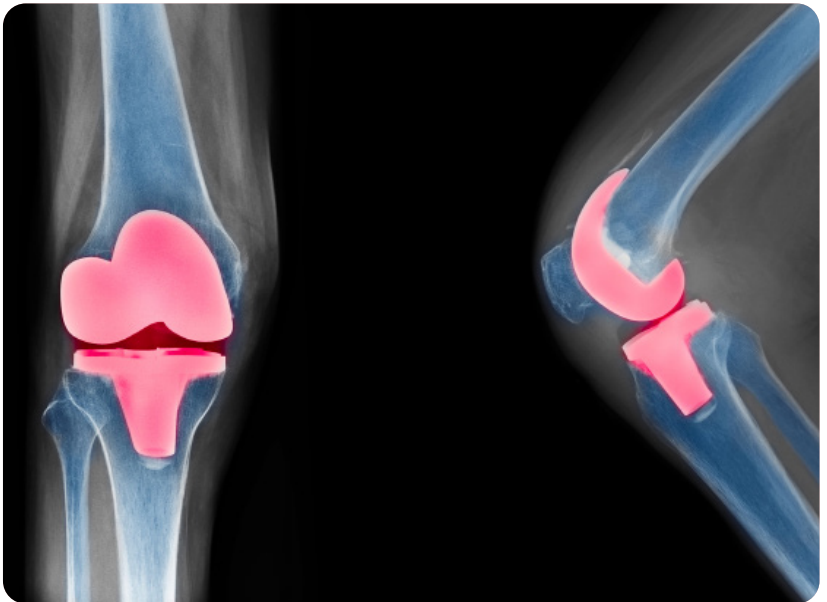


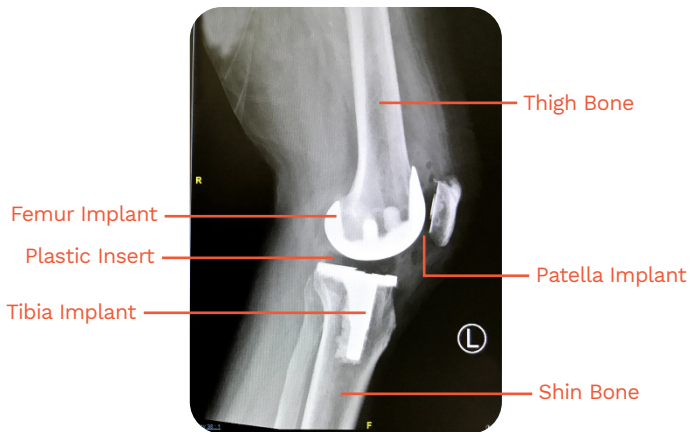
Total Knee Replacement

Procedures



What is a Total Knee Replacement?

A total knee replacement (TKR) is the resurfacing of the rough damaged joint of your knee with smooth metal implants.



During surgery, a smooth metal component replaces the damaged end of your thigh bone (femur), while a plastic component replaces the cartilage between the knee joint bones. Another metal component is used to replace the damaged end of your shin bone (tibia). Sometimes, the back of your kneecap is resurfaced if required.

Who needs a TKR?

You may need a total knee replacement if you experience:

- Degenerative condition of the knee.
- Pain, stiffness or deformity of the knee, which limits your movement and affects your daily activities.

Why do I need a TKR?

Total knee replacement can help to relieve your knee joint pain and allow better range of movements. With TKR, you will be able to walk better and farther, improve quality of sleep, and reduce painkiller reliance.

What do I need to know about TKR surgery?

- You will be invited to attend a patient education session to learn more about the procedure.
- An anaesthetist will discuss with you the different anaesthetic options available.
- A doctor or a nurse will inform you of the medications that should not be taken before the surgery.
- A financial counsellor will provide an estimated cost for your surgery and help you with the payment options available.

- The estimated length of hospitalisation is 2 to 3 days if no complications arise.
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What should I do before the surgery?

- Prepare a chair with armrests. When you sit down, your hips should be slightly higher than your knees.
 - Remove loose rugs, clutter and other fall hazards (eg. electrical cords) from the floor.
 - Consider getting anti-slip mats.
 - Prepare proper shoes (e.g. covered shoes or sandals with heel straps and non-skid soles).
 - Rearrange furniture in your home if necessary to ensure there is enough space to move around with a walking aid.
 - Reorganise your belongings so that frequently used items are easily accessible.
 - Prepare a bed with bed frame if you usually sleep on a mattress on the floor.
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What should I bring?

