

Total knee replacement (TKR) Surgery

Patient guidebook on
Enhanced Peri-operative Care (EPOC)

Date of surgery: _____

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Introduction

This guidebook aims to help you understand and prepare you for the upcoming surgery. Your doctors and nurses will guide you throughout the entire process, from pre-surgery preparations to post-operative recovery. This guidebook will also provide guidance on how you can actively contribute to your recovery. Our goal is to help you be prepared both physically and mentally for the journey ahead, and to ensure a seamless surgical experience and comfortable recovery period.

Important note:

Please bring this guidebook with you to the following appointments:

- Anaesthesia, Pain Management Clinic (APAC) counselling
- Nutrition and Dietetics Service
- Physiotherapy
- Short Stay Unit (on the day of surgery)

Things to bring to APAC appointment:

- Current medications that you are taking, including the packaging
- Any medical investigation reports done in private hospital or clinic settings

Knee Osteoarthritis



Osteoarthritis of the knee is the most common form of knee arthritis. It happens when the cartilage in the joint wears down over time, exposing the bone underneath. This condition is found to increase with age.

Other forms of arthritis include:

- Rheumatoid arthritis, an autoimmune condition causing chronic inflammation of the knee joint and other areas of the body
- Post-traumatic arthritis, where cartilage, bone or overall alignment of the leg is damaged or altered leading to acceleration of cartilage wear

Knee replacement surgery

When Should I Consider Knee Replacement Surgery?

Knee replacement surgery is a common surgery performed for knee arthritis to relieve pain and improve movement. This surgery is usually considered when pain is not improved through physiotherapy, activity modification and medication, and function remains significantly affected. A knee replacement will help to decrease pain, improve mobility and overall quality of life. After full recovery, you can enjoy low-impact sport activities such as walking, cycling, and swimming.

What are the types of Knee replacements?

Knee replacement can be performed for the whole joint, total knee replacement, or part of the joint (unicompartmental knee replacement), depending on the severity and extent of involvement of the joint. It involves replacement of the worn-out joint surfaces with surgical grade metal and plastic components. The implants can typically last up to 15 years.



What are the potential complications from the surgery?

Knee replacement, like any other surgery, carries potential risks and benefits. Your surgeon and anaesthetist will help to answer any questions you may have regarding your personal risks for the surgery.

Some possible risks include:

- Wound infections, which can usually be treated with antibiotics. Occasionally, the infection may spread deep into the joint and require additional surgery.
- Deep vein thrombosis or blood clots in the leg may occur because of decreased movement in the first few weeks after surgery. This can be prevented by starting to walk and exercising soon after surgery and with medication to prevent blood clots.
- Excess scar tissue may restrict movement of the joint. To restore flexibility, an additional surgery may be required to remove the extra tissue.
- Numbness in the area surrounding the wound.
- Ligament, artery or nerve damage in the area around the knee joint.
- Loosening of the knee replacement implant.

Preparing yourself for surgery

Pre-operative anaesthesia assessment

The doctor or nurse at APAC will perform a pre-operative anaesthesia assessment to ensure that you are suitable and ready for the surgery. They will also provide you information on different types of anaesthesia and pain management options during and after your surgery, based on your health profile. The best and safest routes for anaesthesia and pain management will be recommended for you after the assessment. The APAC team will inform you regarding which medicines to take and omit on the morning of surgery.

Stop smoking and alcohol

Smoking and alcohol consumption can cause complications, such as infection and flap failure, after your surgery and result in a slower recovery. Please let us know if you are keen to stop smoking before your surgery and we can support you through this journey.

You should stop smoking and alcohol consumption at least 2 weeks before your surgery. This will help your body to heal faster from the surgery.



Eating well and eating right

Nutrition plays a crucial role before surgery because it affects the speed of your recovery. Remember to consume a well-balanced diet consisting of rice, meat and vegetables. Your doctor may refer you to a dietitian for advice, should they feel that you need to improve your nutrition before your operation.

Avoid supplements and traditional medications 2 weeks before your surgery, unless prescribed by your doctors. Please consult with your doctor if you need any clarification.



Staying active

The hip and knee muscles are very important for walking. Here are some exercises that strengthen the key muscles to help you to walk well after your surgery. It is recommended that you do these exercises daily.

□ Knee extension:



20 repetitions
3 times a day

□ Quadriceps tightening



10 sec hold, 10 repetitions
3 times a day

□ Bridging:



5 sec hold, 10 repetitions
3 times a day

□ Heel slides (with/without towel)



20 repetitions
3 times a day

□ Sit to stand:



5 sec hold, 10 repetitions
3 times a day

Endurance exercises like walking, cycling or swimming will also be beneficial in improving your body's condition for the surgery. Do ensure that you work within safe intensity levels while you are exercising. Always consult your doctor or physiotherapist if you are unsure of how much you can do.

