

Department of
Orthopaedic Surgery
Nursing
Occupational Therapy
Physiotherapy

Knee Replacement Surgery A Guide for Patients and Carers



Foreword

Dear Patients and Carers,

If you have received this booklet, it is likely that your doctor has explored a knee replacement surgery with you. This booklet aims to help you along your Knee Replacement Surgery journey.

Please bring this booklet with you to all appointments and when you come for surgery.

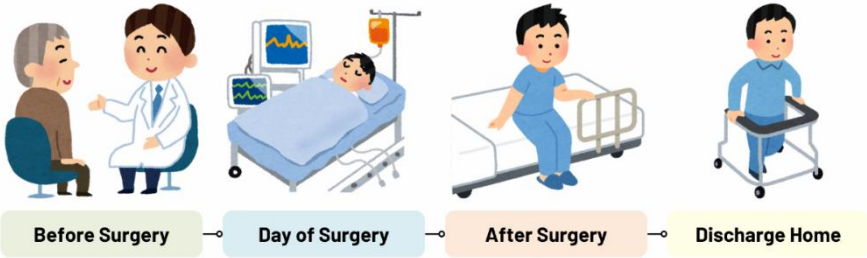
The content will cover:

- What to expect
- What is your role as a carer
- What you need to prepare
- How to care for yourself before and after the surgery

PLEASE NOTE:

This guide is not a diagnosis or confirmation of the treatment that you will receive. Please check with your doctor or a healthcare specialist for medical advice

Your Knee Replacement Journey



<p>Before Surgery</p>	<ul style="list-style-type: none"> • Appointment with PACE clinic (pg 8) • Watch videos on knee replacement (pg 12) • Your case coordinator will call you 1 to 2 weeks before your surgery date. • The PACE Clinic will call you the day before your surgery to tell you what time to come to the hospital.
<p>Day of Surgery</p>	<ul style="list-style-type: none"> • Your knee surgery will take 2 to 3 hours in the operating theatre • Eating and drinking after surgery • You will start moving around gently if you are feeling well
<p>After Surgery</p>	<ul style="list-style-type: none"> • You will stay in the hospital for 1 to 2 days after your surgery. • Therapy sessions
<p>After Discharge</p>	<ul style="list-style-type: none"> • Community-based therapy sessions • Follow up phone call within 3 working days • Doctor's follow up appointment

Before Surgery

Day of Surgery

After Surgery

After Discharge

Your Knee Replacement Journey

Day 0 - 3
Hospital Ward Routines
Early mobilisation in the hospital



On Discharge
Continue exercises and
daily activities at home

2 - 3 Months of Rehabilitation
3 - 5 sessions at a
Day Rehabilitation Centre



The Rehabilitation Process

Early mobilisation will help to prevent blood clots in your legs, prevent muscle weakness and deconditioning, which facilitates early return to normal function.

You may require a walking aid for the first 4-6 weeks to facilitate the healing of your knee. It is important to attend your follow-up appointments as scheduled.

Before Surgery

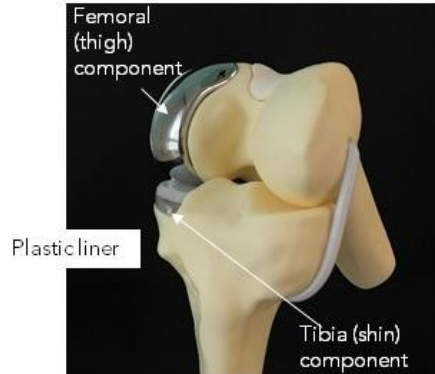
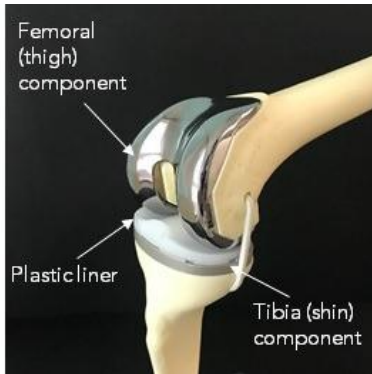
Day of Surgery

After Surgery

After Discharge

Types of Knee Replacements

There are broadly two types of knee replacements (total and partial) commonly performed, though your suitability for either option will be informed by your doctor.