- Your present medication
- Toiletries and shaver etc. (Towels will be provided by the hospital)
- Outdoor shoes (Fully-covered shoes are preferable)

Pain control and management

Anaesthesia

There are different methods of anaesthesia available for knee replacement surgery. Your anaesthetist will perform an assessment and discuss the options with you.

- Under general anaesthesia, you will be asleep during the surgery. A breathing tube will be inserted down your throat to help you breathe during the surgery. You may experience side effects such as sore throat, nausea and vomit when you wake up.
- If spinal anaesthesia is given instead, you will feel numb below the waist and will not feel any pain during the surgery. You may be awake or on light sedation to keep you comfortable. Compared to general anaesthesia, you will be more awake after the surgery, and there is often less pain, nausea and vomiting afterwards.

Pain Management

- Managing your pain well after surgery is an important component in your recovery.
- Pain that is well controlled allows you to participate in your exercises and can help reduce the length of hospital stay.
- Take your pain medication regularly at least for the first 72 hours.
 - As your pain improves, you can slowly reduce the number and frequency of pain medication according to your needs.

- You will be given a combination adjusted to your individual needs.

Pharmacy / Herbal Remedies Caution

Some herbal and homeopathic remedies have side effects and can increase your risk of bleeding which may delay your surgery.

You are advised to stop taking the following remedies at least one week before your operation.

- Echinacea
- Ephedra
- Tongkat Ali
- Gingko Biloba
- Ginseng
- Valerian
- St John's Wort
- Garlic (safe in cooking)

What should I expect post-surgery?



A water-resistant dressing will be applied to your wound.



Calf pumps will be applied to your legs to help promote blood circulation and reduce the risk of blood clots development in the leg.

Home care advice

Physical activity

- Exercise will help your body heal and make you feel better.
- Continue the exercise programme as advised by your physiotherapist.
- You will need to use a walking frame for about 3 to 5 weeks. Thereafter, you may still need a walking stick for up to 3 weeks.
- Move about frequently but slowly, and gradually increase your activity level.
- Try walking every day, first in your home and subsequently outdoors. After walking, elevate your operated knee and rotate your ankle to reduce swelling.
- Even after full recovery, you are advised not to take part in any contact sports or activities that will put too much stress on your knee.
- It is important to discuss with your doctor before starting any new sport or activity.

Home environment

- Sit on a high chair with back support and armrest. You will find it easier to get up from a sitting position.
- To prevent falls, remove or watch out for long phone / electrical cords, loose rugs, slippery or uneven surfaces.

Diet and medication

- There is no special diet or fluid restriction unless otherwise instructed by your doctor. Eat a balanced diet and be sure to drink enough water.
 - Good nutrition will help your wound to heal and your muscles to regain strength.
 - Take your medication as prescribed by your doctor.
-

What will happen to my stitches or staples?

- Upon discharge, your doctor or nurse will inform you when the stitches or staples can be removed.
 - The stitches and staples are usually removed within 10 to 14 days after the surgery, but the timeline depends on the individual.
 - You will be given an outpatient clinic appointment to remove your stitches or staples.
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Medical implant card

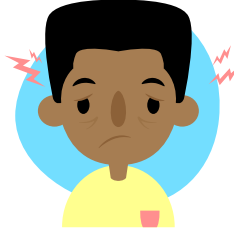
Bring along your medical implant card whenever you travel abroad.

When should I seek medical help?

If you experience the following symptoms, contact **Clinic E, Orthopaedic Centre** (during office hours) or our **Main Line** (after office hours), or visit our **Urgent Care Centre (UCC)**.



Unpleasant smell from the wound



Increasing or persistent pain at the wound site



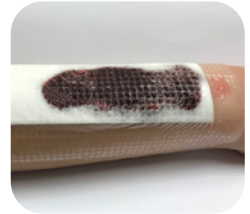
Fever above 38°C



Redness



Wound discharge



Excessive bleeding

Clinic E, Orthopaedic Centre (during office hours)

Contact Number : +65 6379 4020

Location : Block 2, Level 1

Operating Hours : Monday to Friday, 8.30am to 5.30pm

Closed on weekends and public holidays

Main Line (after office hours)

Contact Number : +65 6472 2000

When caring for your surgical wound at home:



Do not wet your wound



Do not aggravate your wound



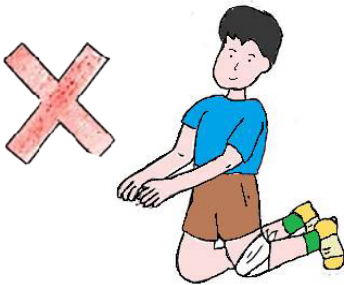
Do not do strenuous exercises or lifting



Do not apply creams or lotions unless otherwise recommended by your doctor



Do not touch the incision line if your wound is exposed



Do not kneel



Do not squat

What should I do after the surgery?

