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TOTAL HIP REPLACEMENT

Total hip replacement surgery has been one of the most common and successful procedures in Orthopedic Surgery for the past five to six decades for treating patients crippled with arthritis of the hip joint. Now approx. 100,000 Total Hip Replacement operations are done in USA alone every year.

Our hip joint moves millions of time to allow us to do routine activities like walking, sitting/squatting, climbing, playing, dancing etc. in our life without us even knowing. Hip arthritis restricts our activities significantly, our hip becomes stiff and our walk painful with a noticeable limp and every step seems needs considerable effort.

What are the symptoms of arthritis of the hip?

If you are suffering from severe hip arthritis, then typically you may have some or all of the following symptoms in varying severity:

- Pain in the groin and thigh
- Difficulty in walking / Limp
- Stiffness of the hip joint
- Later you may have pain even at rest

The commonest location of pain from the hip joint disease is the groin. You may also notice this pain radiating to the inner thigh and knees or else may have pain in the buttocks and lower back. Limp on walking and restriction of movement follows thereafter. With advance arthritis you may have significant restriction of hip movements, pain at rest, or on turning sides in bed. You also may notice shortening or even lengthening of your affected limb.

Pain in the hip can also be due to affliction of areas other than hip pain. A careful examination must be performed to rule out other conditions confused with hip pain. These include:

- Lower Back Conditions
- Sacroiliac Joint Conditions
- Knee Joint Conditions

Is it possible to manage pain without surgery (NON OPERATIVE TREATMENT)

◆ **Medicines:**

Analgesics / NSAIDs / Pain Killer Medicines: helps in reducing pain and stiffness by decreasing swelling, and inflammation in the joint. Limited use of analgesics is accepted, however, consumption over many years can affect kidney functions adversely and even irreversibly. No particular NSAID is better than other.

Glucosamine / Joint Supplementation: can help relieve your symptoms in early arthritis but have limited or no affect in advanced arthritis. These medicines are safe for consumption for a prolonged period.

- ◆ **Walking aids:** (Cane / Stick / Crutch (all in opposite end) / or Walker) they all help as they reduce burden on your already damaged joint. They help you walk more comfortably and without a limp.

- ◆ **Physical Therapy:** can help maintain motion and strength of the soft-tissues and muscles around the joint. Before surgery these exercises can keep your joint in the best shape possible prior to total hip replacement surgery.

- ◆ **Injections:** does not have much role in hip arthritis.

“Though these above measures will help reduce your symptoms temporarily, but remember they can never reverse changes of arthritis in your hip joint”

Most or all of these measures can help you to get temporary relief, but the duration of relief can vary from few days to even few years. However, if your disabilities and pain are persisting and affecting the activities of daily life, than getting the hip replaced is a better option. Delaying your surgery for long time can lead to deformities of muscles and joints making recovery even after a successful surgery prolonged and difficult.

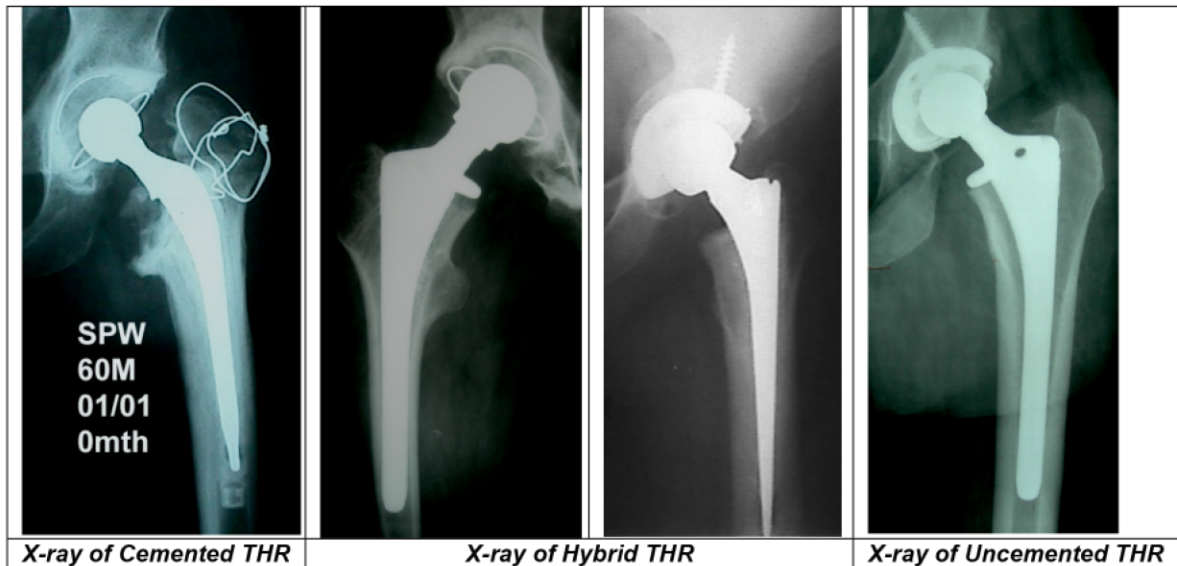
What is a hip replacement surgery?

