



DELHI INSTITUTE OF TRAUMA & ORTHOPEDICS

- This guide was created to give you information on Total Knee Replacement
- DITO is committed to the success of your operation. We hope that this guide helps you in your preparation
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A patient's guide to
everything you
need to know about

Hip Replacement Surgery



Healing Hand

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Hip Replacement Surgery “A Change of Life”

-PREFACE-

Total Hip Replacement is one of the most successful operations for people who suffer from extreme pain in their hip joint. You may have likely already tried alternative treatment such as pain medicine, bone supplements and physiotherapy.

If you have decided that you need this operation, here at Delhi Institute of Trauma & Orthopedics, we are committed to making your recovery a comfortable and successful one. Furthermore, improvements in the design of hip implants and development of newer and less invasive surgical techniques improve recovery time.

The results of this operation can vary depending upon your pre existing medical conditions such as diabetes, your overall health, obesity and type of ailment that you may have.

This manual is your guide. I urge you to read it carefully, refer to it frequently, and bring it with you to the hospital.

Good Luck and Best Wishes

Dr.Shekhar Agarwal

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INTRODUCTION

The hip joint is one of the largest weight bearing joints of the body. Most of our activities like walking, jumping, sitting, squatting, dancing, swimming, climbing etc. depend on our hip as it provides mobility along with stability. In routine life our hip moves millions of times to perform the above activities without even knowing. However, once it is damaged not only does the hip become stiff, we also start to walk with a painful limp and every step needs considerable effort, restricting our activities significantly. It is only then that we come to realize how much freedom of movement means to us.

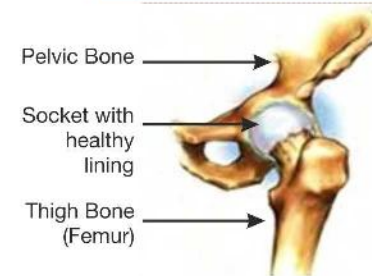
Replacement of hip joint is a well established and a very successful operation for the last 50 years in which the diseased hip joint is replaced with an artificial hip joint. It not only provides you freedom from pain, and stiffness, but also improves the quality of life. This specialized operation is now very successful and has been accepted very well both by the medical fraternity and society.

This handbook aims at providing you information about Total Hip Replacement surgery. It discusses in brief the various issues related to the surgery and its after care helping you prepare for this operation.

THE DIFFERENCE BETWEEN A NORMAL AND ARTHRITIC HIP

Your normal hip joint consists of a round head (ball) of thighbone joining the acetabulum (socket / cup) at the pelvis in a ball- and – socket arrangement. A healthy joint is a remarkable mechanism due to perfect matching of ball with the socket. A smooth and strong layer of articular cartilage (like velvet) aids it. This lining acts as a padding to absorb stresses and ensure almost frictionless movements of your hip joint.

Normal Hip



Arthritic Hip



WHAT IS AN ARTIFICIAL HIP JOINT?

An artificial hip joint is the prosthesis which consists of a **Socket**, a **Ball** and a **Stem**. This prosthesis is used to replace the damaged hip joint.

a. Socket (or Cup) is usually made up of two parts, an outer metal **shell** and inner smooth surface called a **liner**. The entire socket may also be made of plastic. The socket is pressfit into the bone using screws or fixed using specialized bone cement.

b. Ball (or Head of femur) is made of stainless steel alloy or ceramic material and fits perfectly into the Socket / Cup.

c. The Stem is also made of stainless steel alloy and fixed into the thigh bone (Femur) which could either be cemented or press fit without cement. The stem mounts the Ball / Head on top of it.

Hip Implants



WHAT ARE THE TYPES OF ARTIFICIAL HIP JOINTS?

Artificial hip joints are broadly categorized by:

1. How the implants are **fixed** to bone
2. The **type of material** used for the ball and inner lining of the socket (Bearing Surface).

1. Fixation:

The socket and the stem are the only parts that are in direct contact with the bone. The ball is mounted on the stem and fits perfectly into the socket. The effectiveness of the surgery depends on how well the stem and the socket fit into the bone.