Rehabilitation

Rehabilitation can start as early as the same day of surgery, to prevent stiff knees. Your physiotherapist and occupational therapist will assist you in rehabilitation sessions. Your active participation will speed up your recovery. If you have a caregiver assisting in your post-discharge care, we encourage the caregiver to be present during your therapy sessions.

Discharge

Your hospital stay will be approximately 2 to 3 days. When you are able to move around safely, have normal food and drink intake, and there are no medical complications, you are safe to discharge to recover in your home environment.

What will happen during occupational therapy sessions?

The occupational therapist will teach you how to manage your daily activities after surgery such as dressing, toileting and showering.

Managing your daily activities at home

Dressing (e.g. putting on pants)

You are advised to dress your operated leg first while in a sitting position, followed by your other leg. Pull your pants over your hips and stand with the assistance of your walking aid.

Using the toilet

To stand up from the toilet seat or to lower yourself down to sit, place both hands on the walking frame. Alternatively, you can position one hand on the frame and the other on the toilet seat.

Showering

You are advised to sit on the chair when you shower. After showering, ensure the floor is not slippery before you stand or walk.

Common equipment and assistive aids recommended for your daily activities.



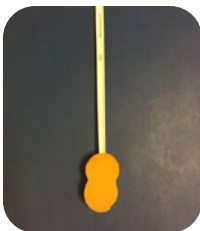
Commode



Long-handled
reacher



Long-handled
shoe horn



Long-handled
brush or sponge



Wheelchair



Grab bar

Please seek your occupational therapist's advice before purchasing these equipment or assistive aids. There are rental options available for wheelchairs and commode.

Getting in and out of a car

Prior to your discharge, the occupational therapist will advise you on how to get in and out of a car. Below are some general guidelines:

- 1 Walk towards the car with your walking aid.
- 2 Turn with your back facing the car seat and ensure the back of your knees feel the seat of the car (as shown in the image on the right).
- 3 Bring your operated leg slightly forward.
- 4 Lower yourself to sit, with hands supported by the walking aid.
- 5 Move yourself further backwards into the seat.
- 6 Pull in your legs one at a time.



Do the above in reverse when getting out of a car.

What is the recovery timeline?

- You should be able to return to driving 4 to 6 weeks after your surgery.
- In 1 month, you should be able to manage your daily activities independently.
- In 2 to 3 months after your surgery, you should be able to return to work.

However, please consult your doctor or occupational therapist prior to resuming these activities.

Physiotherapy

The physiotherapist will teach you a set of exercises for you to do at home. The exercises are an important part of the recovery process.

Resting knee position

When resting, it is important that you position your knee properly to avoid development of joint contractures and allow for maximum knee straightening.

- Do not place a pillow or towel under your operated knee.
- You are encouraged to place a towel roll at your ankle.
- Try to keep your toes pointing upwards towards the ceiling.



Pain and swelling control

Pain and swelling are normal after your operation. Manage it by applying ice on your operated knee for 20 minutes, once or twice a day. Elevating your leg at night with a pillow under the ankle may also help to reduce the swelling. Do not apply heat to your operated knee as this may increase swelling.

Physical activity

For optimal recovery, you should continue the home exercise programme prescribed by your physiotherapist and perform repetitions of each exercise 2 to 3 times per day.

Walking is a good way to build up and maintain the strength in your legs. Avoid walking on uneven surfaces and slopes. You may gradually increase the walking distance, progressing to 30 minutes a day. Continue to use your walking aid until you are advised to stop by your physiotherapist.

Breathing and circulatory exercises

Deep Breathing Exercise

This exercise helps to optimise your lung function and lowers the risk of lung infection.

- Sit in an upright position and lift your arms up as high as you can while breathing in. Hold this position for 3 seconds, before breathing out slowly as you lower your arms.

Ankle Pumps Exercise

This exercise helps to improve blood circulation in your legs and prevent the formation of blood clots.

