

Say hello to life...

High Precision | High Performance
Computer Assisted | Joint Replacement Surgeries



Jehangir **Joint Replacement** Surgery Centre

KNEE REPLACEMENT AT JEHANGIR HOSPITAL

Jehangir Hospital has one of the finest orthopaedic teams in Pune. We also have expertise in minimally invasive techniques, which enables shorter hospitalization. Multi-speciality approach is used to diagnose the plan the ideal treatment option in all orthopaedic cases. We have extensive experience in knee and hip resurfacing procedures with our success rates that match the best in the world.

What causes the knee joint to degenerate?

Any condition affecting the knee that causes damage to the normally smooth lining cartilage of the knee may eventually end up with the same result. The protective cartilage lining the joint gets worn away, producing increasing damage to the bone surfaces inside the joint. This may cause pain, swelling and stiffness, as the exposed bone ends grind painfully against each other.

Age related wear is the commonest cause of degenerative osteoarthritis

for which individuals need to undergo knee replacement surgery. The smooth cartilage lining inside of the joint wears away. This results in a narrowing of the joint space and this leads to the bone coming directly in contact with bone, which will be painful. Bone spurs (small bone growths) form around the joint and all of these changes ultimately lead to increasing pain and stiffness of the joint.

Rheumatoid Arthritis, an inflammation of the tissue surrounding the joints, can cause deterioration of cartilage and other parts of the joint and result in the need for knee joint replacement.

Post-traumatic Arthritis, a type of arthritis that can arise following an injury to the joint cartilage or through damage to the ligaments leading to an unstable knee.

Malalignment of the Knee Joint - Knock-knees or Bowlegs, results from an excessive angle where the upper and lower leg bones meet at the knee joint. The result is abnormally high stress on either the outer or inner half of the joint.

Who needs to undergo a Knee Replacement?



Total Knee Replacement is the final remedy for the end stage of arthritis when pain, deformity, instability of the joint leads to considerable difficulty in movements. Replacement surgery is done when all other simple remedial measures to relieve the pain have failed. Before zeroing in on the surgical option, the severity of the damage is assessed through X-rays.

What are the options in the treatment of painful Arthritic Knee?

In the early stages of the disease, the following treatment methods are tried:

- Medication for pain
- Medication that stimulate the formation of joint cartilage
- Intra-articular injections (viscous supplements)

- Arthroscopy procedure to correct minimal changes inside joints
- Corrective Osteotomy - When there is a deformity in the leg (bowlegs, knock-knees etc.), it should be corrected at the earliest so that the development of arthritis is prevented or delayed
- Bracing, physical therapy, lifestyle modification

Experience in knee replacements in the last three decades has now led to considerable changes and advancement in the way knee replacements are performed. There are newer designs and materials which allow better longevity and increased range of movements.

The new technologies in today's knee replacements surgery include:

- **Computer-assisted surgeries:** This helps in higher precision in the placement of the components.



- **High- flex designs:** These prosthetic designs help in accommodating deeper flexion which is useful in our daily activities like climbing steps, low seating etc. This is feasible in people who have a near normal range before surgery
- **Minimal incision knee surgeries:** This minimal access surgery can be offered for some patients who fulfill certain criteria. This procedure helps in lesser trauma to the muscles
- **Modern pain management protocols:** For early rehabilitation, comfort and recovery



However running, jumping, jogging or other high impact activities are to be avoided.



What are the benefits of Knee Joint Replacement?

Once your new joint has completely healed, you will notice:

- Dramatic reduction in joint pain (may be even no pain)
- Ease of movement and increased mobility
- Improved quality of life
- Ability to return to normal activities

You can resume golf, dancing, walking, hiking, bicycling, swimming and other low impact sports.

Very importantly, most knee replacements today are performed using minimally invasive techniques, which means smaller incisions, and more importantly, less soft-tissue dissection. In addition to this, most surgeons also use the computer-assisted surgery (CAS), which helps them align the artificial joint in the bone and may increase the long-term effectiveness of knee replacements, especially in difficult cases such as those involving knock-knees or bowlegs.