Medical research and clinical studies have shown that pressfit or uncemented fixation gives better results as the bone can grow over the implants. However, there are limitations and every total hip replacement is unique.

In certain cases, your surgeon will recommend a cemented total hip which means that both the socket and stem will be fixed to the bone using bone cement. In other cases, the surgeon may recommend a hybrid total hip in which one implant is attached using bone cement, and the other pressfit or uncemented.

The type implants differ based on whether fixation is **Cemented**, **Uncemented** or **Hybrid**.

Cemented



Uncemented



Hybrid

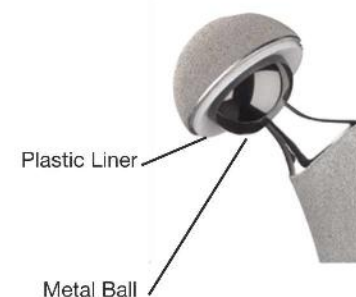


2. Materials used (Bearing Surface)

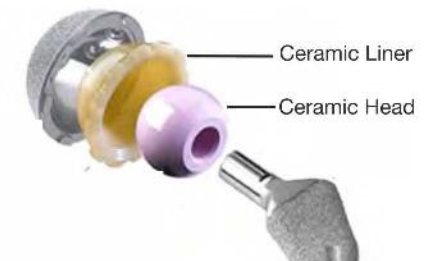
The ball and the inner lining of the implant are in direct contact which creates some friction every time a person moves his hip. As a result, the type of material used for the ball and the inner lining of the socket can affect the wear and tear to the artificial hip.

Typically, in a total hip replacement, the surgeon will opt for a **metal ball** and a **special plastic inner liner**. This is the most common option in elderly patients because the wear and tear of the inner lining is very little and the patient can walk comfortably with his hip for at least 15 years.

Metal Ball / Plastic Liner



Ceramic Ball / Ceramic Liner



In younger patients who require total hip replacement, the surgeon may opt for using a ceramic head and ceramic liner as this gives more range of motion and results in almost negligible wear and tear allowing the younger patient to use his hip for a longer period of time.

The surgeon may choose any combination of the above such as a ceramic ball and plastic liner, or a metal ball and ceramic liner depending on your specific condition.

ARE YOU A CANDIDATE FOR TOTAL HIP REPLACEMENT?

Total hip replacement is not an emergency operation but a planned operation. This operation is usually done for a damaged or a diseased hip joint for various reasons. It should be considered only when no alternative solutions are available. Some of the indications when you can consider this operation are as follows:-

a. Severe pain : you must have been taking anti- inflammatory medicines (pain killers), doing physiotherapy or walking with help of waling aids (stick). But if the pain is getting worse or interferes with your sleep, perhaps time has come to consider yourself for this surgery.

b. Significant stiffness of the hip joint restricting your mobility, including daily routine activities.

c. Fractures around the hip joint with damage to the cup.

d. Some diseases where you will require this operation are: Advanced **Osteoarthritis**; **Rheumatoid Arthritis**; Ankylosing Spondylitis; Avascular necrosis of hip joint; Failed prior surgery of hip, Tumors around hip etc.

Total hip replacement is not ideal for paralytic or other extreme conditions but exceptions do exist.

You beside your doctor are the best judge to decide the right time for the surgery.

Consider yourself ready for the surgery when your pain becomes chronic and constantly debilitating to the extent of restricting your daily activities severely, and when medication does not help you much.

WHAT ARE THE BENEFITS OF TOTAL HIP REPLACEMENT?

Total hip replacement is the most successful joint replacement operation. Relief of joint pain is often dramatic. The restorations of activities for sedentary adults are complete.

Most of you will regain your activities and will be able to walk well without any limp, and will not require any walking aid. Improvement in stiffness especially in rheumatoid arthritis is significant.

Restoration of limb length of the leg is also an important advantage of this operation.

It must be remembered that artificial hip joint is a good hip though not a normal hip. While swimming and brisk walking is considered safe, heavy labour jobs or repeated heavy impact should be avoided.

However after surface hip replacement most of the patients can do moderate impact activities such as golf and tennis in addition to sitting on floor.

WHAT IS THE RIGHT AGE FOR TOTAL HIP REPLACEMENT?

