

Anterior Approach to Hip Replacement Surgery

Introduction

When debilitating pain and stiffness in your hip limits your daily activities, you may need a total hip replacement. The development of total hip replacement began over 40 years ago. In 2006, more than 270,000 people in the United States underwent conventional hip replacement surgery to relieve pain and stiffness and restore mobility.¹ Today, there are many options in hip replacement surgery. This discussion focuses on the similarities and differences between conventional hip replacement and the Anterior Approach to hip replacement.

When Hip Problems Arise

The most frequent cause of debilitating hip pain is arthritis. It is estimated that 40 million people in the United States have some form of arthritis. That's one in every seven people, one in every three families. Of the more than 100 types of arthritis, the following three are the most common causes of joint damage: osteoarthritis, rheumatoid arthritis and traumatic arthritis.

Osteoarthritis is a disease which involves the wearing away of the normal smooth joint surfaces. This eventually results in bone-on-bone contact, producing pain and stiffness.

Rheumatoid arthritis is a systemic disease that may attack any or all joints in the body. It affects women more often than men and can strike all ages. Unlike osteoarthritis, rheumatoid arthritis causes destruction of the joint by severe inflammation. The body's immune system attacks and destroys the synovial lining (the protective cartilage and the joint surface) covering the joint capsule, causing pain, swelling, joint damage and loss of mobility.

Traumatic arthritis results from damage to the joint from a previous injury. It is the third most common form of arthritis. It also results in joint damage, pain and loss of mobility.

When conservative methods of treatment (medications, physical therapy, etc.) fail to provide adequate relief, total hip replacement is considered



Arthritic Hip

If your X- rays show destruction of the joint, you and your surgeon will decide if the degree of pain, deterioration and loss of mobility are severe enough that you should undergo the operation. Total joint replacement is a treatment that has transformed the lives of many people by enabling them to regain activity with reduced or no pain. It helps them to return to an active, enjoyable lifestyle where they can resume their daily activities.

The Hip Joint

The hip joint forms where the head of the femur (thigh bone) meets the acetabulum (the socket of the pelvic bone). The head of the femur is ball- shaped and fits snugly in the



Healthy Hip

socket formed by the acetabulum. The bones of the hip joint are covered by a layer of smooth, shiny cartilage that cushions and protects the bones while allowing easy motion.

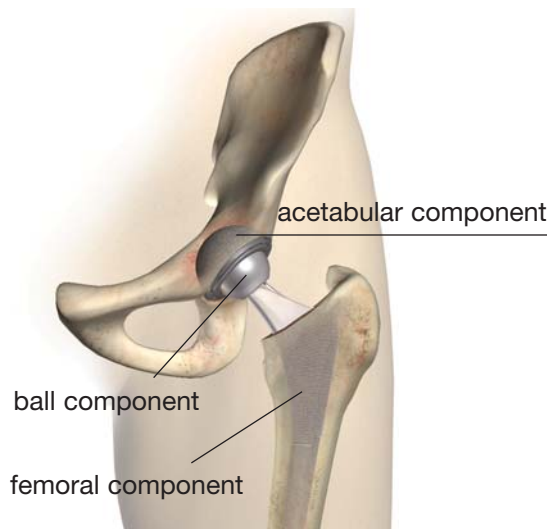
Tough fibers, called ligaments, connect the bones of the joint to hold them in place and add strength and elasticity for movement. Muscles and tendons play an important role in keeping the joint stable.

Treatment Options

Your doctor carefully considers factors such as your condition, weight and activity levels before determining the appropriate treatment method. For less severe hip pain, non-surgical treatment options may be considered. These treatments may include rest, drugs and analgesics. When non-surgical options fail to provide adequate pain relief, hip replacement may be suggested. If you are in pain, you should discuss treatment options with your surgeon. One such option is hip replacement using a surgical technique called the **Anterior Approach**.

Traditional Total Hip Replacement

Total hip replacement or total hip arthroplasty is the surgical replacement of the ball and socket of the hip joint with artificial parts. There are two main modular components used in total hip replacement. The femoral stem, which is inserted into your thigh bone, is made of metal and replaces the worn out head of the femur. The ball component, which can be made of metal, ceramic or polyethylene, rests on the top of the femoral stem.