Types of Prostheses. Knee Replacement Surgery.

<https://www.ttsh.com.sg/Patients-and-Visitors/Pages/Find-Conditions-and-Treatments-Details.aspx?condition=Knee-Replacement-Surgery>

Risks of Surgery

While this type of surgery is commonly performed, there are possible complications that may occur

- Bleeding or Bruising
- Infection and wound breakdown
- Injury to nerves & blood vessels
- Blood clots in the leg and/or lung
- Stiffness or Instability
- Fractures around the prosthesis
- Loosening of the prosthesis
- Stroke and/or Heart Attack

Your doctor will counsel you on these complications and take steps to reduce the risk.

Your Healthcare Team

Surgeon

Performs your knee replacement surgery



Physiotherapist (PT)

- Mobility training
- Exercise prescription



Nurse

- Administer medication
- Wound dressing
- Vital signs monitoring



Occupational Therapist (OT)

- Assess your ability to manage daily activities
- Home modification recommendations



Case Coordinator

- Facilitates discharge planning
- Clarifies your expectations about knee surgery

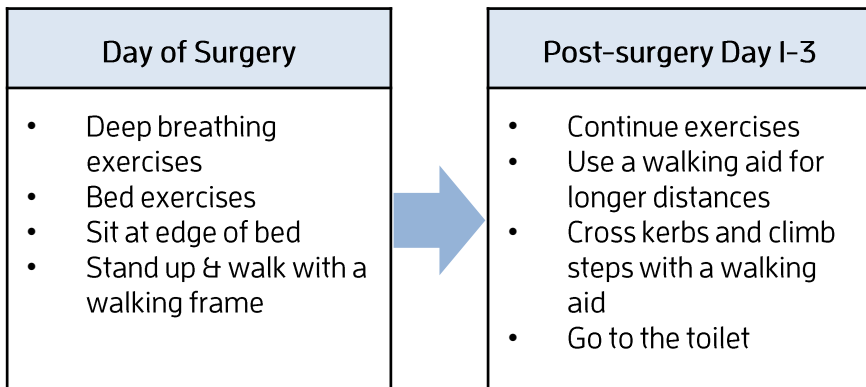
Before Surgery

Day of Surgery

After Surgery

After Discharge

Progression of Your Rehabilitation



You may be discharged home when either	
A	<p>You are independent with</p> <ul style="list-style-type: none"> - Getting in/out of bed - Walk independently with a walking aid - Manage stairs (if needed)
	<p>You have follow-up therapy services and (if necessary) escort with follow up appointments.</p>
B	<p>You are not yet independent, but your carer has gone through Caregiver Training to help you at home.</p> <p>Your carer can escort for your follow up (therapy/ doctor) appointments for the next 2-3 weeks</p>

Preparing Yourself Before the Operation

Smoking and alcohol consumption can cause complications to your surgery. Stop smoking and avoid alcohol intake for at least four weeks before your surgery.



Negative Effects of Smoking

- Decreases your heart and lung function
- Decreases your body's ability to heal
- Increases your risk of developing complications

Need help to quit smoking?

Ask your surgeon to refer you to the smoking cessation service, or contact Health Promotion Board's I Quit Programme:

- Call: 1800 438 2000
- Sign up online: <https://for.sg/iquit>



Negative effects of Alcohol

- May interfere with anaesthesia
- Decreases your heart and lung function
- Increases your risk of bleeding
- Increases your risk of developing complications

Pre-Admission Counselling and Evaluation (PACE)



Location: Level B2, TTSH Medical Centre

Telephone: 6357 2244 / 6357 2218

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

You will be reviewed at PACE Clinic by a Nurse and/or Anaesthetist to prepare you for surgery.