- Pull your toes up and point them down as far as you can.
- Repeat this 10 times, 2 to 3 sets per day.



Heel Slides

- Sit upright on a firm surface with your legs straight. Bend your operated knee as much as you can, with your heel on the bed surface.
- At the top, hold for 3 seconds before sliding your leg down slowly. Repeat this 10 times, 2 to 3 sets per day.
- You may wrap a towel around your foot to assist with this exercise (as shown below).



Knee Mobility Exercise (In sitting)

This exercise helps to prevent joint stiffness by increasing the range of your knee bending.

- While seated, bend your operated leg back as far as possible. At this point, use your non-operated leg to bend further inwards (as shown in the image on the left below). Hold for 5 seconds.
- Then, straighten your operated leg and lift it up as high as possible. Similarly, use your non-operated leg to assist you to straighten further (as shown in the image on the right below). Hold the position for 5 seconds.
- Repeat this 10 times, 2 to 3 sets per day.



Static Quads

This exercise helps to activate and strengthen your quadriceps (thigh) muscle.

- Sit upright on a firm surface with your back supported. Place your operated leg straight on the bed with a pillow or towel under the ankle.
- Squeeze your thigh muscles and press your knee downwards onto the bed.
- Hold for 10 seconds before relaxing.
- Repeat this 10 times, 2 to 3 sets per day.



Inner Range Quadriceps

- Sit upright on a firm surface with your back supported.
- You may use a wedge-like or foam roll under your knee during exercise.
- Alternatively, you may also roll up a big towel and place it under your knee while doing the exercise.
- Straighten your knee and hold for 10 seconds before slowly lowering.
- Repeat this 10 times, 2 to 3 sets per day.



Straight Leg Raise

This exercise helps to strengthen your hip muscles.

- Lie down on your back and keep your non-operated leg bent.
- Keep your operated leg straight with your toes pointing to the ceiling. Lift it off your operated leg.
- Hold your leg in mid-air for 10 seconds before slowly lowering it.
- Repeat this 10 times, 2 to 3 sets per day.



Hip Abduction / Adduction

This exercise helps to activate and strengthen the hip muscles at the side of your hips.

- Lie on your back. Keep your legs straight with your toes pointed to the ceiling.
- Slide your operated leg out to the side and slowly back to initial position.
- Repeat this 10 times, 2 to 3 sets per day.



Standing exercises

Marching-On-The-Spot

This exercise helps to improve your standing tolerance.

- Hold on to a stable surface.
- Transfer your weight to your non-operated leg and lift your operated leg off the ground.
- Hold this position for 1 second before putting down your leg.
- Then, transfer your weight to your operated leg and lift up your non-operated leg.
- Repeat this 10 times, 2 to 3 sets per day.



Heel Raising Exercise

This exercise helps to strengthen the calf muscles.

- Hold on to a stable surface.
- Stand with your feet slightly apart.
- Push up onto your toes, raising your heels.
- Hold for 5 seconds before lowering your heels down.
- Repeat this 10 times, 2 to 3 sets per day.



Walking

After the surgery, it is likely that you will require a walking frame. Your physiotherapist will assist you and adjust the walking frame to ensure it is of a suitable height for your use.

- To stand up with the walking frame, place one hand on the center of the walking frame and your other hand on the bed.
- Upon standing, place your hands on either side of the walking frame to stabilise yourself before walking.
- To walk, place your walking frame forward, followed by your operated leg and then your non-operated leg.



Climbing stairs

Going up

- Hold on to the railing.
- Step up with your non-operated leg first.
- Then, move your operated leg up to the same step.



Going down

- Hold on to the railing.
- Step down with your operated leg first.
- Move your non-operated leg to the same step.



Frequently Asked Questions (FAQs)

What happens after my surgery?

Rehabilitation will begin soon after your surgery as it is extremely important to start the exercises to move your knee as soon as possible. This is also to prevent stiffness, pain, and swelling of your knee, as well as to reduce the formation of scar tissue.

Will I be in a lot of pain after my surgery? Is it safe for me to do these exercises?

It is normal to experience some amount of pain and discomfort as you recover from surgery. Your doctor and a team of nurses will help you to manage the pain and discomfort. You should only perform the exercises prescribed by your physiotherapist, and as long as they are within your tolerance threshold.

After my surgery, when will I be able to get out of bed and walk?

