

Everything you may like to know about

Knee Replacement Surgery

A Patient's Guide



Indraprastha Apollo Hospitals
touching lives DELHI

www.apollohospdelhi.com

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DISCLAIMER: This brochure has been prepared for making you familiar and informative about the knee replacement in general. Persons with questions about treatment must consult a physician who is informed about the condition and the various modes of treatment available.

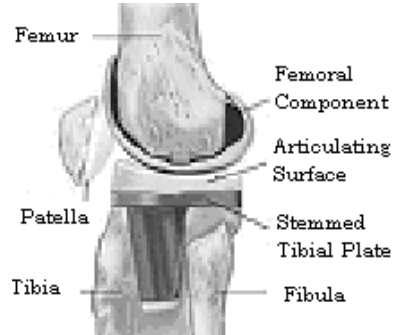
INTRODUCTION:

The knee joint is among the strongest largest and most complex joints of the body. Whenever you walk, sit, turn around, drive or perform many seemingly simple movements, you are depending on the knee for support and mobility. It is the largest joint in the human body and also bears the full weight of the body. On an average a 70 kg human will exert about 210 kg of force on the knee during sports such as football, basketball and, of course, running.

You know its importance once your knee starts to become painful, stiff and your activities are also restricted. At that time you realize what the freedom of movement means to you.

This booklet provides information regarding total knee replacement surgery. The surgical procedures, pre-operative and post-operative care, the risks and benefits of surgery, as well as rehabilitation program after surgery.

Please read and discuss this booklet with your family before your total knee replacement surgery.



At Indraprastha Apollo Hospitals the Orthopaedic Staff's goals are to restore your knee to a painless, functional status, and to make your hospital stay as beneficial, informative and comfortable as possible. Here we use the most advanced and latest techniques to replace the knee joint with an artificial one that relieves pain, allows you to strengthen your legs, corrects the leg deformity (legs become straight) and improves the quality of life.

HOW OUR KNEE JOINT FUNCTIONS

The knee is a complex joint, which is made up of the lower end of the **femur** (the thigh bone), and the upper end of the **tibia** (the leg bone). The femoral condyles usually glide smoothly on the tibia plateau, allowing for smooth, painless motion of the lower limb.



The knee joint is a hinge joint. It consists of three bones:

- Thigh bone (Femur)
- Leg bone (Tibia)
- Knee cap (Patella)

For a knee to function normally, the quality of smoothness where each bone moves upon the other becomes important in the function of the knee joint. The surfaces of all three bones coming into contact with each other are normally covered with a smooth gliding surface known as **articular cartilage**, a smooth substance that cushions the bones and enables them to move easily.

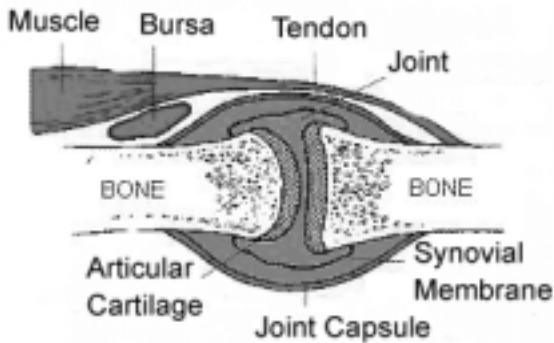
All remaining surfaces of the knee are covered by a thin, smooth tissue liner called the **synovial membrane**. This membrane releases a special fluid that lubricates the knee which reduces friction to nearly zero in a healthy knee.

Normally, all of these components work in harmony. But disease or injury can disrupt this harmony, resulting in pain, muscle weakness, and decreases functions of the knee.

COMMON CAUSES OF KNEE PAIN AND LOSS OF KNEE FUNCTION

The most common cause of chronic knee pain and disability is arthritis; of which Osteoarthritis, rheumatoid arthritis, and arthritis following injuries are the most common forms.

Osteoarthritis usually occurs after the age of 50 and often in an individual with a family history of arthritis. The cartilage that cushions the bones of the knee softens and wears away. The bones then rub against one another causing knee pain and stiffness.