Hip replacement surgery involves removing the ball and socket of the arthritic hip joint. The top part of the thigh bone (femur head) is either removed and an implant fits within the central canal of the femur (conventional total hip replacement) or femoral head is reshaped and a metal cap fits on it (resurfacing total hip replacement). All the cartilage along with some bone is then removed from the socket (acetabulum), and a new socket is fixed in its place. This newly replaced ball and socket joint gives new joint and allow painless movement.

What are the types of artificial hip joint?

Artificial hip joints are broadly divided into three categories:

- a) **Conventional Total Hip Replacement** has been popular for the last six decades; in which femoral head is sacrificed and an artificial ball of smaller head size is implanted with thick polyethylene cup (now with highly cross link polyethylene). The conventional hip joints are broadly divided on the basis of their fixation with the bone.
 - a. In **Cemented total hip** both the components are fixed to the bone with bone cement.
 - b. In **Uncemented (Cementless) total hip** prosthesis does not require bone cement for fixation; rather it requires to be fitted snugly. The surface of implant has special coating, which has the potential to allow bone on growth over the implant. Cementless implant is the most preferred implant especially in younger patients.
 - c. In **Hybrid total hip** only the femur implant is fixed with cement while the implant on the socket is Cementless. It can be fixed otherwise also if the condition so demands.



- b) **Metal on Metal - Conservative or Surface Hip Replacement** has metal on metal lining on both side. Patient socket is replaced with a snugly fitted metal lining cup (unlike plastic cup in conventional total hip). On the femur side, head is reshaped, not sacrificed, thereby allowing the artificial ball of the size of femur head to be fitted like a cap. It is more stable and allows more movements; hence a patient can sit and squat on floor thereby able to pursue lifestyle activities to suite our culture, something forbidden with conventional total hip replacement. This process is more suitable for young arthritic patients with good bone quality.



Preop X-ray of Surface THR



Postop X-ray of Surface THR



Surface THR Implant

- c) **Metal on Metal - Large Diameter Hip Replacement** is like Surface Hip Replacement in which femoral head is sacrificed (not reshaped), but the artificial ball of the size same as patient's femur head is used. The advantages are same as Surface Hip Replacement.



**Preop X-ray of LDH
MOM THR**



**Postop X-ray of LDH
MOM THR**



LDH MOM THR Implant

- d) **Ceramic Total Hip Replacement** is one of the newer techniques that have ceramic surface lining on both - cup side as well as socket side. Their advantage is their low wear rate, hence better survivorship. However one of the disadvantages is squeaking sound they produce, although in occasional cases.



**Preop X-ray of ceramic on
poly**



**Postop X-ray of ceramic on
poly**



Pt after surgery

For your easy understanding Artificial Hip Joints can also be Sub Grouped According to the Size of Femoral Head. The most common size of femur head (in total hip implant) used in past was 22 mm, but as quality of socket improved 28 mm head became most preferred femur head.

With newer generation Highly Cross Link Polyethylene Socket 32 mm / 36 mm size metal femoral head besides 28 mm, can now be fitted in plastic socket. The same is possible in

Ceramic bearing as well, however, in Metal on Metal total femoral head sizes bigger than 36 mm are possible.

It is now also possible to use different bearings combination in a patient. A Metal Femoral Head can either be used with Highly Cross Link Plastic Socket or with a Metal Socket. Similarly a Ceramic Femoral Head can either be used with a Highly Cross Link Plastic Socket or with a Ceramic Socket and possibly with a Metal Socket in near future (Lab trials).

You with your surgeon can discuss which total hip prosthesis suits you best depending on your diagnosis, requirements and off course the cost (of the implant).