What are the risks involved in a 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 include:

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

These may require re-operation, if they do not respond to antibiotics, splintage or physiotherapy.

How long do Artificial Knees last?

There have been remarkable advances in joint replacement technology over the last few years. The materials and the methods have been perfected to high levels and 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 melts away (resorbs) from the cement. After 15 years, 20% of knees may require revision.

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How should I prepare for Knee Replacement Surgery?

- **Commit to the success of your surgery:** Working as a team, you, your doctor and your family must adopt a positive attitude towards the success of your 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
- 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



What happens in the hospital during my stay?

You will be admitted a day before surgery. Your surgeon, anesthetist, physician and physiotherapist will do a complete medical evaluation. Chest X-ray, ECG, bloody and urine test will be done prior to surgery to ensure that you are fit for surgery. X-ray

images will be taken of your knees to help plan your surgery. After you are transported to the operating room, you will be given Spinal Anesthesia with sedation.

The knee is flexed about 90 degrees and the lower portion of the leg, including the foot, is placed in a

special device to securely hold it in place during the surgery and an incision is then made to expose the bone surfaces.

The damaged bone surfaces and cartilage are then removed. Precision instruments and guides are used to help make sure the cuts are made at the correct angles so the bones will align properly after the new surfaces (implants) are attached. Small amounts of the bone surface are removed from the front, end and back of the femur. This shapes the bone the implants will fit properly. This amount of bone that is removed depends on the amount of bone that has been damaged by the arthritis.

An implant is attached to each of the bones. These implants are designed so that the knee joint will move in a way that is similar to the way the joint moved when it was healthy. The implants are attached using a special kind of cement for bones.

The duration of surgery for one knee is about 2 hours. 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 anesthesia 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 the second postoperative day the drainage tubes are removed and in some cases a knee immobiliser may be fixed.

REHABILITATION AND EXERCISES

The initial rehabilitation generally takes 5-7 days during your hospital stay. Your leg muscles will be probably weak because you have not used them much due to your knee problems.

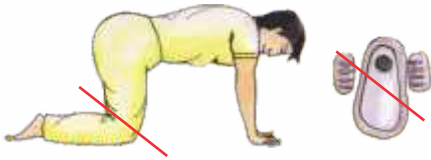


The surgery can correct the knee problem, but the muscles will remain weak and will be strengthened only through regular exercise. The therapist focuses on helping to increase the knee's range of motion with bending exercise. You will work with physical therapist until you are able to independently perform:

- Getting in and out of bed
- Walking with a walker on a level surface
- Walking up and down few stairs
- Home exercise programme

What should I not do after Knee Replacement?

- Squatting
- Use of Indian type toilet
- Kneeling down



What happens after I go home?

Medication:

You will continue to take medicines as prescribed by your doctor which may be minimal.

Activity:

- Continue to walk with crutches/

walker till you feel comfortable to walk independently (for 15-20 days)

- 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 do you do the exercises and strengthen the muscles
- Continue to wear your knee immobilizer as instructed
- The ultimate aim is to add strength to your knee and also that you should be able to bend it atleast 90-degree at the end of one week. Within six weeks after surgery, most patients are able to walk independently

Other considerations:

- Do not wet the knee until after the stitches are removed
- You can usually return to work within 3-4 months or as instructed by your doctor

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 is noticed, report this immediately to your doctor. The stitches are removed in 10-15 days after the operation.

When do I come for checkup?

Your first return appointment will be 10 days after the date of surgery for removal of stitches.



Second appointment will be after 6 weeks, 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, notify 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 will reduce the amount of pressure and stress on your new knee
- **Do not attempt to squat or sit cross-legged** (unless you have done a maximum mobility knee replacement)
- **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

PHYSIOTHERAPY SERVICES

Highly skilled physiotherapy services to help early recovery and rehabilitation.

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