

Your Practice Online

P R E S E N T S

TOTAL HIP REPLACEMENT

Multimedia Health Education

Disclaimer

This information is an educational resource only and should not be used to make a decision on hip replacement or arthritis management. All decisions about hip replacement and management of arthritis must be made in conjunction with your surgeon or a licensed healthcare provider.

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MULTIMEDIA HEALTH EDUCATION MANUAL

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INTRODUCTION

The thigh bone (femur) and the pelvis (acetabulum) join to form the hip joint. The joint surface is covered by a smooth articular surface that allows pain free movement in the joint.

The cartilage cushions the joint and allows the bones to move on each other with smooth movements. This cartilage does not show up on X-ray, therefore you can see a "joint space" between the femoral head and acetabular socket.

Section: 1

NORMAL HIP

a. Anatomy of Hip

Pelvis

The Pelvis is a large, flattened, irregularly shaped bone, constricted in the center and expanded above and below. It consists of three parts, the **ilium**, **ischium**, and **pubis**.

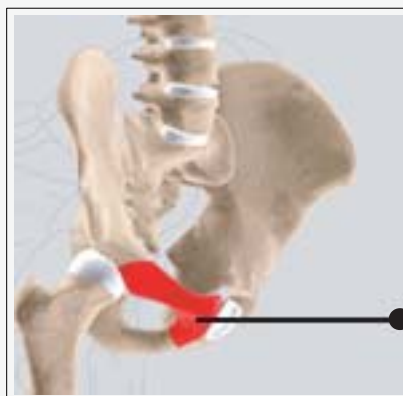
(Refer fig. 1 to 4)

The socket (acetabulum) is situated on the outer surface of the bone and joins to the head of the femur to form the hip joint.



Ilium

(Fig. 1)



Pubis

(Fig. 2)



Ischium

(Fig. 3)



Acetabulum

(Fig. 4)

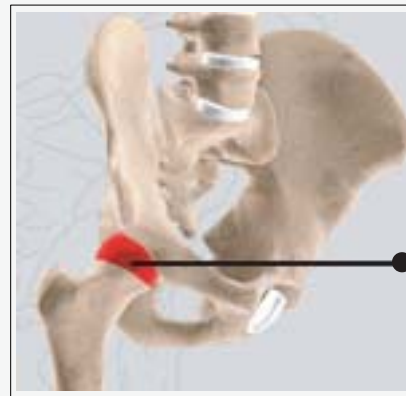
Femur

The femur is the longest in the skeleton. It joins to the pelvis (acetabulum) to form the hip joint.

The upper part is composed of femoral head, femoral neck, Greater and Lesser trochanters.

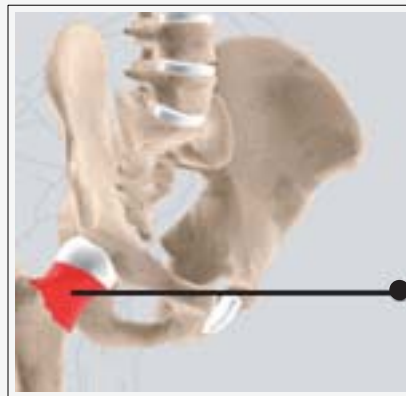
(Refer fig. 5 to 8)

There are numerous conditions that can cause arthritis and often the exact cause is never known. In general, but not always, it affects people as they get older (Osteoarthritis).



Head

(Fig. 5)



Neck

(Fig. 6)



Greater Trochanter

(Fig. 7)



Lesser Trochanter

(Fig. 8)

a. Arthritis

Arthritis is a general term covering numerous conditions where the joint surface (cartilage) wears out.

The joint surface is covered by a smooth articular surface that allows pain free movement in the joint. This surface can wear out for a number of reasons; often the definite cause is not known.

When the articular cartilage wears out, the bone ends rub on one another and cause pain.