Who Needs Total Hip Replacement?

To make our life comfortable, all of us seek various non-operative modalities, as mentioned above, from time to time to eliminate pain and regain movements. Some of us may get respite from pain and stiffness for years, while others failed to get any relief. The surgical options should be considered when conservative options have failed and no alternative options are available.

Hip joints are commonly affected by causes other than age related arthritis (unlike knee arthritis where the commonest cause is age related wear and tear arthritis). Common causes of hip arthritis requiring total hip replacement are:

- Loss Of Blood Circulation To Head (Avascular Necrosis / Osteonecrosis)
- Rheumatoid Arthritis, Inflammatory Arthritis like Ankylosing Spondylitis
- Failed prior surgery of hip bone (Old Fracture Neck of Femur, Fracture Acetabulum or Fracture Head of Femur)
- Following Developmental Anomalies (Dysplasia of hip, Old Perthes disease)
- Old Infection
- Tumors around hip, etc.

“Hip replacement surgery is not an emergency operation but a planned operation. You and your family along your doctor are the best judge to decide the right time for the surgery”.

Is there any harm in living with the damaged joints?

Hip replacement surgery is considered only for severely damaged hips when conservative treatment has failed. Hip replacement surgery is a wonderful operation and will bring dramatic relief in pain and major changes in your life style. Unlike knee arthritis, for majority of patients, it is difficult to live on with the disabilities caused by hip arthritis.

- If you choose to live with your painful, deformed and unstable joints then you may fall and sustain fractures around hips and stress fracture along shin bone because of osteoporotic bones making your life worse.
- Your deformities and instability will only worsen with passage of time and do one of the followings:
 - It can cause permanent tilt of pelvis bone and spine, which may not correct even after surgery. This can make correction of limb length discrepancy very difficult or even impossible.

- It can cause severe deformities of soft tissues and muscles around the joint and the joint itself, making recovery after a successful replacement surgery difficult, prolonged and even incomplete.
- Also regular consumption of analgesics and anti-inflammatory drugs can do one of the followings:
 - May damage your kidneys irreversibly
 - May cause ulcers in your stomach
 - May cause tendency to bleed more during surgery.

I am afraid of getting operation done in my old age and also afraid of the pain after operation

Total hip replacement surgery is totally painless.

Hip replacement surgery can be considered in any age group whether young or old. If you are an elderly person than most of you are likely to suffer from one or more of the followings ailments i.e. hypertension, diabetes mellitus, coronary artery disease (MI / Angina / heart surgery), asthma, and hypothyroidism. You will undergo a thorough medical evaluation by an anesthetist and physician before surgery.

Newer anesthesia & modern surgical techniques ensure that the surgery is painless. Injections inside the joint during surgery and (PCA) patient control analgesia help in taking care of pain after the surgery. Within 4-5 days after operation (In the hospital stay itself) almost all of you will be comfortable to ambulate (with support initially) in corridor, start going to toilet and able to climb few steps of stairs.

Advances in anesthesia, surgical techniques and newer generation of medicines have made this operation more tolerable, comfortable and a pleasant experience during and especially immediate few days after operation.

I am scared that I can become worse after the surgery and are there any risks from the surgery?

Total hip replacement is a highly successful and predictable operation like total knee replacement surgery. It has a success rate of over 95%. This means overwhelming number of patients after surgery reaps the benefit of surgery. Over 100,000 operations are performed in USA alone every year. In India too this operation is an established procedure for the last many decades. But delaying your surgery for unduly long may not get the optimal results you desire after surgery.

As with any major surgery, there are potential risks involved in total hip replacement surgery. Their incidences fortunately are small.

Complications not directly related to the surgery usually do not affect the result of the operation but can be life threatening and can be:

- Anesthesia related
- Major Surgery related: they include blood clots in legs (deep vein thrombosis) or blood clots in lungs (pulmonary embolism).

Complications directly related to the surgery are less common but they directly affect the outcome of surgery, as the operation is not considered as successful in these cases. Although extreme care and due care is taken to prevent such complications, however they can still happen in best of hand. But still most of these complications can be set right by timely investigations and subsequently by operation. These complications are:

- **Infection:** Though the incidence of serious hip infection is less than 1%, but it is the most significant and fearing complications after hip replacement surgery. You may have pain, discomfort, fever or discharge from the wound after the surgery. Most of the time these infections are superficial from the

wound but can also be deep from the joint itself. If does not responds to antibiotics alone than open debridement of the wound or even removal of hip joint implant may also be required for control of infection.

