

Introduction:

In a normal knee joint, there is a thin layer of hyaline cartilage covering on the articular surface, this smooth layer of cartilage can help to reduce the friction between the joint surface. Upon aging, the loss of articular cartilage leads to narrowing of joint space, increases friction and pressure on the articular surface, resulted in knee pain.

The aim of total knee replacement is to reduce the knee pain and improves the range of movement, so that people can have a pain free, functional knee. The average survival for total knee replacement is around 15 to 20 years, it is recommended that for patient age over 50 and with severe knee pain can consider joint replacement surgery.

Indication:

Severe osteoarthritis knee, rheumatoid arthritis, avascular necrosis, fracture that lead to severe knee pain, swelling and limited range of movement.

Aims of surgery:

To reduce pain

Improve the range of movement of knee

Operation Procedure:

Total knee replacement is performed with a 15-20 cm midline wound across the knee joint. The articular bone and cartilage at femoral side and tibial side have to be removed. The implants are fixed with cement.

The femoral articular surface and tibial tray are made of cobalt-chromium and titanium alloys. The articulate insert is made of highly cross-linked polyethylene.

Preparation before operation:

1. Basic blood test, electrocardiogram and Chest X ray
2. Stabilize the underlying medical condition eg. Ischemic heart disease, diabetes, hypertension, anaemia, shortness of breath.
3. Cannot eat or drink 6 hours before operation
4. Clean the operative knee, may need shaving.

Anaesthesia:

Spinal anaesthesia or general anaesthesia

Post operative care:

1. Can resume diet after operation
2. Crepe bandage may be applied on the knee to control the bleeding and swelling
3. There may be a drain at the operative knee to drain out the blood. Foley catheter may be inserted when necessary. Need to pay attention to the drain and catheter when get out of the bed.
4. Drain usually will be removed 1 or 2 days after the operation.
5. Analgesic will be prescribed to relieve the pain
6. Early mobilization is recommended, can start walking with walking aids 1 to 2 days after the operation.

Discharge Plan:

Patient usually can be discharged 3 to 4 days after the operation
Wound will be healed around 10 to 14 days.

Risk of operation and complications:

Risk of anaesthesia:

General complications: pneumonia, myocardiac infarction, stroke

Risk of spinal anaesthesia: epidural haematoma, nerve injury

General complications of surgery:

Bleeding, haematoma, infection

Wound complications

Specific complications for total knee replacement:

Nerve injury: there may be numbness or weakness if the peripheral nerve gets injured.

Vascular injury: The risk of vascular injury in total knee replacement is very rare. Arterial repair may be required if major artery injury happens

Deep vein thrombosis or pulmonary embolism:

Leg length discrepancy

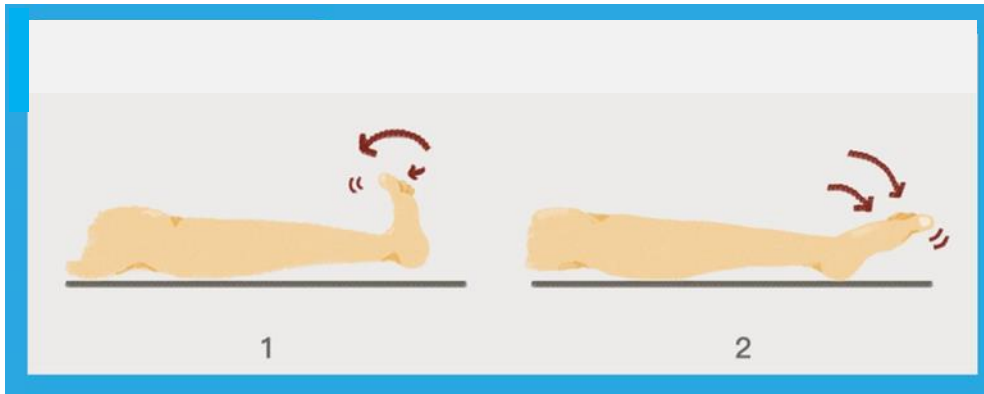
Fracture: Fracture would happen during operation or after operation

Dislocation: rare complication

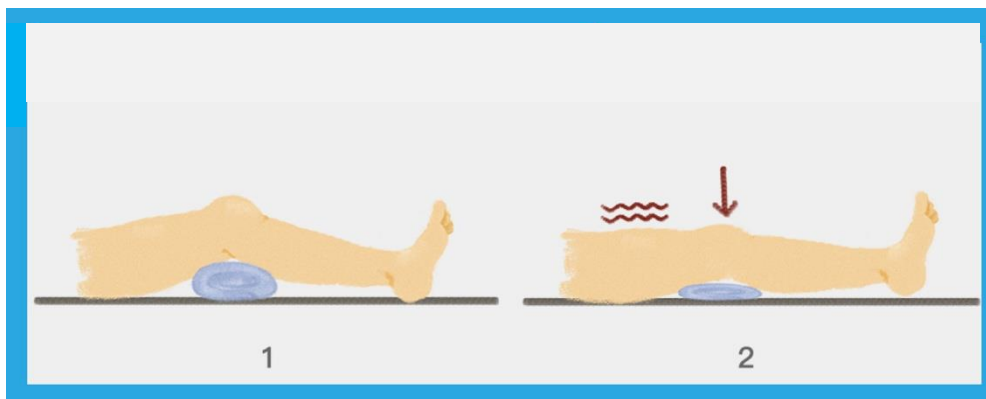
Revision surgery: Wearing is possible after joint replacement surgery. With time, there may be loosening of implants and need revision surgery. According to latest study, the survival for total knee replacement can up to 15-20 years.

