If physical therapy and medication do not relieve pain and improve joint function, the doctor may suggest corrective surgery that is less complex than a hip replacement, such as an osteotomy. Osteotomy is surgical repositioning of the joint. The surgeon cuts away damaged bone and tissue and restores the joint to its proper position. The goal of this surgery is to restore the joint to its correct position, which helps to distribute weight evenly in the joint. For some people, an osteotomy relieves pain. Recovery from an osteotomy takes 6 to 12 months. After an osteotomy, the function of the hip joint may continue to worsen and the patient may need additional treatment. The length of time before another surgery is needed varies greatly and depends on the condition of the joint before the procedure.

What Does Hip Replacement Surgery Involve?

The hip joint is located where the upper end of the femur meets the acetabulum. The femur, or thigh bone, looks like a long stem with a ball on the end. The acetabulum is a socket or cup-like structure in the pelvis, or hip bone. This “ball and socket” arrangement allows a wide range of motion, including sitting, standing, walking, and other daily activities.

During hip replacement, the surgeon removes the diseased bone tissue and cartilage from the hip joint. The healthy parts of the hip are left intact. Then the surgeon replaces the head of the femur (the ball) and the acetabulum (the

socket) with new, artificial parts. The new hip is made of materials that allow a natural, gliding motion of the joint. Hip replacement surgery usually lasts 2 to 3 hours.

Sometimes the surgeon will use a special glue, or cement, to bond the new parts of the hip joint to the existing, healthy bone. This is referred to as a “cemented” procedure. In an uncemented procedure, the artificial parts are made of porous material that allows the patient’s own bone to grow into the pores and hold the new parts in place. Doctors sometimes use a “hybrid” replacement, which consists of a cemented femur part and an uncemented acetabular part.

Is a Cemented or Uncemented Prosthesis Better?

Cemented prostheses were developed 40 years ago. Uncemented prostheses were developed about 20 years ago to try to avoid the possibility of loosening parts and the breaking off of cement particles, which sometimes happen in the cemented replacement. Because each person’s condition is unique, the doctor and patient must weigh the advantages and disadvantages to decide which type of prosthesis is better.

For some people, an uncemented prosthesis may last longer than cemented replacements because there is no cement that can break away. And, if the patient needs an additional hip replacement (which is likely in younger people), also known as a revision, the surgery sometimes is easier if the person has an uncemented prosthesis.

The primary disadvantage of an uncemented prosthesis is the extended recovery period. Because it takes a long time for the natural bone to grow and attach to the prosthesis, people with uncemented replacements must limit activities for up to 3 months to protect the hip joint. The process of natural bone growth also can cause thigh pain for several months after the surgery.

Research has proven the effectiveness of cemented prostheses to reduce pain and increase joint mobility. These results usually are noticeable immediately after surgery. Cemented replacements are more frequently used than cementless ones for older, less active people and people with weak bones, such as those who have osteoporosis.

What Can Be Expected Immediately After Surgery?

Patients are allowed only limited movement immediately after hip replacement surgery. When the patient is in bed, the hip usually is braced with pillows or a special device that holds the hip in the correct position. The patient may receive fluids through an intravenous tube to replace fluids lost during surgery. There also may be a tube located near the incision to drain fluid and a tube (catheter) may be used to drain urine until the patient is able to use the bathroom. The doctor will prescribe medicine for pain or discomfort.

How Long Are Recovery and Rehabilitation?

On the day after surgery or sometimes on the day of surgery, therapists will teach the patient exercises that will improve recovery. A respiratory therapist may ask the patient to breathe deeply, cough, or blow into a simple device that measures lung capacity. These exercises reduce the collection of fluid in the lungs after surgery.

A physical therapist may teach the patient exercises, such as contracting and relaxing certain muscles, that can strengthen the hip. Because the new, artificial hip has a more limited range of movement than an undiseased hip, the physical therapist also will teach the patient proper techniques for simple activities of daily living, such as bending and sitting, to prevent injury to the new hip. As early as 1 to 2 days after surgery, a patient may be able to sit on the edge of the bed, stand, and even walk with assistance.

Usually, people do not spend more than 10 days in the hospital after hip replacement surgery. Full recovery from the surgery takes about 3 to 6 months, depending on the type of surgery, the overall health of the patient, and the success of rehabilitation.

How to Prepare for Surgery and Recovery

People can do many things before and after they have surgery to make everyday tasks easier and help speed their recovery.

Before Surgery

- Learn what to expect before, during, and after surgery. Request information written for patients from the doctor or contact one of the organizations listed near the end of this booklet.
- Arrange for someone to help you around the house for a week or two after coming home from the hospital.
- Arrange for transportation to and from the hospital.
- Set up a “recovery station” at home. Place the television remote control, radio, telephone, medicine, tissues, waste basket, and pitcher and glass next to the spot where you will spend the most time while you recover.
- Place items you use every day at arm level to avoid reaching up or bending down.
- Stock up on kitchen staples and prepare food in advance, such as frozen casseroles or soups that can be reheated and served easily.

continued

After Surgery

- Follow the doctor's instructions.
- Work with a physical therapist or other health care professional to rehabilitate your hip.
- Wear an apron for carrying things around the house. This leaves hands and arms free for balance or to use crutches.
- Use a long-handled "reacher" to turn on lights or grab things that are beyond arm's length. Hospital personnel may provide one of these or suggest where to buy one.