Hip Replacement Components

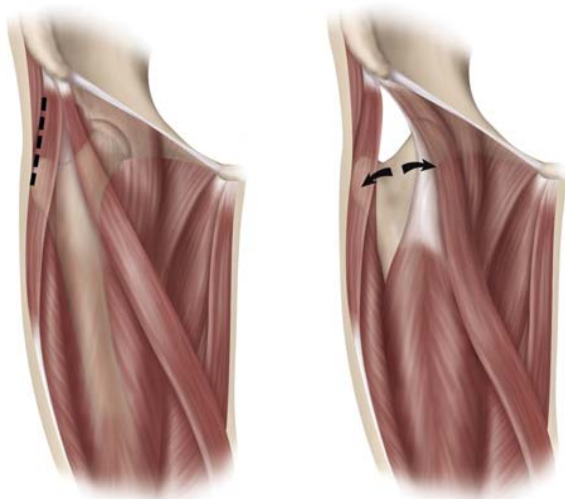
The acetabular component includes a cup and liner, and replaces the socket. These components may be made of metal, ceramic and polyethylene combinations. In traditional hip replacement surgery, a surgeon will make an incision along the side of your leg in order to access your hip

joint. The natural ball portion of the head of the femur (thigh bone) is removed during surgery. The remaining preparation of the femur and acetabulum (socket) involves reshaping to allow solid, accurate alignment of the hip components. The femoral component is inserted inside the thigh bone and the acetabular component is inserted inside the socket of the pelvis.

The Anterior Approach - A Muscle Preserving Philosophy

The Anterior Approach is an alternative to traditional hip replacement surgery. This technique approaches the hip joint from the front as opposed to the side or back. Unlike traditional hip surgery, a surgeon can work between your muscles without detaching them from the hip or thigh-bones. The benefits of the Anterior Approach are:

- These important muscles are left relatively undisturbed and are therefore typically spared a lengthy healing process.

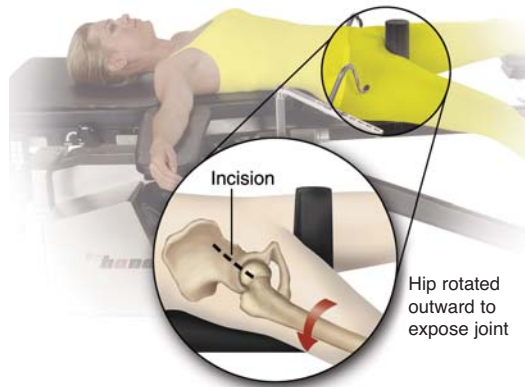


*Small Incision in
Upper Thigh*

*Muscle Easily Parted
to Expose Joint*

- Patients may bend their hip and bear full weight sooner after this surgery, than with traditional THR, because of this muscle sparing.
- Keeping these muscles intact also helps prevent possible dislocations.
- Additionally, since the incision is on the front side of the leg, you may be spared from the pain of sitting on scar tissue.

Advanced Surgical Table & Instruments



Improved Surgical Access

The Anterior Approach is enhanced by the use of a technologically advanced surgical table and special instruments.^{2,3} This table helps your surgeon precisely position your hip for surgery, enabling him or her to accurately position the replacement components for proper hip joint mechanics. Special instruments and implant components allow for less tissue disruption which can shorten the healing process.

Anterior Approach as described by Joel Matta, MD.

This brochure was written in consultation with Joel Matta, MD & David Dodgin, MD.

Image of hanaTMSurgical table courtesy of Orthopedic Systems, Inc.

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*Source: Patients who have received DePuy implants.

REFERENCES:

1. Millennium Research Group, 2006.
2. Matta, J.M., et al. "Single Incision Anterior Approach for THA on an Orthopedic Table." *Clinical Orthopaedics and Related Research* 441: 115-124.
3. Data on file at DePuy Orthopaedics, Inc.