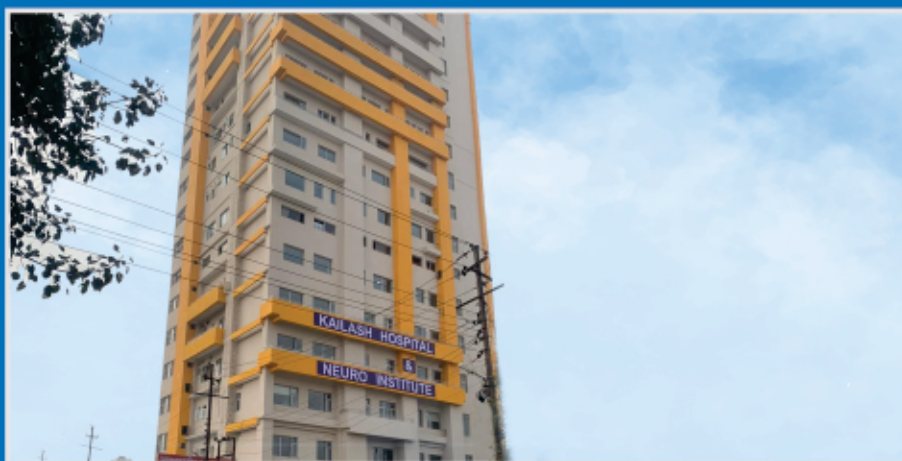




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\*This guide has been distributed free of cost for patient's educational purposes only.

A patient's guide to everything you need to know about

## KNEE REPLACEMENT SURGERY



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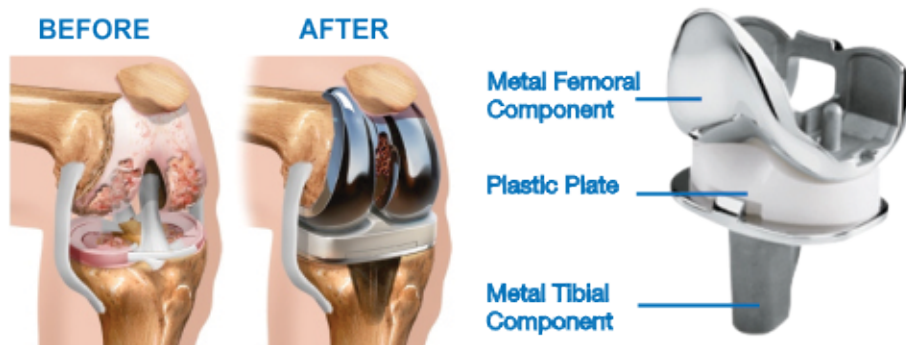


## INTRODUCTION

The knee joint is the largest and the most complex joint of the body. It provides us with support and mobility for movements of our daily living such as walking, sitting, squatting, turning, running, driving etc. Healthy knees are taken for granted without giving any thought about stresses it undergoes for all of us. We are forced to restrict our activities only when the knee becomes painful, stiff or swollen. It is only then we realize how much freedom of movement means to all of us.

Fortunately, today's advanced medical technology makes it possible to replace the knee joint with an artificial one that reduces pain, allows you to strengthen your legs and improves your quality of life.

This booklet provides you and your family information regarding total knee joint operation. It discusses surgical procedure, risks and benefits of surgery, preparation before surgery and post-operative care thereafter.



## WHAT IS A TOTAL KNEE REPLACEMENT?

Total Knee Replacement is an operation in which we do not remove the whole joint, only the damaged surface of thigh bone (femur) and shin bone (tibia) are shaved off. Often, underside of the kneecap (patella) is also removed and these surfaces are replaced with artificial parts. The new joint consists of a metal shell on the end of the femur, a metal plate covered with a plastic trough on the tibia, and if needed, a plastic button on the kneecap. It is an operation where one just resurfaces the damaged knee joint, as is done in capping a damaged tooth.