- You may receive iron injections to boost your blood iron levels.
- You will be informed of any medication changes, especially if you are on blood thinning drugs

Before Surgery

Day of Surgery

After Surgery

After Discharge

Home Environment Preparations

Other practical preparations you can consider to help you cope better at home include:

- Consider living with your carer until you are independent
- Make sure your chair/bed is of suitable height (refer to page 10)
- Remove loose rugs and clutter on the floor
- Ensure frequently used items are within reach
- Keep your home well lit

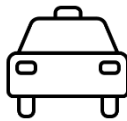
Scan the QR code for more
falls prevention tips at home



Plan ahead for your daily activities

Consider how you can arrange help for more strenuous activities. Some examples:

- Hire/seek help for heavy chores (e.g. washing toilet, laundry)
- Arrange for food/grocery delivery services.
- Plan escort and transportation for discharge and subsequent follow-up appointments.
- Explore online banking for bills payment.

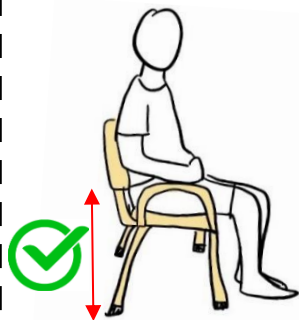


Home Environment Preparations

Suitable Seats, Chairs and Bed

General principle for seating

- Seat Height: your **hip** should be positioned slightly above your knees.
- If possible, choose sturdy seats with **back and arm rest** for better support.



Chairs

Remember to check the height of these places:

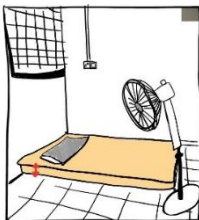
- Bed
- Toilet
- Chairs
- Sofa



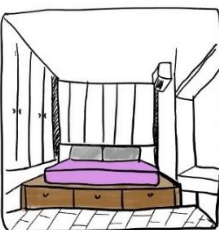
Low chairs without armrests



Soft, deep-seated sofas



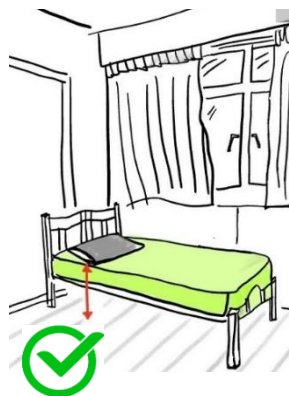
Floor mattress



Low platform beds



Squatting Toilet



Bed

Home Environment Preparations

Make Your Toilets Safe



Prevent falls in the toilet by

- Sitting down to shower
- Using wall-mounted grab bars during movement

If you struggle to get on and off the toilet before surgery, use a raised toilet seat or commode chair to make it higher.



Do not squat on the toilet bowl



Do not stand to shower if you still require a walking aid for mobility



HDB EASE Programme

provides home modifications with subsidies.

Eligible for Singaporean HDB flat owner with a family member aged 65 and above.

To apply visit go.gov.sg/hdb-ease-esvc

To find out more visit go.gov.sg/hdb-ease

Or call the Branch Service Line 1800-225-5432

(Weekdays 8.00am -5.00pm)

Home Environment Preparations

Steps and stairs

Inform your physiotherapist if you must climb stairs at home. You may require assistance to navigate these steps and stairs.

Steps at home entrance



Stairs inside your home



If your house has more than one floor, it is recommended to move your bedroom and keep your activities to the first floor.



**Videos:
How to Prepare for
Your Knee Surgery**

Checklist before surgery



Preparing well before your knee surgery can help ensure a smoother recovery. This section has covered the key steps to get ready, so please review the checklist below to make sure you have everything in place before your procedure.

Stop smoking and avoid alcohol for at least four weeks before surgery.

Arrange for a caregiver to help with meals, household tasks, and personal care.

Consider living with your caregiver until you regain independence.

Check the height of your bed, toilet, and chairs; ensure they are suitable.

