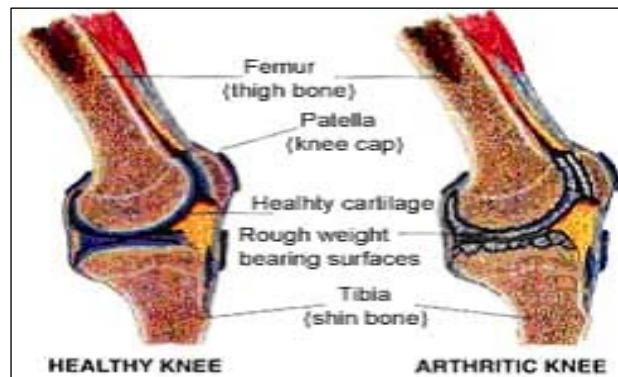


INTRODUCTION

The knee joint is the largest and the most complex joint of the body. It provides us support and mobility for movements of our daily living like 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 it becomes painful, stiff or swollen. It is only then we realize how much freedom of movements means to all of us.

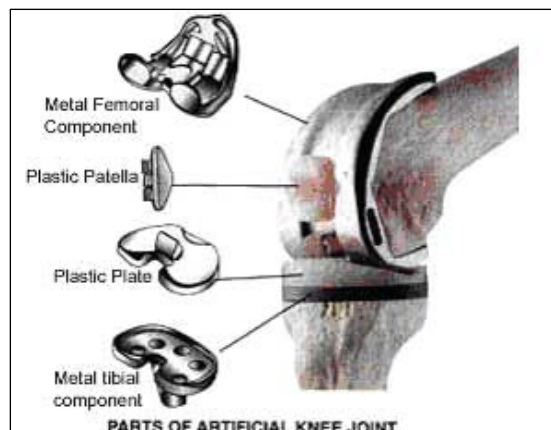
Fortunately, today's advanced medical technology makes it possible to replace the knee joint with artificial one that reduces pain, allows you to strengthen your legs and improves your quality of life.

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 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

Besides conventional Total Knee implant, 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 Uni Condylar Knee



Uni Condylar Implant



X-ray of Replaced Total Knee



Knee Implant

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 injection in the knee or may be with minor surgeries. The circumstances vary somewhat, but generally 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 beside your doctor are probably the best judge of when you will finally need total knee replacement surgery.

Some Common Deformities

Bow Legs (Varus)



Before Surgery



After Surgery

Knock Knees (Valgus)



Before Surgery



After Surgery

Wind Swept Legs



Before Surgery



After Surgery

CAN I CONTINUE WITH ALL THESE DISABILITIES ?

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 antiinflammatory drugs may damage your kidneys and cause ulcers in your stomach.

IS THERE ANY AGE CONSIDERATION FOR KNEE REPLACEMENT SURGERY?

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:

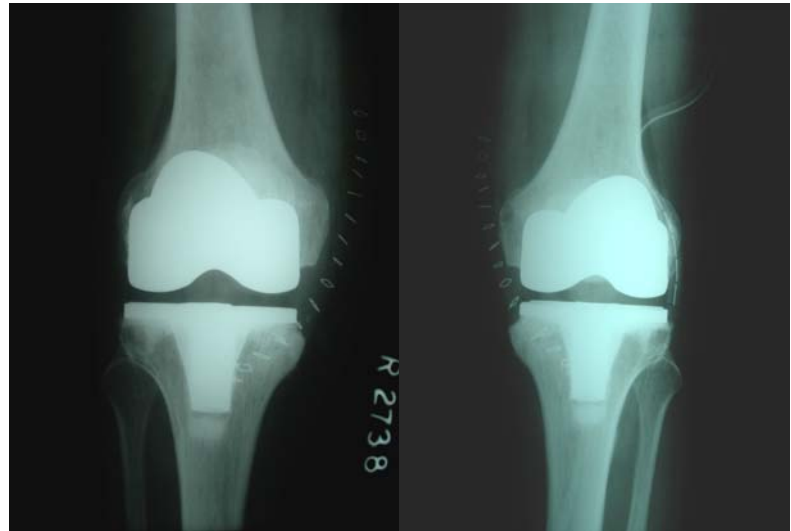
- Reduced joint pain dramatically (may be no pain)

- Increased movement and mobility

- Correction of deformity

- Improved quality of life: ability to return to normal activities

- Running, jumping, jogging or other high impact activities are discouraged. But you can resume playing golf, walking, bicycling, swimming and other low impact sports.



Patient after Knee Replacement Surgery



WHAT ARE THE RISKS OF TOTAL KNEE REPLACEMENT SURGERY?

As with any major surgery, there are potential risks involved in total knee replacement surgery. The most common complications are not directly related to the knee and usually do not affect the result of the operation. These complications include urinary tract infection, blood clots in legs or blood clots in lungs.