Other causes include

- Childhood disorders e.g., dislocated hip, Perthe's disease, slipped epiphysis etc.
- Growth abnormalities of the hip, such as a shallow socket, may lead to premature arthritis.
- Trauma (fracture)
- Increased stress e.g., overuse, overweight, etc.
- Avascular necrosis (loss of blood supply)
- Infection
- Connective tissue disorders
- Inactive lifestyle- e.g., Obesity, as additional weight puts extra force through your joints which can lead to arthritis over a period of time.
- Inflammation e.g., Rheumatoid arthritis

b. The difference between the normal and arthritic hip *(Refer Fig. 9 and 10)*

In an arthritic hip

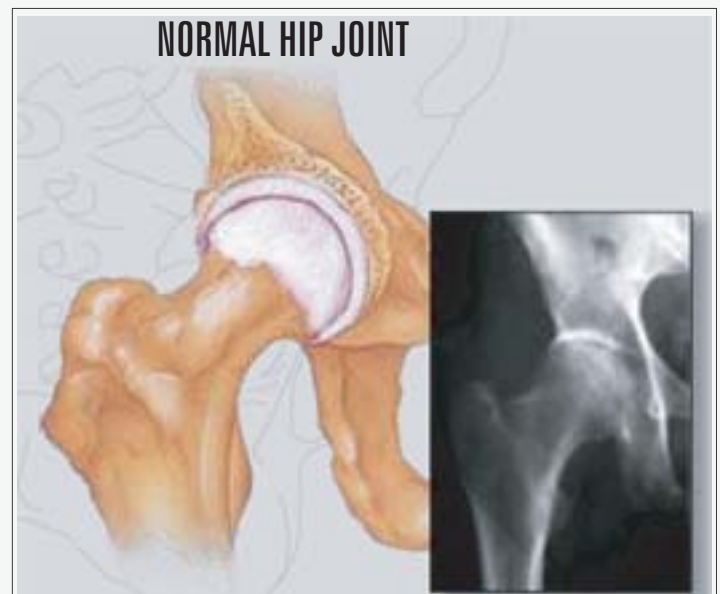
- The cartilage lining is thinner than normal or completely absent. The degree of cartilage damage and inflammation varies with the type and stage of arthritis.

- The capsule of the arthritic hip is swollen.
- The joint space is narrowed and irregular in outline; this can be seen in an X-ray image.
- Bone spurs or excessive bone can also build up around the edges of the joint.

The combinations of these factors make the arthritic hip stiff and limit activities due to pain or fatigue.

c. Diagnosis

The diagnosis of osteoarthritis is made on history, physical examination & X-rays. There is no blood test to diagnose Osteoarthritis (wear & tear arthritis)



(Fig. 9)



(Fig. 10)

a. Surgical Procedure

The surgery is performed under sterile conditions in the operating theatre under spinal or general anaesthesia. An incision is made over the hip to expose the hip joint. The femur (thigh bone) is separated from the acetabulum (hipbone socket).

(Refer Fig.11 and 12)

- The acetabulum (socket) is prepared using a special instrument called a reamer.
- The acetabular component is then inserted into the socket. This is sometimes reinforced with screws or occasionally cemented. *(Refer Fig. 13)*
- A liner, which can be made of plastic, metal or ceramic material, is then placed inside the acetabular component. *(Refer Fig. 14)*



(Fig. 11)

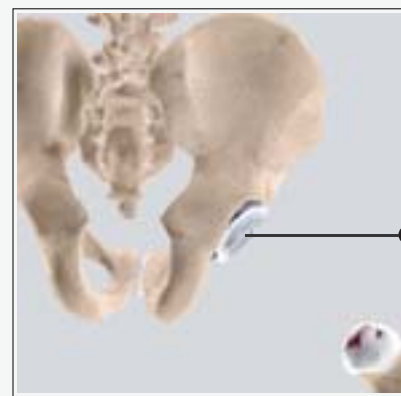


(Fig. 12)



Acetabular Component

(Fig. 13)



Acetabular Liner

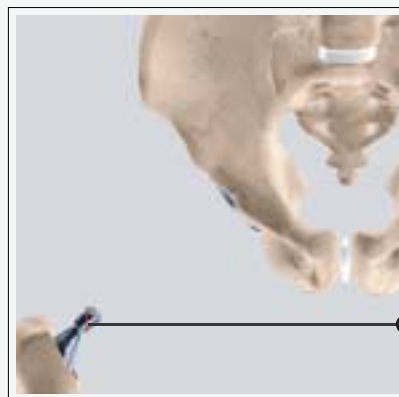
(Fig. 14)