Rheumatoid Arthritis is a disease in which the synovial membrane becomes thickened and inflamed, producing too much synovial fluid, which over-fills the joint space. This chronic inflammation damages the cartilage and eventually causes cartilage loss, pain and stiffness.

Post Traumatic Arthritis can follow a serious knee injury. A knee fracture or severe tears of the knee's ligaments may damage the articular cartilage over time, causing knee pain and limiting knee function.

IS TOTAL KNEE REPLACEMENT FOR YOU?

Are you experiencing any of the following ?

- Severe knee pain that limits your everyday activities, including walking, going up and down stairs, and getting in and out of chairs. You may find it hard to walk more than a few blocks without significant pain and you may need to use a cane or walker.
- Moderate or severe knee pain while resting, during the day or night.
- Failure to obtain pain relief from drugs. Their effectiveness in controlling knee pain varies greatly from person to person. These drugs may become less effective for patients with severe arthritis and may also have serious side effects with prolonged use.

In summary, in the early stages when the arthritis is mild to moderate, pain is relieved by conservative means like physiotherapy, medications or injection etc. In the advanced stage however when the pain is severe and medication etc don't relieve the pain anymore and your daily activities become very restricted, you need the operation of total knee replacement.

BENEFITS OF KNEE JOINT REPLACEMENT

Your Orthopaedic surgeon is the right person to decide for the surgery. After undergoing the surgery, you will reap the benefits of the surgery.

These include:

- Relief from joint pain
- Increased mobility
- Correction of deformity (straight legs)
- Increased leg strength (if you exercise)
- Improved quality of life ability to return to normal activities.

Most likely running, jumping, or other high – impact activities will be discouraged.

THE ORTHOPAEDIC EVALUATION

The Orthopaedic evaluation consists of several components:



- A medical history, in which your Orthopaedic surgeon gathers information about your general health and asks you about the extent of your knee pain and your ability to function.
- A physical examination to assess your knee motion, stability, and strength and overall leg alignment.
- X-rays to determine the extent of damage and deformity in your knee.
- Your Orthopaedic surgeon will review the results of your evaluation with you and discuss whether total knee replacement would be the best method to relieve your pain and improve your function.

PREPARING FOR SURGERY

Medical Evaluation If you decide to have total knee replacement surgery, you will be asked to have a medical check-up two-three weeks before surgery to assess your health and to rule out any conditions that could interfere with your surgery.

Medications Tell your Orthopaedic surgeon about the medicines you are taking. He will tell you which medicines you should stop taking and which you should continue to take before surgery.

Urinary Evaluation A preoperative urological evaluation should be considered for individuals with a history of recent or frequent urinary tract infections.

Blood Requirement Your surgeon will inform you prior to the surgery to arrange for blood, if required during the procedure.

Home Planning Some modifications at your home are suggested, to make your recovery easier post surgery.

Consider the following:

- A stable chair for your early recovery with a firm seat cushion (height of 18-20 inches), a firm back, two arms, and a footstool for intermittent leg elevation.
- Removing all loose carpets and cords.
- A temporary living space on the same floor, because walking up or down stairs will be more difficult during your early recovery.
- After surgery you will be requested to use only western style toilet to avoid sitting on the floor or squatting.

TIME FOR YOUR SURGERY

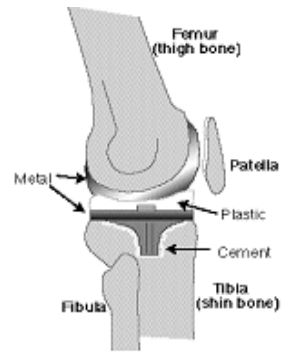
You will most likely be admitted to the hospital a day before your surgery. After admission, a nurse takes your vital signs. You will be evaluated by a member of the anesthesia team. The most common types of anesthesia are:-

- **General anesthesia**, in which you are asleep throughout the procedure.

- **Spinal or epidural anesthesia**, in which you are awake but your legs are anesthetized. The epidural anesthesia is better for knee replacement because it provides pain relief for two- three days after operation. The procedure itself takes about **75 minutes**.