- **Dislocation of the artificial joint:** The incidence of dislocation is getting lesser with large size femoral head. It can happen early or late after the surgery. Most of them require closed reduction and splinting, however if the artificial hip joint dislocated repeatedly then revision hip surgery to rectify the cause may be needed.
- **Leg length discrepancy:** Minor leg length discrepancy (≤ 1 cm) is well tolerated and does not need any treatment. More than 1 cm of discrepancy especially lengthening of operated limb bothers most of the patient. If the cause of discrepancy is either pre-operative or post-operative pelvic tilt, than it may take up to one year to correct with stretching exercises and time. Sometime it needs revision surgery to correct the deformity.
- Loosening of the prosthesis, Stiffness etc.

What benefits can I expect after the surgery?

Total hip Replacement is one of the most successful joint replacement surgery and large numbers of such operations are performed through out the world every year. Once the surgical scar has healed then you will appreciate the true benefits of the surgery that are as follows:

- Relief in joint pain is often dramatic and many do not have any pain at all
- Correction of deformity and Equalization of the limb length
- Improvement in stiffness and hip movements are regained
- Restoration of routine activities even for sedentary adults

Hip Replacement not only improves your quality of life but also gives you independence by allowing you to return to your routine activities like driving, attending offices and social functions, shopping, enjoying holidays, etc. **With large diameter head implants you are even allowed to sit on floor and squat.** Running, jumping, jogging or other high impact activities are discouraged. But you can resume bicycling, swimming, golf and other low to moderate impact sports.

How long will my artificial hip be expected to last?

With advances in science and metallurgy current generations of implants are strong and durable. Average life span of a knee implant is considered 15 years. Even after 15 years the survivorship of a hip implant is approx. 90 - 95%, which means only up to 10% of implants needs revision. The major long-term problem is aseptic loosening and osteolysis as a result of crumbling of cement or wearing of plastic socket. The life expectancy of Metal on Metal implant or all Ceramic implant is considered better.

Can I go for simultaneous replacement of both the hips?

The decision for one side or both in bilateral hip arthritis is dictated by your medical condition. As there is a very small risk of mortality, therefore in a high-risk patient one hip is operated at a time otherwise we can replace both hips in the same sitting. Simultaneous surgery means one-time anesthesia, one-time hospital stay, one-time medicines and one-time physical therapy. It means saving the cost too. If you are having bilateral hip arthritis than you can discuss with your doctor regarding the possibility of replacing both the hips simultaneously.

What happens during my hospitalization?

Most of the patients are admitted a day before surgery and undergo a thorough medical checkup which includes evaluation by the treating surgeon, anesthetist, intensivist and physiotherapist and investigation like Chest X-rays, ECG, blood and urine test. X-ray images of your hipbone from different angles are taken to plan your surgery.

Hip joint area will be scrubbed with soap and water, painted with betadine solution and then covered with a sterile drape.

Preferable choice of anesthesia is Spinal anesthesia (it anesthetize both legs only) with sedation. The duration of surgery for one hip is about approx. 90mts. You will be kept in recovery room for one day for the monitoring of vital parameters. You will be requiring a pillow between your legs for couple of days after the operation.

On 2nd day your drainage tubes will be removed and bedside sitting is started, *while dressing will be changed on the 3rd day your. Walking with support & toilet training will be started from 2nd or 3rd day onwards depending on your comfort.*

Most patients can ambulate comfortably with support, start going to toilet and also able to climb few steps of stairs. Most are comfortably discharged on 5th – 6th day. In exceptional case or if medical condition warrant then you stay little longer in the hospital.

Before leaving the hospital physiotherapist and staff will show you safe techniques of simple activities like getting in and out of bed, toilet training, managing steps including stairs if possible and getting in and out of a car.

What happens after I go home?

The process of steady recovery started in hospital usually continues at home as well.

You will be continued on medicines prescribed by your doctor, but you will be requiring analgesics for few more days.

You will continue to exercise and walk with support of walker / stick. You will need a physiotherapist at home to help you in regaining hip movements, muscle strengthening exercises, stairs climbing and progressive ambulation from walker to cane and then walking without support, remember walking is the most simple and important exercise you can participate in.

Do not wet the operative area until after the stitches removal at 2 weeks after the surgery.