## WHAT ARE THE TYPES OF TOTAL KNEE REPLACEMENT?

Conventional Total Knee implant allows a person to have good range of motion of knee, however, now High Flex Knees and Unicondylar Knees are also available. High Flex Knee gives full flexion to the patient thereby allowing sitting on the floor. Unicondylar Knees also known as half joint replacement are indicated for very early arthritis and when only one half of the joint is involved. You and your surgeon can discuss the most suitable implant for yourself.

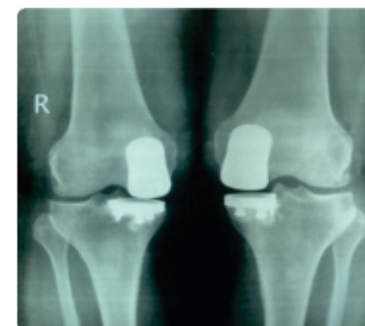
X-ray of Replaced Total Knee



Total Knee Implant



X- ray of Replaced Uni Condylar Knee



Uni Condylar Implant



## ROBOTIC JOINT REPLACEMENT

Robotic arm assisted total knee arthroplasty increases the accuracy and precision by pre-operative 3D planning, which takes into account each patient's specific anatomy. This plan can be virtually modified intraoperatively to address the coronal alignment, soft tissue balancing and FFD. Improved accuracy and precision leads to better functional outcome and increase longevity of implant and lesser revision rates.



ADD PRECISION AND IMPROVES PATIENT SATISFACTION

## WHO NEEDS A TOTAL KNEE REPLACEMENT?

Total Knee Replacement surgery is an elective procedure. Your doctor has more than likely treated your condition with physiotherapy, pain medicines, anti-inflammatory drugs, and injections in the knee. You may have also had minor surgeries of your joint in the past.

## You would be considered for total knee replacement if:

- you have daily pain
- your pain is severe enough to restrict not only work and recreations but also the ordinary activities of daily living
- you have significant stiffness of your knee
- you have significant instability (constant giving way) of your knee
- you have significant deformity (knock knees or bow legs) causing pain and inability to walk

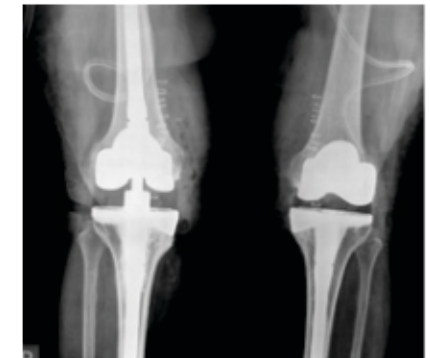
You and your doctor are probably the best judge of when you will finally need total knee replacement surgery.

## SOME COMMON DEFORMITIES

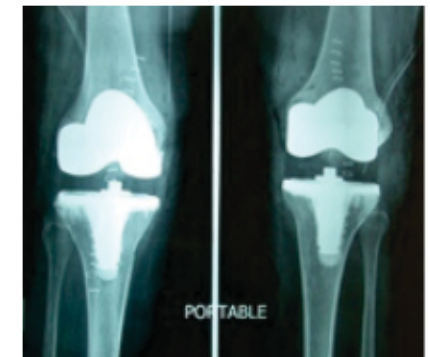
### Before Surgery

### After Surgery

#### 1. Bow Legs (varus)

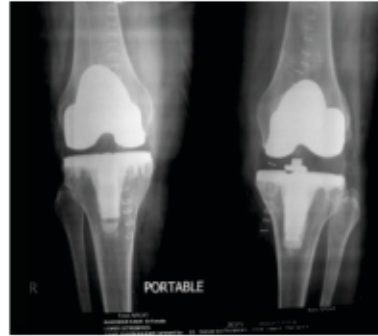


#### 2. Knock Knees (valgus)





### 3. Wind Swept Legs



### CAN I CONTINUE WITH ALL THESE DIASBILITIES?

Yes you can, but your unstable joints may cause a fall and you may have fractures around the knees and the hips because of osteoporotic bones. Regular consumption of analgesics and anti-inflammatory drugs may damage your kidneys and cause ulcers in your stomach.