A total knee replacement is a surgical procedure whereby the diseased knee joint is replaced with artificial implant. The knee is a hinge joint, which provides motion at the point where the thigh meets the leg. During a total knee replacement, the end of the femur bone is removed and replaced with a metal shell. The end of the leg bone(tibia), is also removed and replaced with a channeled plastic piece with a metal stem.

Depending on the condition of the knee – cap (Patella) portion of the knee joint, a plastic "button" may also be added under the surface of knee-cap. Many different types of designs and materials are currently used in total knee replacement surgery.



Total Knee Replacement (side view)

After surgery, you will be moved to the recovery room, where you will remain for one to two hours, while your recovery from anesthesia is monitored. After that you will be taken to your allotted hospital room.

YOUR STAY IN THE HOSPITAL

After surgery, you will feel some pain, but medication will be given to you to make you feel as comfortable as possible. Walking and knee movement are important to your recovery and will begin in a day or two after your operation.

- To avoid lung congestion after surgery, you should breathe deeply and cough frequently to clear your lungs.
- Your Orthopaedic surgeon may prescribe one or more measures to prevent blood clots and decrease leg swelling e.g. elastic stockings.

Foot and ankle movement are encouraged immediately following surgery which increase blood flow in your leg muscles to help prevent leg swelling and blood clots. Most patients begin exercising their knee the day after surgery. A physical therapist will teach you specific exercises to strengthen your leg and restore knee movement to allow walking and other normal daily activities after your surgery.

POSSIBLE COMPLICATIONS AFTER SURGERY

The complication rate following total knee replacement is very low. Serious complications, such as a knee joint infection, occur in less than 0.5 percent of patients.

Preventing Infection The most common causes of infection following total knee replacement surgery are from bacteria (germs) that enter the bloodstream during dental procedures, urinary tract infections, or skin infections. These bacteria can lodge around your knee replacement site and cause an infection.

Blood Clots or thrombosis or DVT in the leg veins is a potential complication of knee replacement surgery. Your Orthopaedic surgeon will outline a prevention program, which may include periodic elevation of your legs, lower leg exercises to increase circulation, support stockings, and medication to thin your blood.

Avoiding Falls A fall during the first few weeks after surgery can damage your new knee and may result in a need for further surgery. Stairs are a particular hazard until your knee is strong and mobile. You should use a cane, crutches, a walker, handrails, or someone to help you until you have improved your balance, flexibility, and strength.

Your surgeon and physiotherapist will help you to decide what aides will be required following surgery and when those aides can safely be discontinued. In the modern age, risk following a major operation is less than the risk involved in traveling on the roads in India.

YOUR RECOVERY AT HOME

The success of your surgery will depend on how well you follow your Orthopaedic surgeon's instructions at home during the first few weeks after surgery.

Note: You will have stitches or staples running along your wound or a suture beneath your skin on the front of your knee. The stitches or staples will be removed two weeks after surgery. A suture beneath your skin will not require removal.

Wound Care Avoid soaking the wound in water until the wound has been thoroughly sealed and dried. A bandage may be placed over the wound to prevent irritation from clothing or support stockings.

Diet Some loss of appetite is common for several weeks after surgery.

A balanced diet, often with an iron supplement, is important to promote proper tissue healing and restore muscle strength.

Activity / Exercise is a critical component of home care, particularly during the first few weeks after surgery. You should be able to resume most normal activities of daily living within three to six weeks following surgery. Some pain during an activity and at night is common for several weeks after surgery.

Your activity program should include:

- A graduated walking program to slowly increase your mobility, initially in your home and later outside.
- Specific exercises several times a day to restore movement and strengthen your knee. You probably will be able to perform the exercises without help, but you may have a physiotherapist to help you at home or in a therapy center the first few weeks after surgery.
- Resuming other normal household activities, such as sitting and standing and walking up and down the stairs.
- Weight control keeps your weight under control, it will also reduce the amount of pressure and stress on your new knee.

HOW YOUR NEW KNEE IS DIFFERENT

You may feel some numbness in the skin around your incision. You also may feel some stiffness, particularly with excessive bending activities. Improvement of knee motion is a goal of total knee replacement, but restoration of full motion is uncommon. The motion of your knee replacement after surgery is predicted by the motion of your knee prior to surgery. Most patients can expect to nearly fully straighten the replaced knee and to bend the knee sufficiently to go up and down the stairs and get in and out of a car. Occasionally, you may feel some soft clicking of the metal and plastic with knee bending or walking. These differences often diminish with time and most patients find these are minor compared to the pain and limited functions of knee joint, they experienced prior to surgery.