What Are Possible Complications of Hip Replacement Surgery?

According to the American Academy of Orthopaedic Surgeons, approximately 120,000 hip replacement operations are performed each year in the United States and less than 10 percent require further surgery. New technology and advances in surgical techniques have greatly reduced the risks involved with hip replacements.

The most common problem that may happen soon after hip replacement surgery is hip dislocation. Because the artificial ball and socket are smaller than the normal ones, the ball can become dislodged from the socket if the hip is placed in

certain positions. The most dangerous position usually is pulling the knees up to the chest.

The most common later complication of hip replacement surgery is an inflammatory reaction to tiny particles that gradually wear off of the artificial joint surfaces and are absorbed by the surrounding tissues. The inflammation may trigger the action of special cells that eat away some of the bone, causing the implant to loosen. To treat this complication, the doctor may use anti-inflammatory medications or recommend revision surgery (replacement of an artificial joint). Medical scientists are experimenting with new materials that last longer and cause less inflammation.

Less common complications of hip replacement surgery include infection, blood clots, and heterotopic bone formation (bone growth beyond the normal edges of bone).

When Is Revision Surgery Necessary?

Hip replacement is one of the most successful orthopaedic surgeries performed—more than 90 percent of people who have hip replacement surgery will never need revision surgery. However, because more younger people are having hip replacements, and wearing away of the joint surface becomes a problem after 15 to 20 years, revision surgery is becoming more common. Revision surgery is more difficult than first-time hip replacement surgery, and the outcome is generally not as good, so it is important to explore all available options before having additional surgery.

Doctors consider revision surgery for two reasons: if medication and lifestyle changes do not relieve pain and disability, or if x rays of the hip show that damage has occurred to the artificial hip that must be corrected before it is too late for a successful revision. This surgery is usually considered only when bone loss, wearing of the joint surfaces, or joint loosening shows up on an x ray. Other possible reasons for revision surgery include fracture, dislocation of the artificial parts, and infection.

What Types of Exercise Are Most Suitable for Someone With a Total Hip Replacement?

Proper exercise can reduce joint pain and stiffness and increase flexibility and muscle strength. People who have an artificial hip should talk to their doctor or physical therapist about developing an appropriate exercise program. Most exercise programs begin with safe range-of-motion activities and muscle strengthening exercises. The doctor or therapist will decide when the patient can move on to more demanding activities. Many doctors recommend avoiding high-impact activities, such as basketball, jogging, and tennis. These activities can damage the new hip or cause loosening of its parts. Some recommended exercises are cross-country skiing, swimming, walking, and stationary bicycling. These exercises can increase muscle strength and cardiovascular fitness without injuring the new hip.

What Hip Replacement Research Is Being Done?

To help avoid unsuccessful surgery, researchers are studying the types of patients most likely to benefit from a hip replacement. Researchers also are developing new surgical techniques, materials, and designs of prostheses, and studying ways to reduce the inflammatory response of the body to the prosthesis. Other areas of research address recovery and rehabilitation programs, such as home health and outpatient programs.

Where Can People Find More Information About Hip Replacement Surgery?

- **National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)**

National Institutes of Health

1 AMS Circle

Bethesda, MD 20892-3675

Phone: 301-495-4484 or

877-22-NIAMS (226-4267) (free of charge)

TTY: 301-565-2966

Fax: 301-718-6366

E-mail: NIAMSInfo@mail.nih.gov

www.niams.nih.gov

NIAMS provides information about various forms of arthritis and rheumatic disease and bone, muscle, joint, and skin diseases. It distributes patient and professional education materials and refers people to other sources of information. Additional information and updates can also be found on the NIAMS Web site.

- **American Academy of Orthopaedic Surgeons**

P.O. Box 2058

Des Plaines, IL 60017

Phone: 800-824-BONE (2663) (free of charge)

www.aaos.org

The academy provides education and practice management services for orthopaedic surgeons and allied health professionals. It also serves as an advocate for improved patient care and informs the public about the science of orthopaedics. The orthopaedist's scope of practice includes disorders of the body's bones, joints, ligaments, muscles, and tendons. For a single copy of an AAOS brochure, send a self-addressed stamped envelope to the address above or visit the AAOS Web site.

- **The Hip Society**

c/o Karen Andersen

951 Old County Road #182

Belmont, CA 94002

Phone: 650-596-6190

Fax: 650-508-2039

www.hipsoc.org

The society maintains a list of physicians who are specialists in problems of the hip and provides physician referrals by geographic area.

- **American Physical Therapy Association**

1111 North Fairfax Street
Alexandria, VA 22314-1488
Phone: 703-684-2782 or
800-999-2782, ext. 3395 (free of charge)
www.apta.org

This national professional organization represents physical therapists, allied personnel, and students. Its objectives are to improve research, public understanding, and education in the physical therapies.

- **Arthritis Foundation**

1330 West Peachtree Street
Atlanta, GA 30309
Phone: 404-872-7100 or 800-283-7800 (free of charge)
or call your local chapter (listed in the telephone directory)
www.arthritis.org

This is the major voluntary organization devoted to arthritis. The foundation publishes pamphlets on arthritis, such as “Arthritis Answers,” that may be obtained by calling the toll-free telephone number. The foundation also can provide physician and clinic referrals. Local chapters also provide information and organize exercise programs for people who have arthritis.

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