Physiotherapy after surgery:

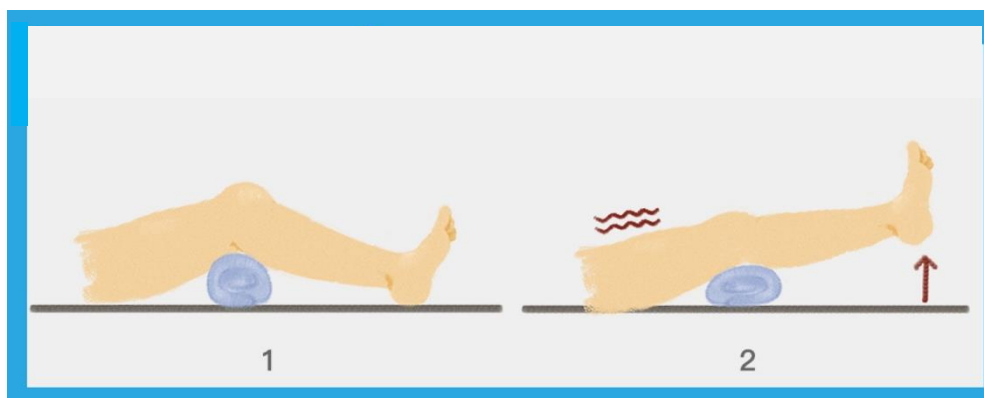
1. Lift up the foot and toes, hold for 2 seconds, then move the foot down for 2 seconds, repeat 10 times



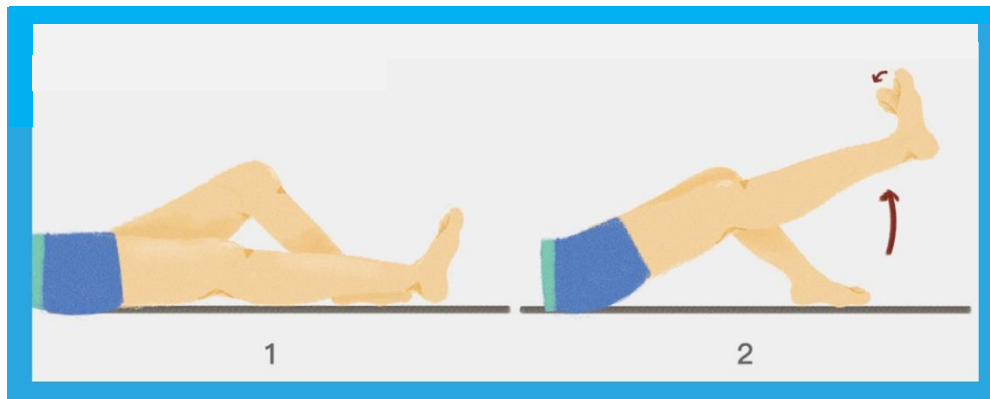
2. Put a towel beneath the knee, press the knee down, hold for 10 seconds, 10-25 times a set, total 3-4 sets a day



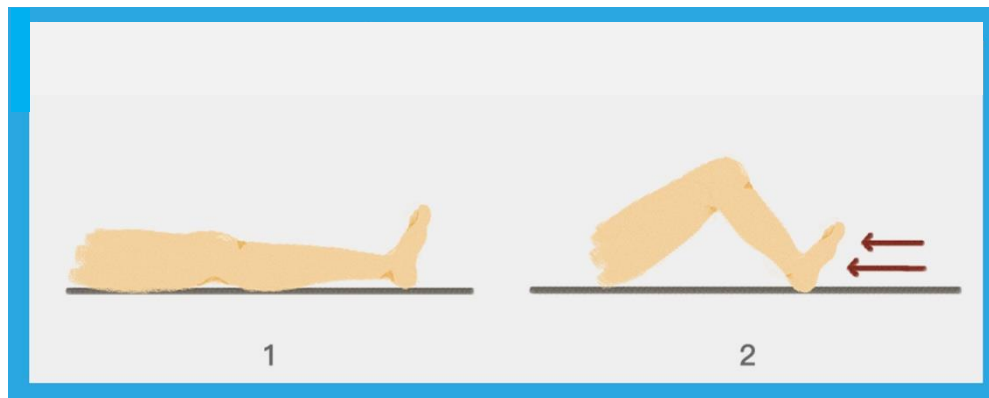
3. Put a towel beneath the knee and make the knee bend in 30 degree, then straighten your leg, hold for 5-10 seconds, repeat 10 times



4. Straighten the knee, lift the whole leg till 30 degree, keep it for 5-10 seconds, repeat 10 times.



5. Bend the knee as much as possible, then slowly straighten the leg, repeat 10 times, 3-4 sets a day.



Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor. Evangel Hospital reserves the right to amend this leaflet without prior notice. We welcome suggestions or enquiries on the information provided in this leaflet. Please contact Healthcare professionals so that we could follow up and make improvement.

Reference

Hospital Authority: "Total Knee Replacement" (2021)

Smart Patient: https://www.ekg.org.hk/pilic/public/O&T_PILIC/O&T_TotalKneeReplacement_0053_eng.pdf (22-07-2023)