- The femur (thigh bone) is then prepared. The femoral head which is arthritic is cut off and the bone prepared using special instruments to exactly fit the new metal femoral component. (Refer Fig. 15)
- The femoral component is then inserted into the femur. This may be press fit relying on bone to grow into it or cemented depending on a number of factors such as bone quality and surgeon's preference. (Refer Fig. 16)
- The real femoral head component is then placed on the femoral stem. This can be made of metal or ceramic. (Refer Fig. 17)
- The artificial components are fixed in place. The muscles and tendons are then repaired and the skin is closed. (Refer Fig. 18)



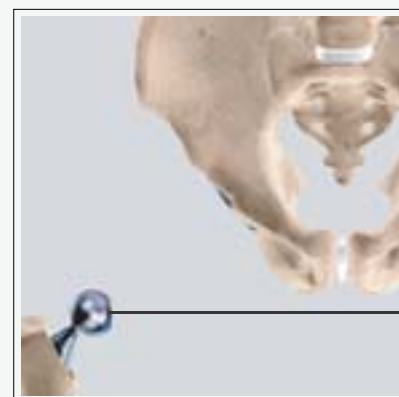
Area Hollowed Out

(Fig. 15)



Femoral Component

(Fig. 16)



Femoral Head Component

(Fig. 17)



Femoral Head Component Fixed

(Fig. 18)

b. Post-op precautions

Remember this is an artificial hip and must be treated with care.

AVOID THE COMBINED MOVEMENT OF BENDING YOUR HIP AND TURNING YOUR FOOT IN. This can cause DISLOCATION.

Other precautions to avoid dislocation are

- You should sleep with a pillow between your legs for 6 weeks. (Refer Fig. 19)
- Avoid crossing your legs and bending your hip past a right angle. (Refer Fig. 20)

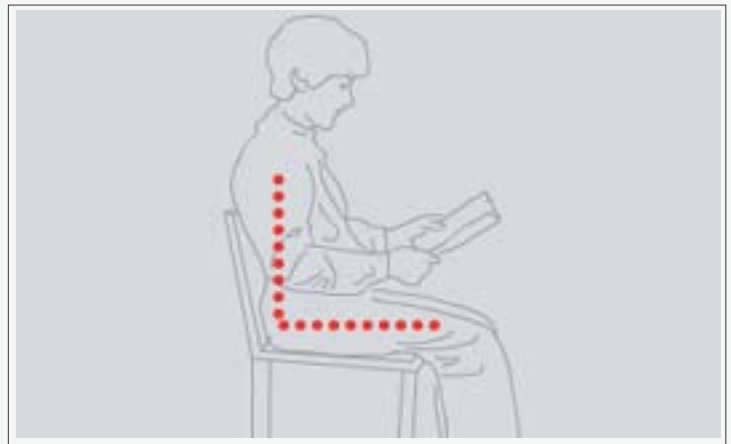


(Fig. 19)



(Fig. 20)

- **Avoid low chairs.**
(Refer Fig. 21)
- **Avoid bending over to pick things up. Grabbers are helpful as are shoe horns or slip on shoes.**
(Refer Fig. 22)
- **An elevated toilet seat is helpful.** *(Refer Fig. 23)*
- **You can shower once the wound has healed.**
- **You can apply Vitamin E or moisturizing cream into the wound once the wound has healed.**
- **If you have increasing redness or swelling in the wound or temperatures over 100.5° you should call your doctor.**
- **If you are having any procedures such as dental work or any other surgery you should take antibiotics before and after to prevent infection in your new prosthesis. Consult your surgeon for details.**

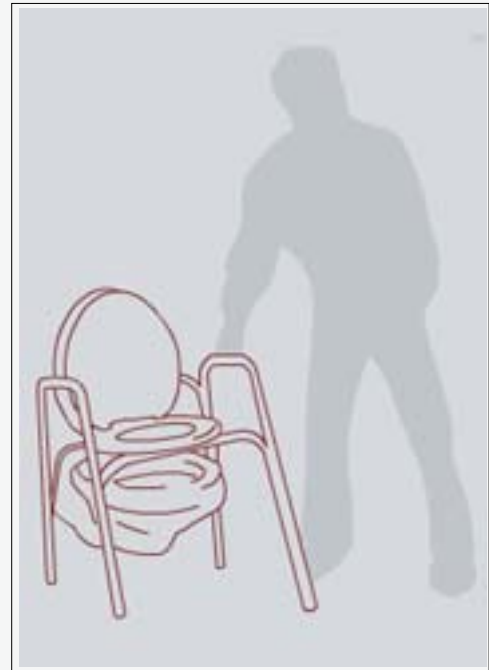


(Fig. 21)