### IS THERE ANY AGE CONSIDERATION FOR KNEE REPLACEMENT?

Although knee joint replacement is recommended in older age group, it can be considered in younger patients who are severely crippled due to rheumatoid arthritis or post traumatic osteoarthritis of knees. As such, age is no bar to this operation.

### WHAT ARE THE BENEFITS OF KNEE JOINT REPLACEMENT?

Once your new joint has completely healed, you will reap the benefits of the surgery.

These include:

- Reduced joint pain dramatically (may be no pain)
- Increased movement and mobility
- Correction of deformity
- Improved quality of life - the ability to return to normal activities
- Running, jumping, jogging or other high impact activities are discouraged. However, you can resume playing golf, walking, bicycling, swimming and other low impact sports

### Full knee movement after surgery



### Can also cycle after surgery



### Can sit cross legged after surgery



### Can walk comfortably without support



### HOW LONG DO ARTIFICIAL KNEES LAST?

Surgeons and manufacturers have made remarkable advances in joint replacement technology over the last few years. The materials are long lasting and durable. The surgical methods have been fine tuned and standardized. As a result, the chances for a successful outcome are excellent.

The operation will provide pain relief for at least 15-20 years. The major long term problem is loosening of the prosthesis. This occurs because either the cement crumbles (as old mortar in a brick building) or the bone loosens away (resorbs) from the cement. By 15 years, 25% of total knee replacements may look loose on X-ray, and about 10% will be painful and require reoperation. By 20 years possibly 20% may require re-operation.

These complications are more likely in very obese or hyper active people and really depends upon how careful you are about your artificial knee joint.

## CAN BOTH KNEES BE REPLACED AT THE SAME TIME?

If both knees are damaged, both can be replaced in the same sitting. It means one time anaesthesia, one time hospital stay, one time medicines and one time physical therapy. It means saving the cost too. Your doctor can advise you for the need of replacing both the knees simultaneously.

## HOW SHOULD I PREPARE FOR TOTAL KNEE REPLACEMENT?

Following are the essential steps that will help you get into shape before knee replacement surgery:

**Commit to the success of your surgery:** Working as a team you and your family must adopt a positive attitude towards the success of your surgery. Together with your doctor you will gain a clear understanding of the common goals and expectations of the surgery.

**Lose 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. Your doctor's approval : Before surgery we would like to make sure that your condition is well enough to undergo this operation and also to exclude certain conditions such as 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. Routinely blood transfusion is not necessary after Single Total Knee 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 knees need replacement in the same sitting, then up to 2-3 units of blood may be required depending on your hemoglobin levels.

## CAN YOU EXPLAIN ABOUT THE EVENTS OF MY STAY IN HOSPITAL?

When you have made up your mind for knee replacement surgery, you will be admitted a day before surgery. Your surgeon anaesthetist, physician and physiotherapist will do a complete medical evaluation. X-ray images will be taken of your knees that help the surgeon plan your surgery. Chest X-rays, ECG, blood and urine test will be done prior to surgery to ensure that you are fit for surgery.

You will be required to scrub the surgical area with soap and water a night before and on the day of surgery, after which your leg will be covered with a sterile drape. You will be transported to the operating room in the morning.

You may have General Anaesthesia or Spinal Anaesthesia with sedation. The duration of surgery for one knee is about 1 hours. Your doctors will talk to your family after the surgery to report your progress.

You will be kept in recovery room for a few hours and then transferred to the room or in some cases to ICU for the monitoring of vital parameters.

The whole limb will be covered with a bandage. After 3-6 hours depending upon the type of anaesthesia given at the time of surgery, you will start with normal diet.

Next morning, you will be transferred to the room and physical therapy usually begins with most of the patients. On 3rd day your dressing will be changed. In some cases a knee immobilizer will be worn. Walking with support & independently using the toilet will be started from 2nd day onwards.

