

## **Basic information leaflet about total knee replacement.**

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**Introduction:** The terminology of arthroplasty /joint replacement is nowadays becoming increasingly familiar in the Indian household by media, advertisement as well as through word of mouth by various patients. However there is still not clear idea in the mindset of common man and women that what actually it is, when it is done, how are the results and cost associated with the procedure. Therefore there is still immense apprehension about it and people are heavily reluctant to undergo these procedure if advised by doctors. The purpose of this writing is to elaborate in simple understandable terms the basic facts in relation to arthroplasty of various joints. It is expected that on reading this article common people, health care workers will have some basic understanding of arthroplasty as treatment of various forms of arthritic conditions of joints and the fears or misconceptions associated with this form of treatment will be largely alleviated.

**What is arthroplasty:** The term arthroplasty literally means changing/replacing the damaged surface of joints. Normally in any joint two smooth surface play against each other during movement and there is a bit of natural lubricant which facilitates the movement. Now if due to whatsoever reason any of the surfaces becomes rough or irregular the smooth movement can't take place between the two. During arthroplasty operation either or both damaged surfaces of the joints are removed and they are substituted with artificial surface which is highly polished and smooth so that there is hardly any friction between them during movement. The situation can be compared with a damaged insole of a shoe which is painful as it does not fit with the contour of the feet, as we take it to the cobbler, quite often they just take the damaged insole out and fit a new one and the shoe can be used again for sometimes. The substances used to replace the damaged joint surface are called IMPLANTS or ENDOPROTHESIS. Normally these implants are made of mixture of various metals so that they are exceptionally strong and durable, it can withstand repeated movement without being fatigued for decades. These implants are fixed to the bone with cement or various other fixation techniques during the operation. There are small nerve fibres just below the joint surfaces which are irritated as the surface is damaged and the joint becomes painful, in arthroplasty the damaged joint surface is replaced with polished metals which play against each other, the nerve endings are not irritated and the pain stops immediately, this is the essence of arthroplasty for any damaged joint.



**Figure 1: X-ray of a normal knee joint with good gap between the bones**



**Figure 2: X-ray of damaged/arthritis knee joint with no gap between the bones.**

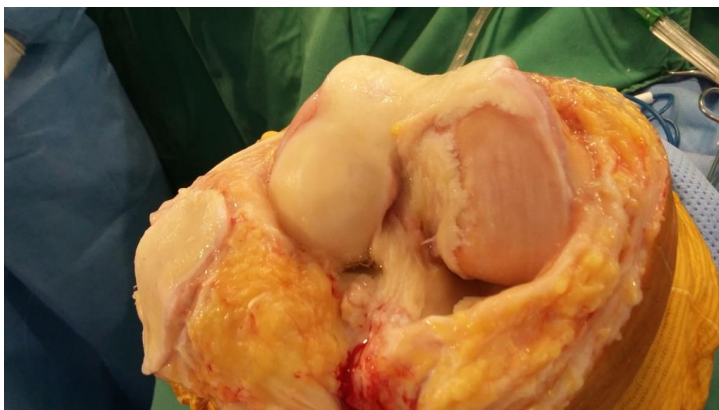
It is easy to understand the gradual damage by wear and tear to the cartilage of bone surface if we consider a fresh cut coconut and the way it becomes after crating it for sometime.



**Figure 3: Smooth surface of the coconut and after crating it for sometime. This is exactly how the cartilage fragments separate due to wear and tear over years as a part of aging process.**



**Figure 4: Pictures of interior of normal knee with smooth white cartilage on bone surfaces.**



**Figure 5: Pictures of interior of damaged knee with loss of cartilage from the bone surfaces.**



**Figure 6: Picture of knee implants used during surgery.**



**Figure 7: X-rays after total knee replacement.**

**When is arthroplasty indicated ?** In the present day medical scenario arthroplasty is considered to be the last and final treatment of any arthritic condition when all medicinal or non surgical treatment is not producing durable and good result.

Normally any patient with arthritic condition when first consults a doctor or orthopaedics surgeon a combination of medicines and exercises or physiotherapy is recommended. In majority of cases the pain improves and the mobility becomes better. However with passage of time the medicines become ineffective and the patient might be having too much of pain to do exercise or physiotherapy. As a result he/she starts gaining weight, the joint becomes more and more stiff and the person becomes home bound. Sometimes at this point one or two injections inside the joint

(not as painful as thought off) produces symptom relief for short duration. **At this point Arthroplasty is recommended.**

Medicines can't be taken for too long as they do not work after some time - this is called "tolerance" and happens with almost every type of medicine. Along with that most of the medicines have side effects to various organs of the body and so should be avoided after sometime. Injections work once or twice and at its best will work for 6 months. It is impractical to ask somebody to have injections every 6 months. Therefore at this point the decision is taken for surgical treatment so that the person get rid of pain and can continue with his/her normal lifestyle without taking medicine.

**Which joint conditions can be treated by arthroplasty?** Almost all arthritic conditions of any joint can be treated by arthroplasty. The common ones are osteoarthritis and rheumatoid arthritis of knee, hip and shoulder. Elbow, ankle and small finger joints can also be treated although they are more specialised procedures. Other than this damaged joints due to injury, instability, congenital deformity or completely stiff joints can also be treated by arthroplasty or joint replacement.