Purchase a raised toilet seat or commode chair if needed.

Hire or seek help for heavy chores (e.g., cleaning toilets, laundry).

Arrange food and grocery delivery services.

Plan transportation and escort for discharge and follow-up appointments.

Apply for home modifications (e.g., install toilet grab bars).

Move your bedroom to the first floor if possible.

Day of Surgery

Fasting Guidelines

You will need to limit food and drink intake to prepare for your surgery.

You will be informed of your surgery time 1-2 days before your surgery date.

If your operation is before 1:00pm

- Stop eating at 00:00 midnight
- You may drink ONLY plain water (250ml) before 06:00am.

If your operation is after 1:00pm

- Light breakfast before 07:00am
 - PLAIN bread/biscuit with NO spread (e.g. Jam/ Kaya/ Butter)
 - Coffee/tea WITHOUT milk
- You may drink ONLY plain water (250mls) before 11:00am

Post-Operative Routines in The Hospital

After your surgery, your nurses will assist you with some of these routines in the hospital. You will need to continue to manage some of these routines at home on discharge.



Vital signs checking



Medication



Swelling control



*Anti-embolic
Stockings*



*Positioning your legs
during rest*



Wound care

Post-Operative Routines in The Hospital



Vital Signs Monitoring

After your operation, your temperature, pulse blood pressure and oxygen saturation will be monitored during your hospital stay.

- **First 6 hours: hourly monitoring**
- **Subsequently: once every 4–8 hours**

While this frequent monitoring may impact your sleep, it is a crucial for the team to promptly identify any changes in your health status.

Pain Management



It is normal to have some pain and swelling after your operation. Taking your pain medication regularly is important - it keeps you comfortable and helps you start your exercises sooner.

We can manage your pain with medications and other methods.

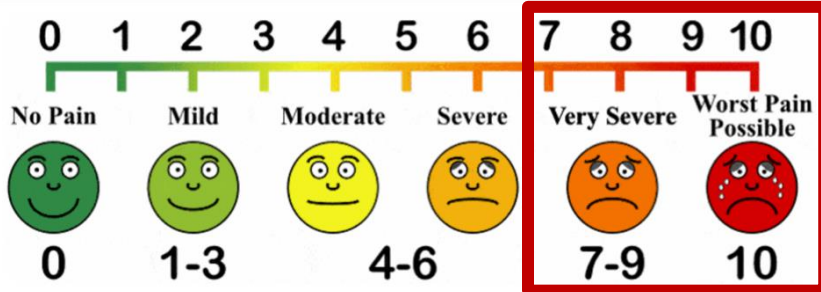
A) Medication	
Take your painkillers 30 minutes before demanding activities (e.g., exercise/shower) to relief pain.	
Commonly prescribed painkillers include:	
<ul style="list-style-type: none"> • Paracetamol • Celebrex (celecoxib) • Arcoxia (etoricoxib) 	<ul style="list-style-type: none"> • Lyrica (Pregabalin) • Oxynorm (Oxycodone) • Tramadol • Gabapentin
Side effects of the medications may include:	
<ul style="list-style-type: none"> • Nausea and vomiting 	<ul style="list-style-type: none"> • Dizziness • Constipation
B) Alternative pain management:	
<ul style="list-style-type: none"> • Apply ice pack • Repositioning leg • Gentle exercises 	<ul style="list-style-type: none"> • Relaxing activities (Play music, watch TV etc.)

Post-Operative Routines in The Hospital



Pain Management

If your pain feels worse than 6 out of 10, ask your nurse for extra pain medication.



Swelling Control



Cold pack can help to relieve pain, swelling and inflammation of the knee. It is placed over the knee for 20 minutes at least 3 to 4 times a day. It is normal to feel slightly cold over the knee.

Inform the nurse and remove the cold pack immediately if you feel extreme cold, pain or burning sensation.