## REHABILITATION AND EXERCISE

The initial rehabilitation generally takes 5-7 days during your hospital stay. It is needed for your weak leg and thigh muscles which have not been used because of your knee problem. The surgery can correct the knee problem, but the muscles will remain weak and need to be strengthened through regular exercises. The therapist also focuses on helping to increase the range of motion of knee with bending exercises. Physical therapist along with you will work until you meet the following goals:

- Independence in getting in and out of bed
- Independence in walking with walker on a level surface
- Independence in your home exercise program

Your doctor and therapist may modify these goals somewhat to fit your particular condition. If there are no complications after surgery, most patients stay in our hospital approximately for 1 week or less.

## CAN I SIT CROSS LEG OR SQUAT AFTER KNEE REPLACEMENT?

After a conventional implant for Total Knee Replacement, a person can typically walk comfortably and his knee joint will have a good range of motion. However, sitting cross-legged and squatting is not advised. If a person opts for a Hi-Flex knee implant, the range of motion of the knee is better allowing him to sit cross-legged. We would generally suggest that you do not squat as it is based on individual muscle strength and fitness level. Your doctor will advise you on the activities that you will be able to do comfortably.



After Conventional Total Knee Replacement



After HI-Flex Total Knee Replacement



## WHAT HAPPENS AFTER I GO HOME?

### Medication:

You will continue to take medicines as prescribed by your doctor.

### Care of the wound:

Keep the incision clean and dry. If there is any swelling, redness or drainage from the incision site, or if you have any pain or fever, report this immediately to your doctor. The stitches are removed at about two weeks after the operation.

### What to expect during your recovery

After surgery, it may take a while before you feel like your normal self. Recovery is different for each person. The following are a few things that you may have after surgery and some ways to manage these feelings.

### Recovering at home

You may feel extremely tired at first and the muscles and tissues surrounding your new knee will take time to heal.

The exercises your physiotherapist gives you are an important part of your recovery. It's essential you continue with them once you're at home.

Your rehabilitation will be monitored by a physiotherapist.

### How long will it be before I feel normal?

You should be able to stop using your crutches or walking frame and resume normal leisure activities 6 weeks after surgery. However, **it may take up to 3 months for pain and swelling to settle down. It can take up to a year for any leg swelling to disappear.**

**Your new knee will continue to recover for up to 2 years after your operation.**

During this time, scar tissue will heal and muscles can be restored by exercise.

### When can I drive again?

You can resume driving when you can bend your knee enough to get in and out of a car and control the car properly. This is usually around 6 to 8 weeks after your surgery.

### When can I go back to work?

This depends on your job, but you can usually return to work 6 to 12 weeks after your operation.

### When can I do housework?

For the first 3 months, you should be able to manage light chores, such as cooking, dusting and washing up. Avoid heavy tasks. Do not stand for long periods as this may cause ankle swelling and avoid stretching up or bending down for the first 6 weeks.

### How will it affect my sex life?

Your surgeon can advise when you can have sex again. As long as you're careful, it should be fine after 6 to 8 weeks. Avoid vigorous sex and kneeling positions.

### Looking after your new knee

- Continue to take any prescribed painkillers or anti-inflammatories to help manage any pain and swelling
- Use your walking aids but aim to gradually decrease the amount you rely on them as your leg feels stronger
- Keep up your exercises to help prevent stiffness, but do not force your knee do not sit with your legs crossed for the first 6 weeks after your operation
- Do not put a pillow underneath your knee when sleeping as this can result in a permanently bent knee
- Avoid twisting at your knee
- Wear supportive shoes outdoors
- Do not kneel on your operated knee
- Raise your leg when sitting and apply an ice pack (or a bag of frozen peas) wrapped in a tea towel for 20 minutes every 3 or 4 hours to reduce any swelling
  - You may not have much of an appetite.
- Your desire for food will slowly return.
- Be sure to drink plenty of liquids to stay hydrated. Try to drink six to eight 8-ounce glasses of liquids each day.
- You may have constipation. This can be caused by taking pain medicine. Learn more about how to manage constipation after surgery.