As such age is no bar for this surgery, but preferably should be done in the older age group.

In younger age group, it should only be considered when patient is severely crippled due to severe rheumatoid arthritis post traumatic arthritis of hip or avascular necrosis (AVN).

CAN I UNDERGO REPLACEMENT OF BOTH HIPS ?

Yes, both the hips can be replaced at the same sitting if you are medically fit. It means one time anaesthesia, one time hospital stay, one time surgery and one time pain medication. It will be cost effective as well. Your doctor can advise you if you can undergo replacement of both hip at the same sitting.

WHAT ARE THE RISKS INVOLVED IN THIS SURGERY?

- a. Anaesthesia related complications: they are same as in any other major surgery.
- b. Any major surgery related complications: they are blood clots in the leg (deep vein thrombosis), or in the lung (pulmonary embolism) etc.
- c. Total hip surgery related complications: they are less common. Some of these cases may even require a revision surgery. Some of these complications are:

Dislocation of the artificial hip joint: Incidence of this complication is low and most of them normally require closed reduction and splinting. But if the artificial joint dislocates repeatedly, then a revision surgery may be required.

Infection : it is the most significant complication in the artificial hip joint.

However, the incidence of serious hip joint infection is very low (**less than 1%**). Most of these infections (superficial or deep) respond favorably to antibiotics, but if the discharge continues, then one may require removal of artificial hip joint for the control of infection. Minor leg length difference Stiffness

d. The major long- term problem is loosening of the hip joint prosthesis. The other long- term complication is wearing of the plastic cup.

e. Fracture neck of femur in Surface Hip Replacements, especially in 1st 6 months after surgery.

WHAT IS MINIMALLY INVASIVE SURGERY (MIS)?

In this the entire operation of hip implantation is done with skin incision size of 10 cm or less. The hip joint is approached through inter muscular intervals. The advantage is early recovery and less pain. This approach is done in selected patients. Though the skin incision is small but inside operation is exactly the same as in any other approach.

HOW LONG DOES AN ARTIFICIAL HIP LAST?

Artificial hip joint is a good hip joint but not a normal one. The successful outcome of this surgery with newer long lasting durable material and standardized techniques is excellent. Over the years remarkable advances have been made in joint replacement technology to improve their durability. 90-95% hip replacements are successful for 15 years. By 10 years approximately 25% of all artificial hips will look loose on X-rays, but only few of these will be the symptomatic enough to require revision. Obesity, heavy labour jobs and very strenuous activity can affect the longevity of the artificial hip joints.

HOW LONG DO I STAY IN THE HOSPITAL?

Total stay in the hospital routinely varies from 5-7 days, but can be longer depending on your medical condition.

HOW DO I PREPARE FOR TOTAL HIP REPLACEMENT?

Before surgery your surgeon will like to ensure that your condition is well enough to undergo this operation. He will also like to exclude certain conditions likely to affect this surgery.

Being **overweight, smoking and consuming alcohol** in large quantities will affect the outcome of your surgery.

Inform your doctor about any focus of infection e.g. dental, throat, boil/furuncle (skin infection), urinary tract infection etc. They must be treated before you can be taken for this surgery.

Blood requirement will be determined as per your haemoglobin level before operation. Blood transfusion is not usually required for Primary Total Hip Replacement. However upto 3-4 units of blood may be required for revision surgery.

Inform your doctor about anti-rheumatoid medicines, painkillers etc. before the operation as some of them may need to be stopped or changed.

Commit to the success of this surgery. Accept its limitations.

WHAT HAPPENS DURING MY STAY AT THE HOSPITAL?

Medical and Lab evaluation : You would be admitted a day prior to the surgery. You will be reviewed by your surgeon and a team of an anaesthetist, physician and physiotherapist on the day of admission. All your investigations including blood, urine, X-ray Chest & ECG will be taken and a fresh X-ray of the affected hip will also be taken. You will be advised some basic exercises of hip, knee and chest.

Operation preparation : You will be required to scrub the surgical

water the night before and on the morning of surgery, you will be helped by a nursing aid, after which she will cover your hip and thigh with a sterile towel. After midnight, you will not be able to eat or drink.