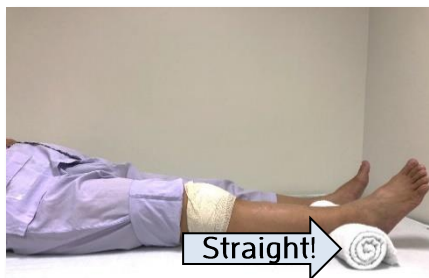
Place the operated knee on two pillows to reduce swelling.

Post-Operative Routines in The Hospital



Positioning Your Legs

It is advised to raise your operated leg on a towel roll at rest and keep the knee straight.



In addition to the exercises prescribed by the physiotherapist, you may be placed on continuous passive motion device to move the knee.



Continuous passive motion machine

Post-Operative Routines in The Hospital

Reducing Risk of Blood Clots




Thrombo-embolic Deterrent (TED) stockings are compression stockings worn to:

- Improve blood circulation
- Prevent blood clots forming in your legs

Alternatively, **compression pumps** may be applied.



Calf pumps over TED stockings

		
<p>Ask your healthcare team to show you how to put on and take off your TED stockings.</p>	<p>Getting out of bed and walking remains as the best method to reduce risk of blood clots forming after your operation.</p>	<p>DO NOT walk on the stockings, roll them above the ankles or use footwear</p>

Post-Operative Routines in The Hospital



Wound Care and Management

In the wards, your medical team and nurses will help you with your wound dressing. It is normal to experience:

- Tenderness, tightness, itchiness, and/or numbness at the wound site
- Bruising and swelling, which will gradually reduce over a few weeks to months
- Blood stains on the dressing

If you notice excessive bleeding or yellow discharge after discharge from hospital, please refer to page 27 (Seeking Medical Advice After Discharge).



Dressings with slight blood stains

Excessive bleeding or yellow discharge



Do not apply cream or lotion onto the wound before it heals.

Avoid these movements after your knee surgery



AVOID EXTREME movements of your knees.

No squatting, kneeling and going down steep stairs/slopes



AVOID LIFTING
heavy objects or pushing heavy objects with your knee



AVOID HIGH-IMPACT ACTIVITIES
That involves sudden forceful stopping and starting (e.g. tennis)

AVOID PIVOTING
or twisting your operated leg

Daily Activities

Putting on Pants



Put operated leg into the pants first and remove it last

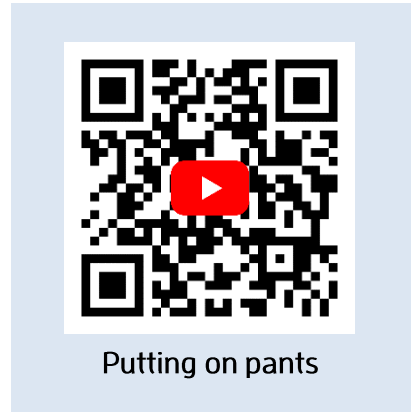


Use grab bars/ armrest/ walking aid to steady yourself when standing up



DO NOT put on pants, socks or shoes while standing.

Instead, perform these activities while seated on a sturdy chair.



Putting on pants

Daily Activities

Toileting

Always bring your walking aid to the toilet.



Do not squat on the toilet bowl or use squatting toilets



Use sturdy support (such as grab bars) to stabilise yourself when getting up from the toilet



For men using the toilet standing up:

Position your walking frame over the toilet and hold onto it for support.