## WHEN DO I COME FOR CHECK UP?

Your first return appointment will be 3 weeks after the date of surgery for removal of stitches. Second appointment will be after 1 month, at which time you will be examined and have X-rays done. Subsequent appointments will be given based on your progress.

## HOW DO I TAKE CARE OF MY KNEES AFTER THE OPERATION?

Your knee replacement should give you years of service. You can protect it by taking a few simple steps:

**Watch for and prevent infection:** Because your new knee is sensitive to infection, you must be diligent about preventing infection. If you suspect infection of any kind, contact your doctor right away.

**Follow-up care:** Your regular follow-up visits will ensure the long term success of your operation. Often, follow-up X-rays will confirm proper placement and alignment of the artificial joint.

**Weight control:** Keeping your weight under control. This will reduce the amount of pressure and stress on your new knee. Avoid high impact sports and participate regularly in low impact activities to strengthen your new knees and get the exercise you need to stay fit.

Do not attempt to squat or sit cross legged after conventional knee replacement.

### SHOULD I HAVE A TOTAL KNEE REPLACEMENT?

Total Knee Replacement is an elective operation. The decision to have the operation is yours. The surgeon may recommend the operation, but your decision must be based upon you weighing the benefits of the operation against the risks. All your questions should have been answered before you decide to have the operation.

### WHAT WE OFFER

- Robotic Joint Replacement
- Joint replacement of Knee, Hip and Shoulder
- Arthroscopic surgery of knee and shoulder
- Complex pelvi-acetabular 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

### JOINT REPLACEMENT TEAM



Dr. Anuj Jain is a well-known Orthopaedic and joint replacement surgeon practicing in Delhi / NCR. He has vast experience (more than 13 years) in Orthopaedics, especially joint replacement, sports medicine and complex trauma. Currently he is heading Orthopaedic unit in Parmanand Hospital, Delhi & Kailash Hospital, Noida. He did his U.G. (MBBS) from prestigious Maulana Azad Medical College (MAMC, Delhi). He attained Rank 1 in All India UPSC exam. He did his P.G.(MS) and senior registrarship from University College of Medical Sciences (UCMS, Delhi). He further did DNB in Orthopaedics and was awarded "Balushankaran National Gold Medal" for the same. He is recipient of prestigious "Robert Roaf Fellowship" by Indian Orthopaedic Association. He represented Indian Orthopaedic fraternity in Singapore as an "Ambassador" from India. He has done more than 2000 knee replacement and more than 500 hip replacement surgeries with excellent results. He is invited as faculty at various trauma and joint replacement conferences nationally and internationally. He has more than 30 indexed peer reviewed international publication and many book chapters to his name. He is also author of a text book "Primary Knee Arthroplasty- A Ready Reckoner" which is read by surgeons all across the world aspiring to be joint replacement surgeon.



Dr. Deepankar Verma is renowned Orthopaedic and joint replacement surgeon practicing in Delhi NCR with more than a decade of experience. He holds prestigious fellowship in joint replacement and sports medicine in Delhi Institute of Trauma and Orthopaedics and Arthroplasty fellowship from Germany. He has also completed fellowships in complex trauma at AIIMS Delhi and Trishur. He has 3 years of teaching experience as senior resident in GTB hospital & UCMS Delhi. He was Assistant Professor in Dept.

of Orthopaedics, Maulana Azad Medical College and associated Lok Nayak Hospital, Delhi. He has worked as Incharge Sushruta Trauma centre (Civil lines, Delhi). He has numerous publications in reputed journals at both National and International levels. He has presented multiple papers and posters at various esteemed orthopaedic forums and received the prestigious Bhagwan Prasad Gold medal for the best paper publication. He is currently working as Consultant Orthopaedic and Joint Replacement surgeon at Sant Parmanand Hospital Delhi and Kailash Hospital and Neuro Institute Noida.