

the surgeon will first have to remove this before he can begin to install the new hip. Generally, the time spent in surgery with this operation, even if it runs two or more hours, should not cause alarm to friends and family as some hips are just naturally more complicated to work on than others.

The surgical procedure

The following description of the operation, which may vary somewhat from one surgeon to the next depending upon the particular patient, is designed to give a good idea of what will be done when you actually go into surgery.



The Surgical Approach

The surgeon will generally make his incision on the side, right over the hip. The length of the incision will vary depending upon how much fatty tissue is present and on how deep the surgeon must go to gain adequate working space for installation of the new joint. In most cases, the hip joint may be entered by standard surgical approaches in front of or behind the hip without disturbing the function of any important muscular or skeletal systems.

Replacing the Worn Socket

After he has made his incision, the surgeon will dislocate the hip and will prepare the natural bony socket by enlarging and shaping it to an appropriate size to receive the bone cement and the plastic cup. This is done with special instruments to insure that the new socket will seat in the proper position. The plastic socket is then cemented in place and the surgeon turns his attention to the long bone of the thigh, the femur.



The shaft of the femur, from which the damaged ball or head has been removed, is prepared to accept a stainless steel stem of an appropriate size. When this has been done, the stem is cemented into place and the two implant parts are brought together to complete the total hip.



The surgeon then tests the new joint to see that it moves freely through a normal range of motion without dislocating. Previously existing conditions or badly deformed hips may, however, preclude the restoration of a full range of normal joint motion. Some patients will have to adjust to these limitations postoperatively to avoid dislocating the new hip.



As one of the final steps in the operation, the surgeon reattaches the greater trochanter (a large knob of bone to which a number of muscles are attached) which is generally, but not always, detached during the surgery. The reattachment is accomplished with stainless steel wires. The incision is then closed in a routine manner and the patient leaves surgery.

After the operation

You can generally expect to be confined to bed for several days after surgery. Medication will be given to relieve the usual postoperative discomfort as the incision heals. A pillow may be kept between your legs during this period to help maintain the hip in the best position for initial healing to take place.

At approximately one week postoperatively, you will begin walking with crutches under the supervision of a nurse or physical therapist. You will be encouraged to put your leg through the normal motions of walking but with minimal weight bearing. The absence of pain at this period may lead you to place more weight than recommended on the new hip or, in short, to become overzealous about walking normally again. It should be carefully noted that the healing process is still taking place at this point. You must be careful not to try to do too much too soon. It is easy during this period to become over-fatigued. The surgeon, the nurses, and the physical therapist will bring you along as quickly as is advisable without endangering your new joint.

After you leave the hospital

During the first six weeks after surgery, the crutches should be used to assist and protect your new hip as much as possible. Use of two crutches during the period ordered by your surgeon must be strictly adhered to. During the approximately two weeks spent in the hospital, you will have been permitted to sit in a chair of appropriate height for increasing periods of time and to use a commode with a raised seat to prevent flexing the hip joint more than 90°. Once you are at home, you should very carefully follow the routines and instructions carried out in the hospital so that when you make your visit to the doctor six weeks after the surgery, he will be able to move you to the next stage of using your new hip. A few very good guidelines to observe during this important six week period are listed below.

1. Do not let yourself become over-fatigued.
2. Do not flex your hip to more than 90° (a right angle) by sitting in low chairs or stooping to pick things up.
3. Do use two crutches for as long as your doctor orders.
4. Do sleep on the other hip with a pillow between the legs as comfort permits.

After about six weeks your surgeon will make x-rays and take a good look at the progress of your new hip. Based upon the results of the x-rays and your general condition, he will then advise you as to when the crutches may be discarded and will recommend an expanding program of normal activities. Depending upon the condition of the bone, a longer period on crutches may be indicated.

The results of the total hip surgery

The successful total hip operation will generally provide nearly complete relief of hip pain. Motion in the affected limb will generally be significantly improved as will any limp that might have developed over the years as a result of pain and/or restricted motion. In most cases, canes and crutches can be discarded within a few months after the surgery. In some situations, however, where there are other disabilities and the patient may not become completely mobile again, there is generally a significant improvement brought about by the relief of pain alone.