On the operation day : For surgery we prefer to anaesthetize your legs only by spinal - epidural anaesthesia or alternatively you may be given General Anaesthesia. The duration of surgery routinely is 1 1/2 to 2 hours. Your doctors will talk to your family after the surgery to report your progress. Some of you may have to stay in the ICU the monitoring of vital parameters for a day.

After the surgery : Immediately after the operation for few days a triangular pillow is used in between the legs. It is a must, though it may be little uncomfortable. The drainage tubes are removed on the 2nd post operation day and the dressing is changed on 3rd post operation day. You will be allowed to sit up in the bed from 2nd day onwards. A physiotherapist will help you do hip and knee exercises and chest physiotherapy.

INITIAL REHABILITATION AND EXERCISE

The initial rehabilitation generally takes 5-7 days during the hospital stay. It will gradually begin on 3rd day with standing, followed by taking a few steps with the aid of a walker or crutches. You will be allowed to take weight as tolerated on the operated limb beginning 2 - 3 day after the surgery. Most patients with a stable hip and good muscles will be able to walk with the stick and will also be able to climb stairs before discharge from the hospital.

The other part of initial rehabilitation includes learning to sit and getting up from the chair, commode shifting and physical therapy to further strengthen your muscle and improve your motion. You will

also be told some don'ts e.g. not to bend forward more than 90 degrees, always using a thick pillow between your legs and using a high chair including high toilet seat (if your chair is low, using a cushion is mandatory).

RESTRICTIONS AFTER TOTAL HIP SURGERY

After the Conventional Total Hip operation few precautions need to be followed strictly:

- Do not cross your leg.
- Do not bend the operated hip excessively.
- Do not twist the operated leg in or out.
- Do not roll or lie on unoperated side without pillow in between the legs.
- Do not squat or sit cross leg.
- Do not use Indian type commode.

Sitting cross leg and squatting after the surgery

You may be allowed to sit cross legged depending on your muscle strength and overall level of fitness. However, squatting is usually not advised. Your doctor will let you know what is suitable for you.

GUIDELINES FOR HOME AFTER DISCHARGE

Medicines : You must follow them as mentioned in your discharge summary.

Activity / Therapy : At home you will be required to follow the same protocol as has been explained during the hospital stay. If you do not feel confident you may call a physical therapist at home to help you become independent in walking, going up and down stairs, getting in and out of bed, and doing exercises to improve the range of motion and strengthen your hip joint.

Care of wound : Do not try to interfere with your dressing or wet your hip area till stitches are out. They are usually removed two weeks after the operation.

Do call your Surgeon if you notice any of the following symptoms :

- Increased hip pain
- Pain or swelling in calf or leg
- Unusual redness, heat or drainage at the incision site
- Trouble in breathing; shortness of breath
- Fever over 100 degrees F

Return to work : You can usually return to work approx. after 2- 3 months or as advised by your surgeon. Car driving etc. is possible after 2-3 months.

HOW DO I TAKE CARE OF MY HIP?

- Avoid putting extra weight.
- Avoid heavy labour jobs.
- Avoid too strenuous activities like dancing, jogging, playing sports etc.
- Do regular exercises of your hip and Knee muscles.
- Be diligent in preventing infection in any part of the body.
- Keep your diabetes under good control.
- If you are suffering with collagen disorders like rheumatoid

SHOULD I HAVE A TOTAL HIP REPLACEMENT?

Total hip replacement is an elective operation. All your doubts must be cleared and all your questions must be answered before you take the decision for this surgery. Before deciding in favor of surgery you must consider your disability, risk of surgery and the benefits you are likely to gain. In the end the decision for surgery should be yours rather than of your Surgeon alone.

If you still have any queries, please do not hesitate to contact us.

CASE REVIEWS & TESTIMONIALS



Seema Bhatia 46 years old lady sequelae of infective arthritis of the hip Presented to us with fused hip joint in bad position. So she was not able to carry out her daily activities. Over the years, she started developing backache due to poor posture. We took challenge of giving her mobile hip again and operated on her right hip with total hip replacement. Total hip replacement in such case is difficult due to abnormal anatomy. High level of surgical skills is required to perform these kind of surgeries.