Daily Activities

Showering

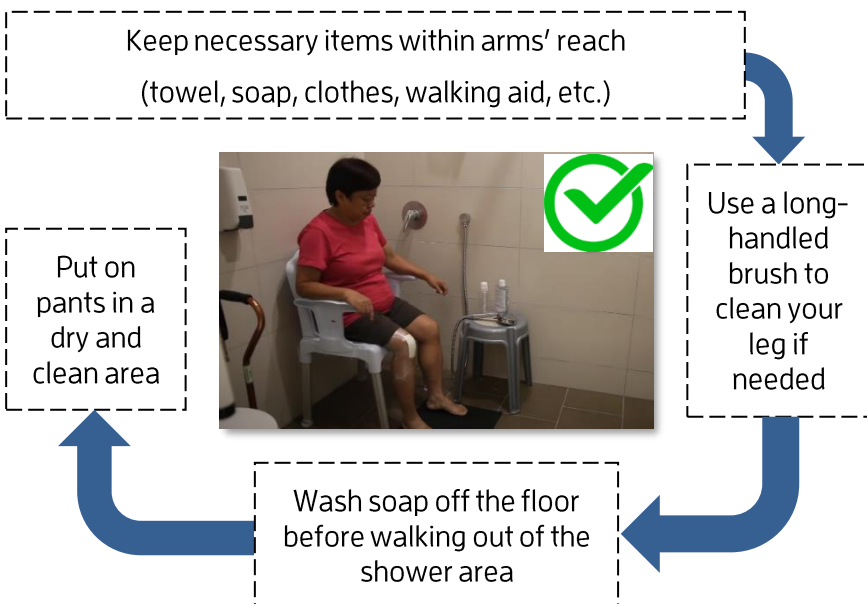
1. Waterproofing Your Wound Dressing
Keep your dressing dry by reinforcing with cling wrap/plastic and Micropore tape.
2. Skin Hygiene
Gently wipe and clean the surrounding skin using a wet-wipe or damp towel after shower



Showering

It is **strongly recommended** to sit down for shower

Tips for Showering



Tips for Returning to Routine Tasks

Gradually resume light activities about one week after surgery. Always keep one hand on your walking aid for stability.

Sweeping

- Plan for seated breaks
- Gradually reduce the duration of breaks in between sweeping

Cooking

- Plan for seated breaks
- Make simple dishes (shorter standing duration, use lighter pots)



Returning to routines



Laundry

- Avoid squatting down, use a chair instead
- Fold your clothes in a seated position
- Keep drying laundry at shoulder height
- Avoid hanging clothes overhead



This list doesn't cover everything you can do.

By taking regular breaks and going at your own pace, you'll be able to do even more activities!

Going Out of the House

Getting in and out of the car

- Ensure the back of your knees touch the car seat before sitting
- Swing one leg in at a time while seated
- When alighting; ensure both place both legs on the floor before push to stand with support



Car transfer

Appropriate Footwear

Provides necessary support and traction, promoting stability and balance. Preventing slips, trips, and falls can reduce the potential for injuries that could delay your overall recovery.



Loose footwear
No friction



Well-fitted
Good friction
Back strap

Other Daily Activities

Can I return to driving?

Ask your surgeon at your follow-up appointment. Most people can drive again 4-6 weeks after surgery, depending on how well you're healing.



When can I resume physical activities?

Your surgeon and physiotherapist will tell you when it's safe to start low-impact activities like swimming and golf.



When can I return to work?

Discuss this with your doctor at your follow-up visit after your 1-month sick leave. If needed, they may refer you to a specialist (Return-to-work Occupational Therapist) who helps people return to work safely.



Before Surgery

Day of Surgery

After Surgery

After Discharge

Seeking Medical Advice After Discharge

Non-emergency

Contact Tan Tock Seng Hospital Orthopaedic Clinic to seek advice for medical certificate, appointment and medication top-up related matters.

- Private Clinic BIB Hotline: 6889 4055
- Subsidised Clinic BIA Hotline: 6889 4006

Monday to Friday : 8am - 5pm

Saturday : 8am - 12pm

Sunday & Public Holiday: Closed

Emergency

- 24-hour helpline - Knee/Hip Arthroplasty Ward 9F at 9195 8305
- After office hours, you are advised to seek treatment at the Accident & Emergency Department

When Should You Seek Medical Attention?



Chest pain



Shortness of breath



Persistent fever



Persistent pain



Swelling



Excessive bleeding

Follow-up Appointments

Doctor:

Your first visit to the Orthopaedic Clinic will be around 2-6 weeks after the surgery.