It should be realized that the total hip replacement is not a normal hip and that certain cautions will have to be observed in its use. For instance, a total hip patient, even with the best of results, should not expect to participate in extremely strenuous activities or sports which might cause the implant to break down or dislocate. Many patients notice a certain amount of stiffness on arising or after sitting still for an extended period of time. This is to be expected. Although this type of device has been successfully implanted in several thousand people since the early 1960's, its ultimate durability, particularly in an active younger person, remains to be confirmed over the next several years. The simulated laboratory testing of the implants has shown them to be quite durable under repeated stress, but only actual patient use over many years can confirm their actual life expectancy to the point where the replacement of one or more parts may be required.



Patient's guide to total hip replacement

Foreword:

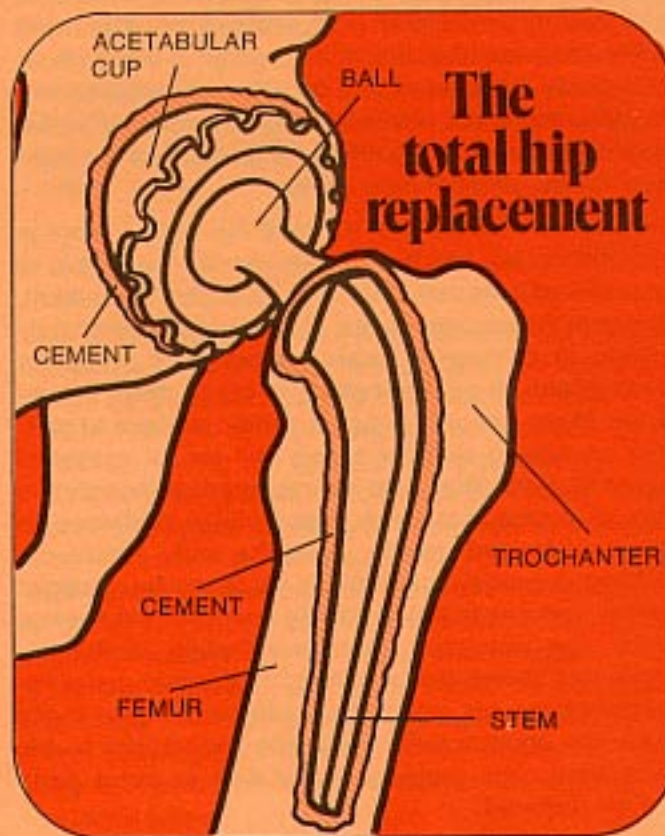
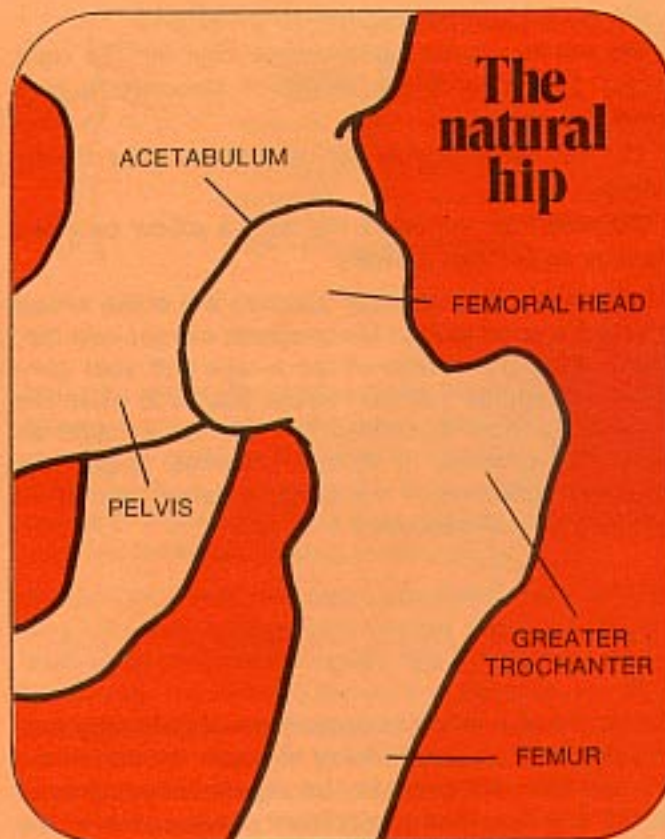
While practical total hip replacement is quite new, it is the result of many years of research on the part of orthopaedic surgeons, bio-mechanical engineers, materials technologists, and many other dedicated professionals throughout the world medical community. The results of the surgery in the alleviation of pain and the restoration of motion in hips damaged by disease or injury have generally been quite good. And, while there are certainly risks involved with this, as in any surgical operation, the outlook for success is generally in the patient's favor. The following material has been prepared to help you understand better how the total hip works, what the surgeon does in the operating room, and what you can expect to encounter before and after surgery.