The physiotherapist will assist you to get out of bed and sit on a chair several hours after surgery. Rehabilitation can start as early as the same day of surgery with the help of a walking aid. The speed of recovery differs with each individual.

I am unable to perform my exercises up to the recommended dosage. What should I do?

You are advised to take intermittent rest between exercises and continue as tolerated. Gradually increase the repetition of exercises that you are able to perform.

Will I need to continue with physiotherapy after I go home?

Yes. Upon discharge, your physiotherapist will recommend a suitable home exercise programme. You need to be consistent with the home exercises to ensure optimal recovery. An appointment for outpatient physiotherapy will also be arranged upon your discharge. The appointment time frame will be estimated 1 week after your discharge. Your physiotherapist will continue to advise how often you need to come back, as well as the duration of your whole rehabilitation progress.

Do I need to purchase any equipment or a walking aid?

Your equipment and walking aid needs will be advised by your physiotherapist based on your post-operative recovery.

Will I be able to climb stairs?

It will depend on your recovery. Once you are able to walk, your physiotherapist will assist you in practicing climbing the stairs.

Will I be able to squat or kneel after my operation?

It is not advisable to squat or kneel during the initial few weeks after your operation as it will be painful and uncomfortable.

Will I be able to participate in other physical activities?

You should avoid high-impact activities such as contact sports and running during the initial stage of recovery. Your physiotherapist or doctor can provide you with specific advice on resuming normal day-to-day activities.

What do I need to look out for when I'm discharged?

Pain and swelling is common after the operation and may persist for weeks after the operation. You can manage the pain and swelling by applying ice on your knee for 20 minutes, once or

twice a day. Elevating your leg at night with a pillow under your ankle may also help to reduce the swelling. However, if you experience any excessive pain, any new numbness, tingling or discoloration in your foot, contact **Clinic E, Orthopaedic Centre** (during office hours) or call us (after office hours), or visit our **Urgent Care Centre (UCC)** immediately.

Clinic E, Orthopaedic Centre (during office hours)

Contact Number : +65 6379 4020

Location : Block 2, Level 1

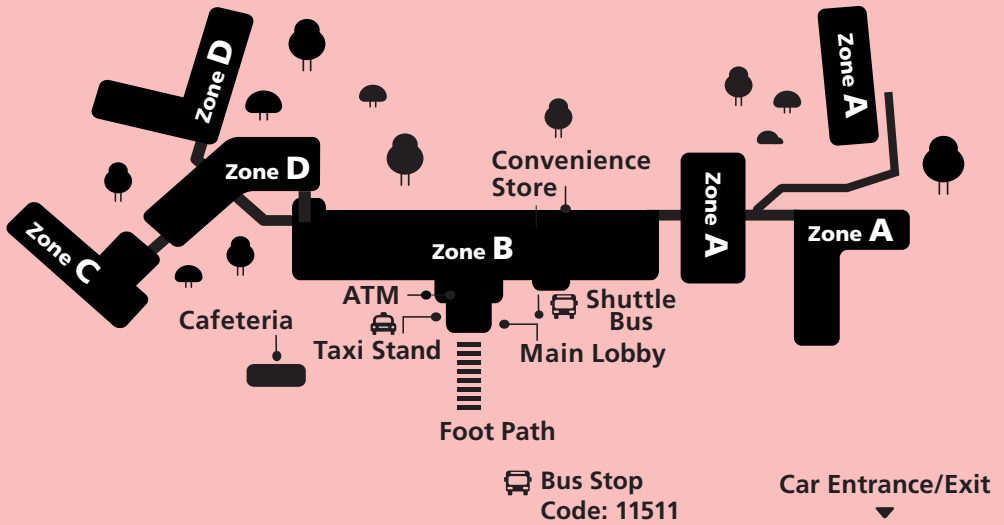
Operating Hours : Monday to Friday, 8.30am to 5.30pm

Closed on weekends and public holidays

Call us (after office hours)

Contact Number : +65 6908 2222

Every individual's experience following surgery is different. Your course of rehabilitation will be customised to your needs. If you have any queries, please consult your doctor or physiotherapist.



Scan the QR code to see the full directory of facilities!

The information provided in this publication is meant purely for educational purposes and may not be used as a substitute for medical diagnosis or treatment. You should seek the advice of your doctor or a qualified healthcare provider before starting any treatment or if you have any questions related to your health, physical fitness or medical conditions. Information is accurate at time of printing (Jan 2023) and subject to revision without prior notice.

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