Progress varies from patient to patient, so discharge instructions may also vary.

How long does it take to recover?

You must understand that the surgery can only correct the deformity and pain, but the muscles are needed to be strengthened through regular exercises for achieving goals of surgery. The time taken to regain range of movements and to achieve good muscular strength varies from patient to patient, however by 3-6 weeks most of you will be ambulating to your needs comfortably, doing most of your activities independently. In Cementless total hip replacement please use stick for at least 3 months after surgery to allow bony on growth on the implant.

You must actively participate in the [rehabilitation program after total hip replacement surgery](#), working on your own as well as with your physical therapist to achieve optimal results.

What is the cost of surgery?

The cost of surgery differs according to the category of room and type of implant chosen. Please refer to THR packages.

Is there any special care to be taken after hip replacement surgery?

Replaced hip remain integral part of your body and little extra care should give you years of service. You can protect it by taking a few simple steps:

Watch for and prevent infection: Any foreign implant (like your new hip) is more sensitive to infection, and therefore you must be diligent about preventing infection. If you suspect infection of any kind, in the operated area or elsewhere in the body, please contact your doctor right away.

Regular Follow-up: Your regular follow-up visits will ensure the long-term success of your operation. After stitch removal at 2 weeks your routine visit schedule will be 6 weeks, 3 months, 1 year, 2 year followed by every 5 years. If required, follow-up X-rays will confirm proper placement and alignment of the artificial joint.

Weight control and regular exercises: Keeping your weight under control. This will reduce the amount of pressure and stress on your artificial implant. Participate regularly in low impact activities to strengthen your new hips and get the exercise you need to stay fit.

Regular treatment of medical conditions like diabetes mellitus, rheumatoid arthritis etc.

What am I not supposed To Do Anything after My Hip Surgery?

You are supposed to follow few precautions strictly after Conventional Total Hip Replacement Surgery, but only initially if large head is used as an implant.

Avoid high impact activities / sports such as running, vigorous walking and skiing
Do not attempt to squat or Indian type commode
Do not cross your legs or twist-operated leg in or out
Do not bend operative side excessively
Do not turn or roll on opposite side without pillow

But you are allowed to do many of these activities after Large Diameter Head M-O-M or Surface Hip Arthroplasty.

How should I prepare for total hip replacement surgery?

Above facts will not only help you understand the issues involved in the success of total knee replacement surgery, but also helps you prepare mentally for the surgery. Preparation for surgery requires

- Faith and commitment
 - In your doctor and accepting realistic goals
 - Total commitment and positive thinking: because outcome of surgery depends on the team consisting of yourself, your surgeon and physiotherapist. Your family is also an important part of this team. All of us together will work for a common realistic goal and towards the success of your surgery.
- Loose

- Excess weight: Because excess weight causes more strain on already damaged joints, losing weight is one of the best ways to improve the condition of your knee and optimize surgical results.
- Exercises
 - To strengthen your muscles and improving range of movements.
- Thorough medical checkup
 - Before surgery we would like to make sure that your condition is well enough to undergo this operation and also to exclude certain conditions like-dental infection, ear, nose and throat infection, skin infection, urine infection etc.
- Stop
 - Smoking: if you have not already done so, it is suggested that you stop smoking. This will be good for you during and after your surgery.
 - Stop analgesics / pain killer medicines 7 – 10 days before surgery.
- Inform your doctor
 - Blood thinner medicines, as they needed to be stopped under medical supervision before surgery.
 - Allergies with medicines etc.
- Arranging blood donors for surgery
 - *Routinely* blood transfusion is *not* necessary after Single *Total Hip Replacement*. But if *your hemoglobin is less than 10gm%* then you may require 1-2 units of blood for your operation, so kindly arrange donors for this purpose. If both of your hips need replacement in the same sitting, then up to 2-3 units of blood may be required depending on your hemoglobin levels.
- Timing of surgery
 - Like any major surgery, Total hip replacement is a family affair in our circumstances as your surgery affects entire family. Therefore you and your family should look at the convenient date and discuss with your doctor rather than other way around.

Life after hip replacement surgery

You should have a near-normal range of motion and adequate strength in your hip to perform most daily activities after completing the post-operative hip rehabilitation process. After hip replacement surgery, patients have effectively returned to walking, driving, swimming, golf, stationary cycling etc.

You can reach me on ask@drvivekmittal.com for more information.