Your new knee may activate metal detectors required for security in airports and some buildings. Tell the security agent about your knee replacement if the alarm is activated.

AFTER SURGERY, MAKE SURE YOU ALSO DO THE FOLLOWING:

- Participate in regular light exercise programs to maintain proper strength and mobility of your new knee.
- Take special precautions to avoid falls and injuries.
- Notify your dentist that you had a knee replacement. You should be given antibiotics before all dental surgery for the rest of your life.
- See your Orthopaedic surgeon periodically for a routine follow-up examination and X-rays, usually once a year.

GLOSSARY OF TERMS

Here are definitions of some medical terms related to knee replacement:

Ambulating	:	To walk from place to place, mobile, walking.
Arthroplasty	:	An artificial joint or implant.
Articular Cartilage	:	The smooth lining that covers and protects the bone ends inside a joint.
Osteoarthritis	:	Degenerative disease of the joint in which the cartilage begins to wear away.
Emboli (Pulmonary Embolism)	:	The plugging of pulmonary arteries with fragments of a blood clot after surgery.



WHY YOU SHOULD PREFER TO GET KNEE REPLACEMENT SURGERY DONE AT INDRAPRASTHA APOLLO HOSPITALS?

1. Indraprastha Apollo Hospitals, New Delhi is India's largest Corporate Hospital (a part of Apollo Hospitals Group- Asia's most trusted healthcare provider that owns / manages over 6500 beds across 35 hospitals in India and abroad). The Indraprastha Apollo Hospitals is committed to treating patients with compassion, concern and medical excellence. Over 500 in-patient beds are available in comfortable rooms ranging from General wards, Semi-Private, Single, Deluxe and Suites...meeting needs of all kinds of patients looking for economy and comfort. One attendant can stay with the patient in all categories of rooms/ beds.
2. This world-class hospital is well equipped with the '**state of the art**' technologies and draws the very best medical talent (260 Super specialists) from all over the world and offers services in over 50 super specialties.
3. The hospital's services are supported by sophisticated technology that is made available to improve precision and speed in diagnosis. The hospital has over 19 state-of-the-art operation theatres and over 138 intensive care beds, 24 hour Emergency and Pharmacy services. Operation theaters are equipped with Laminar flow technology resulting in lowest possible infection rates as per world standards.

4. Total knee replacement (TKR) is a successful and proven procedure. Old age is not a constraint for taking up TKR surgery as often it has been done on patients more than 80 years old with good results. Success rates for this operation at Apollo Hospitals are comparable to the best centres in the world. Patients achieve good mobility and implanted joints have documented survival upto 20-25 years in cases of mobile bearing joint replacements.

5. The sophistication levels of the TKR surgery done at Apollo Hospitals in India is at par with the best available anywhere in the world. Our foreign qualified surgeons have worked for many years in advanced countries. More than 3000 joint replacement surgeries have been performed in last three years. We use imported implants of highest international quality. You can get more details from your orthopedic surgeon.

6. The cost of this operation at Apollo Hospitals is a small fraction of the cost of getting this done elsewhere in the world and for this reason a number of foreigners come here to get this surgery done. Indraprastha Apollo Hospitals offers the best terms of facilities and patient care.

7. At Indraprastha Apollo Hospitals, we have an excellent post operative pain management programme which reduces the trauma associated with surgery to the minimum. This enhances the early mobility and recovery of the patient, hence reducing the hospital stay.

8. Indraprastha Apollo Hospital's Department of Physiotherapy and Rehabilitation is one of the best-equipped centers manned by highly skilled personnel. Our goal is to help you return to your maximum potential level of activity.

9. **Indraprastha Apollo Hospitals is recognised by CGHS and ECHS for specific procedures. The knee replacement surgery is done at CGHS approved terms for CGHS and ECHS beneficiaries. Prior approval is required. For assistance please call 51676786.**



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