**Figure 8: A deformed knee due to arthritis**



**Figure 9: The knees become straight after simultaneous replacement surgery.**



**Figure 10: X-rays of the above knee after bilateral total knee replacement surgery in the same sitting.**

**How should I prepare myself for arthroplasty operation?** In majority of situation the surgeon will have some set rules and precautions to be followed before and after the operation. But in general you should eat a balanced diet and drink adequate fluids while gearing up for the surgery. Supplements of iron and vitamins are prescribed if your blood contains less haemoglobin (the substance in blood that carries oxygen). You should sleep well for few days prior to the surgery otherwise the body and mind remains weak and tired - sleeping pills can be taken as prescribed by surgeons. You must inform the doctor if you are taking some medicines on daily basis for diabetes or high blood pressure as some of the medicines need to be changed or stopped prior to the surgery. Many surgeons prescribe some set exercises for various joints so that the body remains comfortable and recovery after the operation is faster.

In general some blood tests and other tests to check your heart, lung will be done about 10-15 days prior to the surgery and these reports are seen by the anaesthetist (the doctor who puts you into sleep) and if any condition is noted which might be harmful for you, generally the surgery is postponed till that condition is appropriately treated.

**How long I need to stay in the hospital?** It varies on various factors like which joint is operated - with shoulder and elbow replacements people are able to walk out of the hospital by 3-4 days, whereas for hips and knees it takes about 5 days. Elderly patients normally takes a bit longer than younger ones. By and large you can consider a week's stay in the hospital.

**A few comments about the operative day:**

- Normally you will be anaesthetised for the operation. For upper limb joints you need a full anaesthesia and for lower limbs just the lower half of the body is anaesthetised.
- In general similar operations take about 2 hours, but considering time of anaesthesia and recovery from it, you will be back to your hospital bed in about 4 hours time.
- Generally there will be bandages on the operated area and you will have some channels in your hands for saline infusion. Oxygen will be given for 24 hours by face mask.

- Although there is some amount of pain, in general with various techniques it is never intolerable and most of the patients are fairly comfortable next morning.
- You might require blood transfusion on the same or next day of operation.

**How is the recovery after the operation/How much rest do I need after the operation?** Generally surgeons take some x-rays on the next day of the operation to see if it has been done correctly, then the patients are taken through their mobility pattern by the physiotherapist in the hospital under the guidance of the surgeon. There is a concept in the community about "long periods of bed rest" while recovering from surgery, this is completely ill founded as the operation is done to improve movement and that starts pretty straightaway unless the patient is sick for other reasons.

The pain improves every day and more you move the joint quicker the pain is relieved. Most of the patients require oral pain killer for 10-15 days after being discharged from hospital. Stitches are removed at the same time period.

In general people with arthroplasty of lower limbs are able to walk back home in ordinary car (there is no need of ambulance), they are even able to do their activities of daily living like brushing teeth, putting on clothes, going up and down the stairs or walking around the home independently without much support. However exercises should continue daily as per the doctor's advice. Ice pack on the operated area produces significant relief particularly after the exercises. Most people are able to walk around in their locality by about 2-3 weeks. Journey to outstations are permissible by 6-8 weeks. People continue to improve symptomatically for about 9-12 months and the situation at that point is for the lifetime.

For arthroplasty of upper limbs the situation is more or less same, the affected limb is allowed to use with some restrictions for 2-3 weeks following which controlled progressive movement with the physiotherapist is recommended. Overhead activities are the last to be performed. More or less by 3 months the persons is having reasonable function in the operated limb and that continues to improve for about 9-12 months.

The bottom line remains "there is no place of bed rest following an arthroplasty operation"

**What are the risks associated with the procedure?** There are risks and complications associated with any operation. But that is unavoidable anywhere in the world. However with adequate precautions taken the chances of having complications is about 1-2%.

The most fearful complication is infection and that is a nightmare for the surgeon as well. To prevent that we operate in a very clean atmosphere where the air is allowed to pass through a filter so that organisms are trapped, we give antibiotics for 24 hours and do not touch the wound unless necessary. For other complications like blood clotting in the leg - we give some medicines to thin the blood for 4 weeks, to prevent dislocation of prosthesis we advice not to sit on floor etc.

Refraining from the operation when necessary in fear of complications will be like someone thirsty but refusing to drink water in fear of choking.

**What happens if I don't do the operation even if the doctor says so?** Many people does this thing, they roam around various places to see different doctors in search of a relief, but that never happens because when there is sufficient damage to the joint there is no proven remedy other than arthroplasty. People spend sufficient money in search of that "magic medicine", enormous amount of time is lost and the disease continue to progress relentlessly causing sufficient damage to the muscles and bones so that finally even the surgical option of getting cured is lost forever. Added on all of these is progressive depression in mind about inability to get relief and people become hopeless with no urge to move forward in life. Surgery done at this stage of body and mind just produces disaster and enough to talk about the "useless surgery" amongst neighbours and relatives.

So the key to success for arthroplasty operation is "It should be done on the right patient in right time by the right person in the right way".

**If you need any further information please do not hesitate to contact us at 8972176765**