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The Total Hip Components:

The total hip replacement consists of three major components permanently implanted in the body. The first of these, a white plastic cup or socket, is placed into the hip in the same position normally occupied by the natural socket. The cup is made of a very special plastic called high density polyethylene. This is a particularly good material because it wears very slowly and its unique molecular structure allows motion to take place against its surface without generating appreciable friction.

Ball/Stem:

The second major component of the total hip implant is a stainless steel ball and stem. The natural ball or head of the femur (thigh bone) is removed at surgery and the metal stem is inserted into the bone so that only the highly polished steel ball protrudes. This serves as the new femoral head and fits exactly into the plastic socket. The stainless steel from which this part of the prosthesis is made is specially formulated for purity and strength. The ball is precisely machined to be as near-perfectly spherical as possible so that friction and wear between the plastic and metal surfaces is minimized.

Bone Cement:

The third and last major component of the total hip replacement is a material known as surgical bone cement. The bone cement, which has been used for many years as a dental filling material, has only recently been applied to orthopaedics. It may be said that the cement is the most important part of the successful total hip replacement. The reason for this is that without some means to stabilize them, the parts of the total hip implant could loosen in time; no matter how carefully or precisely they were fitted to the patient at surgery. When implant parts become loose they often erode away the surrounding bone. This can bring the return of pain and may cause the implant to break down. Bone cement solves this problem very nicely by filling all of the space between bone and implant parts. Because it is resilient, the cured cement gives instead of eroding under the normal stresses applied to it in walking. It is inserted around the total hip implants as a soft, doughy substance which hardens within a few moments to lock the implant parts into place.

Before the operation

Some of the things that your doctor may ask you to do prior to surgery are listed below. All of these are de-

signed to have you as ready as possible to receive your new hip. Some of these steps may not be required in your case or your doctor may want to do some additional things but, generally, these may be expected.

1. Crutch Practice

If you are not already using crutches you may be advised to obtain a properly fitted pair and to begin practicing for an hour each day. Crutch walking should be done by placing a minimum amount of weight on the painful hip. In addition to familiarizing you with the use of crutches so that you can begin walking shortly after surgery, this may provide some temporary relief of pain before the operation.

2. Blood Storage

Often your surgeon will want to store a pint of your own blood at the hospital prior to your operation. This will then be available for use in the event it is needed to replace normal blood loss during the surgery.

3. Tests

In most cases, your surgeon will want to have your family doctor prepare a complete report on your general health and any specific problems which might complicate your surgery. If you are, for instance, anemic or exhibit a low hemoglobin, your family physician may wish to institute appropriate therapy prior to your operation. Your family physician or internist may wish also to administer tests to evaluate the effects which any long term medication such as diuretics, blood pressure regulators, and steroids may have.

When you go to the hospital

1. It will usually be advisable for you to be admitted to the hospital a day or two prior to the operation. This will allow the hospital ample time to run a complete series of appropriate laboratory tests and x-rays so that your surgeon and anesthesiologist will have an up-to-the-minute picture of your overall physical condition. This will also help them to determine which medications and what type of anesthesia will be best for you.

2. The Operation

Most people want to know how long they will be in surgery. The time that is actually spent operating will vary from a little over an hour to two or more hours, depending upon the particular set of circumstances encountered by the surgeon. If, for instance, there is a pre-existing implant, such as a single hip prosthesis,