Planning for your needs ahead of your surgery

Arrange for a family member or friend to assist you with your everyday tasks at home, such as toileting, bathing and meal preparation when you are discharged. If you live alone, inform your case manager in advance so that prior arrangements can be made.

Home improvements:

- If you are staying in an apartment with multiple floors, ensure to install handrails along your stairs. You may also consider switching to a bedroom on the ground floor if you find it challenging to climb stairs.
- Install safety bars or handrails in your bathroom.
- Use a stable chair that is high enough for you to get up with ease.
- Arrange for a toilet-seat riser with arms if you have a low toilet.
- Use a bathroom stool when you are showering.
- Remove all loose carpets and wires to prevent falls.

Specialised equipment:

You may require the assistance of a walking frame or stick for several weeks after the procedure. You may also require a dressing stick to put on your trousers or socks.

<p>Bathroom stool</p> <p>Allows you to sit as you shower as you recover from surgery.</p>	
<p>Walking frame / stick</p> <p>To prevent falls, use adaptive equipment to assist with walking as you resume your daily activities.</p>	
<p>Dressing stick</p> <p>Assists you in putting on your socks or trousers until your knee becomes more flexible.</p>	

On the day of surgery

One day before your surgery, you will receive a call from our staff and be advised on the reporting details.

Here's what to expect on the day of your surgery:

1. Registration at the Short Stay Unit (SSU)

Please arrive at the SSU and register yourself for the surgery. Once registration is completed, our nurses will attend to you shortly and direct you to an assigned bed.

2. Pre-operative preparation at the Prep Holding Area

Your nurse-in-charge will provide you with instructions to change into a hospital gown and remove your jewellery and belongings for safekeeping. Your nurse will also gather information from you to ensure you are fit for the surgery. The surgical team will complete the final assessment to review your health condition. The surgical nurse will then bring you to the induction area.

3. Preparing for anaesthesia administration at the induction area

The anaesthetist will set an intravenous cannula and then prepare you for anaesthesia administration. From there, the surgical team will bring you to the operating room and prepare you for surgery.

4. Post-surgery monitoring at the Post Anaesthesia Care Unit (PACU)

After the surgery, you will be sent first to the Post Anaesthesia Care Unit (PACU) for close monitoring before being transferred to the ward. You may be given oxygen through a mask or a tube in your nose to help you feel better. You may also have intravenous drip, urine tube or drains from your surgery site. You will be encouraged to do early leg movements and exercises on the bed at the recovery unit once you have woken up from your surgery.



After surgery

Your doctors will review you after you have been transferred to the ward. You should be able to resume your normal diet.

The nurses will put on calf pumps to reduce the risk of deep vein thrombosis in your legs. Cooling bandages will be provided for you to control the pain and swelling on your knee. You will also be supervised and assisted by the nurses with your daily activities, such as sitting out of bed for meals and walking to the toilet with the help of walking aids.



Our physiotherapists and/or occupational therapists will review you for post-surgery rehabilitation and help you to start walking with walking aids on the day of surgery. They will guide you on the exercises that you can start with. You are encouraged to start exercising as soon as possible for a swifter recovery.

A urinary catheter may be inserted if you are unable to pass urine normally after your operation. This will be removed as soon as you are able to resume normal urination.

Day of Surgery

- Aim to sit out of bed
- Walk with assistance to toilet and range of motion exercises
- Confirm discharge plans

Post-surgery

Day 1 onwards

- Continue ambulation training and range of motion exercises
- Aim to clear small obstacles and stair climbing
- Goal-setting
- Caregiver training, if required
- Discharge for home with early supported discharge or to community hospital when bed is available
- Most patients can be discharged 1 to 3 days after the TKR surgery.

You will be prescribed with medication to reduce your post-surgery knee pain and swelling. This will enable you to participate in your rehabilitation with your physiotherapist. You may also be prescribed medication to manage nausea or giddiness that you may experience after your surgery. Painkillers should be taken routinely in the immediate post-operative phase and slowly reduced as the pain subsides.

You can use the table below to guide how much medication you need to manage your pain:



Your surgeon will review your wound dressings before you are discharged. Our nurses will teach you and your caregiver to change your wound dressing, if required.

Caregiver training

It is important to prepare your family members or caregiver in caring for you before you get discharged, so that they know how to assist you with your daily activities.

Your physiotherapists and/or occupational therapists will check your functional status, and provide caregiver training to your family members or caregiver to ensure that you can be safely discharged and will be able to cope with activities at home.

You and your caregiver will be taught exercises that you can do at home to help you recover and to prevent any complications.

Rehabilitative care

Depending on your condition and needs, our therapists will recommend an appropriate discharge destination.

Exercising after the TKR surgery is crucial for a good recovery. Your physiotherapists will continue working with you for 3 to 6 months after your discharge to enhance your strength, endurance and balance. It is important to attend these appointments to ensure a full recovery. These appointments may be at our Outpatient Rehabilitation, or at a day rehabilitation centre near your home.