(Fig. 22)

- **If you are having any procedures such as dental work or any other surgery you should take antibiotics before and after to prevent infection in your new prosthesis. Consult your surgeon for details.**
- **Your hip replacement may go off in a metal detector at the airport.**



(Fig. 23)

c. Risks and complications

- As with any major surgery there are potential risks involved. The decision to proceed with the surgery is made because the advantages of surgery outweigh the potential disadvantages.
- It is important that you are informed of these risks before the surgery takes place.

Complications can be medical (general) or specific to the hip

Medical complications include those of the anesthetic and your general well being. Almost any medical condition can occur so this list is not complete.

Complications include

- Allergic reactions to medications.
- Blood loss requiring transfusion with its low risk of disease transmission.
- Heart attacks, strokes, kidney failure, pneumonia, bladder infections.
- Complications from nerve blocks such as infection or nerve damage.
- Serious medical problems can lead to ongoing health concerns, prolonged hospitalization or rarely death.

Specific complications

- **Infection**
Infection can occur with any operation. In the hip this can be superficial or deep. Infection rates are approximately 1%. If it occurs, it can be treated with antibiotics but may require further surgery. Very rarely your hip may need to be removed to eradicate infection.

- **Fractures (break) of the femur (thigh bone) or pelvis (hipbone)**
This is also rare but can occur during or after surgery. This may prolong your recovery or require further surgery.
- **Damage to nerves or blood vessels**
Also rare but can lead to weakness and loss of sensation in part of the leg. Damage to blood vessels may require further surgery if bleeding is ongoing.
- **Blood clots (Deep Venous Thrombosis)**
These can form in the calf muscles and can travel to the lung (Pulmonary embolism). These can occasionally be serious and even life threatening. If you get calf pain or shortness of breath at any stage, you should notify your surgeon.
- **Wound irritation**
Your scar can be sensitive or have a surrounding area of numbness. This normally decreases over time and does not lead to any problems with your new joint.
- **Leg length inequality**
It is very difficult to make the leg exactly the same length as the other one. Occasionally the leg is deliberately lengthened to make the hip stable during surgery. There are some occasions when it is simply not possible to match the leg lengths. All leg length inequalities can be treated by a simple shoe raise on the shorter side.
- **Wear**
All joints eventually wear out. The more active you are the quicker this will occur. In general 80-90% of hip replacements survive 15years.
- **Failure to relieve pain**
Very rare but may occur, especially if some pain is coming from other areas such as the spine.

- **Unsightly or thickened scar**
- **Pressure or bed sores**
- **Limp due to muscle weakness**

Discuss your concerns thoroughly with your orthopaedic surgeon prior to surgery.

Although every effort has been made to explain the complications there will be complications that may not have been specifically mentioned. A good knowledge of this operation will make the stress of undertaking the operation easier for you to bear.

The decision to proceed with the surgery is made because the advantages of surgery outweigh the potential disadvantages. It is important that you are informed of these risks before the surgery.

You must not proceed until you are confident that you understand this procedure, particularly the complications.

Conclusion

We hope that you have found this information helpful. We also trust you will know that if any of the material mentioned in this booklet is confusing or hard to understand, your surgeon will be glad to address your concerns either by phone or on your next visit to the clinic.

Thank you for taking the time to read this material. We understand that this manual contains a great deal of information. We also know that the best results come from the most informed patients and those motivated to see themselves in their best condition as quickly as possible.

Surgery exists as a method of correcting a problem and improving a patient's condition which is everyone's goal. Please be assured that your surgeon and the medical team are more than willing at any time to answer any questions or to review any material before and after surgery. The best results are obtained when people are provided the right information to become informed, motivated, and confident.

Your TOTAL HIP REPLACEMENT Team