Complications affecting the knee are less common, and in these cases the operation may not be as successful. These complications include:

- Some knee pain
- Loosening of the prosthesis
- Stiffness
- Infection in the knee

A few complications such as infection, loosening of prosthesis and stiffness may require re-operation, if they do not respond to antibiotics, splintage or physiotherapy.

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 10-15 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 10 years, 25% of total knee replacements may look loose on X-ray, and about 10% will be painful and require reoperation. By 15 years possibly 20% may require re-operation.

These complications are more likely in very obese people and very active persons and depend upon how careful you are about your artificial joint.

WHAT IS THE TOTAL COST OF THIS SURGERY?

The cost of total knee replacement surgery (one knee) is about* 2.0 lakh Rupees in single room category and 1.75 Lakh Rupees in double room for Conventional Total Knee Implant. It includes the cost of implant (Rs.78,000/-) hospital stay (6-8 days), surgeon and anaesthetist charges, operation theatre charges, consumables etc. Routine investigations are included as well. However, in cases, where the stay may be longer for any reason, the charges may be little more. The cost of High Flex Implant is approximately 25,000/- more while the cost of Unicondylar knee is approx. 20,000/- less than Conventional Total Knee. The cost of both knees replaced at the same time is about 3.5 lakh in a single room category.

* Subject to change. (Please check the prevailing package with your surgeon)

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 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.

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 upto 2-3 units of blood may be required depending on your haemoglobin 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 and 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 2 hours. Your doctors will talk to your family after the surgery to report your progress. You will be kept in recovery room for few hours and then transferred to the room or in some cases to ICU for the monitoring of vital parameters.

You will have drainage tubes at the operative site and the whole limb will be covered with a large 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 1st post-operative day we will remove the drainage tubes *while on 3rd day your dressing will be changed. In some cases a knee immobilizer will be worn. Walking with support & toilet training will be started from 2nd day onwards.*

Rehabilitation and Exercises: 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 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 programme

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 ?

It is not advised to sit on floor after conventional Total Knee Replacement . However, It is possible to sit cross leg or squat after High Flex Total Knee Replacement Surgery. It is important to realize that ability to squat does not only depends on the implant or the surgeon. To a large extent it depends on individual patients muscle strength.

After Bilateral High Flex Knee Replacement



WHAT HAPPENS AFTER I GO HOME?

Medication:

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

Activity:

Continue to walk with crutches / walker

Bear weight and walk on the leg as much as is comfortable

Walking is one of the better kinds of physical therapy and is good for muscle strengthening

The success of the operation depends to a great extent on how well you do the exercises and strengthen the muscles.

Continue to wear your knee immobilizer as instructed

Our ultimate aim is that you should be able to bend your knee to at least 90⁰ (usually more) and be able to strengthen your knee.

Within six weeks after surgery, most patients are able to walk with a cane.

Other considerations:

Do not wet the knee until after the stitches are removed

You can usually return to work within 2-3 months or as instructed by your doctor.

You should not drive a car until after the 3 months follow-up appointment.

Care of the wound:

Keep the incision clean and dry. If there is any swelling, increase in pain, drainage from incision site, redness around the incision or fever, report this immediately to your doctor. The stitches are removed at about 2 weeks after the operation.

WHEN DO I COME FOR CHECK UP?

Your first return appointment will be 2 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 are at 3 months, 6 months and at 1 year. You should return for check up every year thereafter.

HOW DO I TAKE CARE OF MY KNEES AFTER 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. If you still have any queries, please do not hesitate to contact us at Delhi Institute of Trauma & Orthopaedics, Sant Parmanand Hospital, 18 Sham Nath Marg, Civil Lines, Delhi – 110 054.

Ph: 23981260 (5 lines), 23994401-10 / Ext. 408, 411

We are committed to work with you. We wish you a successful operation.

UNIT FOR JOINT REPLACEMENT SURGERY

DR. SHEKHAR AGARWAL

M.S. Orth. MCh. Orth. (Liverpool) F.I.C.S
Director & Senior Consultant Orthopedic Surgeon

DR. VIVEK MITTAL

M.S. Orth., Ranawat Fellow (USA), ASIF Fellow (Austria)
Senior Consultant Orthopedic Surgeon

Please also log on to our website : www.sphdelhi.org

COMMENTS FROM SOME OPERATED PATIENTS

Dr. P.C. Alexander (M.P.) , 72 Years

My wife had replacement of both the knees in the hospital. I am very happy that she received the very best treatment one could have expected to receive in Delhi. I wish to record my thanks to everyone here.

CR Das, 78 Years

You and your institution have been instrumental in changing the quality of my wife's life and have brought cheer to our companionship. May Mother shower Her choicest blessings upon you and your family. May you reach your goals sooner than desired.

BR Maheshwari, 77 Years

Total Knee Replacement has been a gratifying surgery for me. My pain has disappeared, my knee is straight and once again I am more active in my life. I am extremely happy with the treatment I received at Sant Parmanand Hospital.