Follow-up care

You will be referred to the polyclinic or your family doctor to change your wound dressing and/or remove the stitches or skin staples, if any.

You will also be given a follow-up appointment to see your doctor at the Specialist Clinic.

After discharge

What you can eat

You may resume eating and drinking normally upon returning home.

Managing pain at home

You will be given oral painkillers upon discharge to help you reduce your pain and aid in your rehabilitation. Icing the knee can also help reduce pain and swelling. You may perform ice therapy for 15 minutes, 3 times or more daily.

Wound care

Keep your dressings clean and dry, for example, when you are taking your shower. You may have non-absorbable stitches or skin staples for skin closure during surgery, which will be removed after 10 to 14 days.

Please consult your doctor if you experience signs and symptoms of wound infection, which include:

- Worsening redness or warmth around the wound or in the knee joint
- Pus or unhealthy-looking discharge from the wound
- Development of sudden onset fever of 38°C and above

If experience severe pain, fever, nausea or repeated vomiting, please contact us immediately or visit the Emergency Department.

Continuing activity and movement

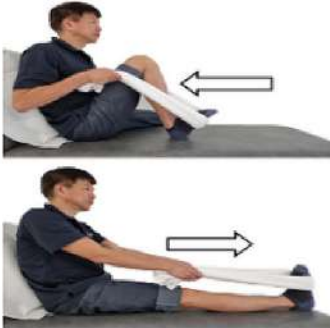
- You should not be lifting any load after discharge from the hospital. Check with your physiotherapist during your outpatient physiotherapy visits on when it is safe for you to resume carrying items.
- It is important not to sleep with a pillow under your knee as this may cause stiffness and reduce your knee movement.
- In the first 1 to 2 weeks, you should stay home to recuperate except for going for your medical appointments. You may move about at home, but household chores should be avoided.
- In the 3rd week, you may gradually increase the number of activities you are doing at home. You may start doing some light chores, such as dusting and wiping tabletops, and washing the dishes. Remember to take frequent breaks as necessary.



Post-surgery knee exercises

These are some common post-surgery exercises prescribed after a TKR surgery. Your physiotherapist will go through these exercises with you and recommend the ones suitable for you.

□ Range-of-motion Exercise



Use a towel to help bend your knee up to _____

Perform _____ reps, _____ times a day

□ Quadriceps Tightening



Push the back of your knee into the ground. Feel the tightness in your front thigh muscles.

Hold this contraction for _____ sec

Perform _____ reps, _____ times a day

□ Straight leg raise



Keep your affected knee straight, lift the leg up 1 foot high. Ensure that your knee is straight throughout the exercise.

Hold it there for _____ sec

Perform _____ reps, _____ times a day.

□ Inner range quadriceps



Place a pillow under the affected knee. Straighten the knee to lift the foot off the ground.

Hold this contraction for _____ sec

Perform _____ reps, _____ times a day

□ Sidelying hip abduction



Lie on your unaffected side. Keeping the affected knee straight, lift it up 1-foot high.

Hold this contraction for _____ sec

Perform _____ reps, _____ times a day

□ Ankle pumps



This exercise will help with blood circulation after surgery.

Perform _____ reps every hour.

Frequently asked questions

How do I manage swelling at home?

You may apply ice pack for about 15 minutes, 3 times or more daily. You can also elevate your knee by propping it up on a table or chair when sitting down for extended periods of time.



Will I be able to squat after the surgery?

General precautions such as deep squatting, kneeling, lifting anything heavy, jumping, pivoting or twisting exercises on the operated leg should be avoided in the first 2 months after the surgery. Do discuss with your surgeon and physiotherapist before you do so.

Can I return to driving?

It may take a few weeks before you can resume driving. You will need clearance from your surgeon during your outpatient follow up visit on when you can resume driving, which is based on your recovery progress.

When can I resume physical activities or exercising?

Your surgeon and physiotherapist will advise you when it is safe for you to participate in low-impact activities such as swimming (after the wound has healed), brisk walking, Tai Chi and golf.

Are bruising and pain normal?

It is normal to experience bruising, swelling and pain after the surgery. Bruising and pain will gradually diminish over a period of 3 to 4 weeks. The swelling may take 3 to 4 months after surgery to resolve. Do not hesitate to consult your doctor if you have any concerns.

Your ward nurses will communicate the following information before your discharge:

- Monitoring important signs and symptoms of wound infection.
- Management of wound care and dressings, such as where and how frequently to change your dressings.

Where can I get an implant card?

You may request for an implant card or memo containing information on the implanted device during your post-surgery review at the Specialist Clinic.

Antibiotic Prophylaxis for Dental Procedures

Please contact your surgeon for advise on antibiotic usage when going for dental procedures.

For any enquiries about this booklet, please contact us at 6363 3000.

Contributed by Enhanced Peri-operative Care (EPOC) Work Group

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