Personal Testimonial : Dr. Shekhar Agarwal is no less than a God sent for patients of bone and joints. He is not only a proficient doctor but also a very kind gentleman. My hearty thanks to such a competent doctor and wonderful person. I also admire his entire team of doctors + nurses for their excellent work. (June 2016)



Renu Sharma 65 years old lady sustained intertrochanteric fracture in Jan 2016 for which surgery (Proximal Femoral Nailing) was done. The fracture did not unite and also she developed infection around the implant. Despite multiple surgeries in next 6 months she was not cured and was unable to walk. We did 2 stage total hip arthroplasty for her. Dealing with infected non union of proximal femoral fracture is challenging. In the first stage implant was removed and anti-biotic spacer was placed to eradicate infection and in the second stage definite total hip replacement was done.

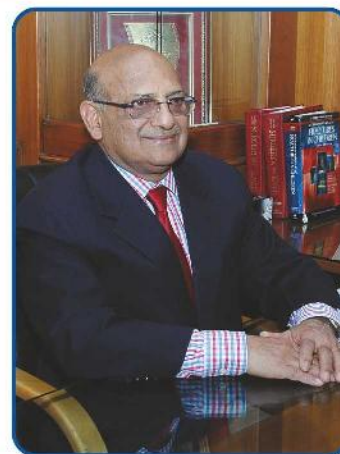
Personal Testimonial : I suffered a fall on Jan 2016 resulting in intertrochanteric fracture. Series of surgical interventions were done till Aug 2016. We came to Dr. Shekhar Agarwal. He along with his team performed Total Hip Replacement. I am extremely thankful to his entire team and staff. Dr. Shekhar Agarwal has been very caring, communicative and very patient friendly, very grateful to him (Jan 2017)



Sulgun Rejepova 35 years old lady R/o Turkmenistan, known case of rheumatoid arthritis sustained fracture neck of femur for which she was operated at her native place. Despite surgery patient continued to have persistent pain and was unable to bear weight on the affected leg. She was taken for surgery and implant removal and conversion total hip replacement was done at Sant Parmanand Hospital. She was allowed to walk on second post operative day and went back to her country very happy..

Personal Testimonial : Thank for very warm welcoming. We are pleased very much with Dr. Shekhar Agarwal and his team. Amazing job. Well organised and professional approach. Well done! (Feb 2017)

DR. SHEKHAR AGARWAL



As Chief Surgeon, Dr. Shekhar Agarwal's super specialty is Joint Replacement surgery. His skill as a surgeon, extensive global experience in this field and continuing academic interests have been instrumental in transforming DITO into one of the top Joint Replacement Institutions in India. Currently, he does more than 1,000 joint replacements per year including Total Knee, Total Hip, Revision Knee, Revision Hip, Elbow and Shoulder replacements.

Dr. Shekhar Agarwal has been President of Delhi Orthopaedic Association.

He is a Visiting Professor at the Tamil Nadu Dr. MGR Medical University. His clinical acumen and prowess are well recognized in India & abroad.

DELHI INSTITUTE OF TRAUMA & ORTHOPEDICS (DITO)

SPECIALITY UNITS

Joint Replacement Unit : Dr. Shekhar Agarwal, Dr. Simon Thomas, Dr. Anuj Jain

Arthroscopy & Sports Medicine : Dr. Shekhar Srivastav, Dr. Harjoban Singh

Spine Surgery Unit : Dr. Shankar Acharya, Dr. Amit Sridhar

Paediatric Orthopaedics : Dr. Nargesh Agarwal

Hand Surgery : Dr. Abhishek Sharma



"Team Performing Replacement Surgery"

WHAT WE OFFER

- Joint replacement of Knee, Hip and Shoulder
- Arthroscopic surgery of knee and shoulder
- Spine surgery including spinal trauma deformity correction, spinal fixation
- Complex fracture and trauma care
- A team of surgeons working in close co-ordination
- 24 hour trained orthopedic surgeon in attendance
- Intensive care unit equipped with monitors and ventilators
- Laminar flow operation theaters
- 24 hour blood bank



Healing Hand