Wound Dressing:

You will be advised by the team on your follow-up appointment for:

- Wound inspection and dressing change
- Removal of stitches after surgery (if needed)

Therapy

After Two Weeks:

- You will continue rehabilitation at a Day Rehabilitation Centre (DRC) for at least 3-5 sessions.
- The Agency for Integrated Care (AIC) will contact you regarding DRC matters.
- For more information; you may access the AIC website <https://www.aic.sg>



AIC Hotline

1800-650-6060

Monday to Friday: 8:30am – 8:30pm

Sat: 8:30am – 4pm

Sunday & Public Holiday: Closed

Rehabilitation Exercises

While doing the exercises, it is normal to feel mild discomfort, stretching or pulling pain initially. Your wound and implant will not be affected if you follow your physiotherapist's instructions.

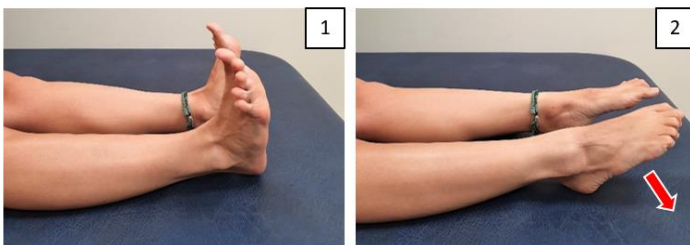
Bed Exercises

I. Deep Breathing



- Breathe in through your nose, while raising your arms.
- Breathe out slowly through your mouth while lowering your arms.
- Repeat 10 times every waking hour

2. Ankle Pumps



- Move your ankle up by pointing your toes towards your knee.
- Move your ankle down by pointing your toes away from your knee.
- Repeat 10-20 times every waking hour

3. Static Quads



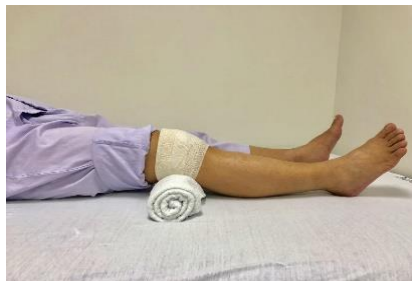
- Place a rolled-up towel under the heel of your operated leg.
- Tighten the muscles above your operated knee to straighten the knee.
- Hold for _____ seconds then relax.
- Repeat for _____ repetitions, 3 times a day

4. Knee Bending



- Slide the heel of your operated leg towards your buttocks.
- You may use a towel to bend your knee further.
- Hold for _____ seconds and relax.
- Repeat for _____ repetitions, 3 times a day.

5. Knee Straightening in Bed



- Place a rolled-up towel under your operated knee.
- Straightening your knee and lift up your heel
- Hold for _____ seconds and then relax.
- Repeat for _____ repetitions, 3 times a day.

6. Straight Leg Raise



- Straighten your operated leg and lift it up till your heel is away from the bed.
- Hold for _____ seconds.
- Lower the leg slowly while keeping the leg straight.
- Repeat for _____ repetitions, 3 times a day.

Seated Exercises

I. Seated Knee Straightening in Chair



- Straighten your operated knee as shown.
- Hold for _____ seconds and then relax.
- Repeat for _____ repetitions, 3 times a day.
- Use your un-operated leg to help if needed.

2. Seated Knee Bending in Chair



- Place your un-operated leg in front of your operated leg
- Use your un-operated leg to gently bend your operated leg
- Hold for _____ seconds and then relax.
- Repeat for _____ repetitions, 3 times a day.

Clinic B1A
TTSH Medical Centre, Level B1
Contact:
8890 9359 (TKR Coordinator – only during office hours)
6256 6011 (General Enquiries)



Scan the QR Code with your smart phone
to access the information online or visit
<https://nhghealth.com.sg>

Was this information helpful?
Please feel free to email us if you have any
feedback regarding what you have just read at
patienteducation@ttsh.com.sg



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