



Guide to Total Knee Replacement

Why do you need a knee replacement?

Knee replacement is required in cases of severe arthritis or trauma which has led to a damaged knee. Arthritis occurs when the cartilage lining the joints is worn away, exposing the underlying bone. The joint becomes rough and distorted, resulting in pain, stiffness and restricted movement. It is a “quality of life” operation performed only when a patient is significantly disabled from pain, stiffness, loss of mobility and function.

What is a total knee replacement?

A total knee replacement is an operation which replaces a knee. Your knee joint is a ‘hinged’ joint and bears the full weight of the body during walking. Cartilage lines the normal knee joint, allowing it to flex and extend in a smooth and free manner.

How is a knee replacement performed?

The total knee replacement is a prosthesis which has the same basic parts as your own knee. The surgical procedure involves removing the diseased joint and replacing it with new parts. The end of the femur (thigh bone) is removed of residual cartilage and shaped to fit a metal prosthesis. The top of the tibia (leg bone) is replaced with a metal and plastic component. The patella (knee cap) may or may not be replaced; this is decided at the time of the surgery. The new components are fitted together and since the painful diseased cartilage has been removed, there is generally a very quick relief of pain. The operation usually takes less than two hours and the new joint is often immediately solid.

How long will I be in the hospital?

Generally, 3 to 5 days. Occasionally certain patients may need more time and will be transferred to a rehab facility for another week or two. Also, if being sent directly home from the hospital you may need home help. This will all be discussed while in the hospital.

Can I go on flights after my surgery?

Generally, flying is not allowed until 6 weeks after your surgery, due to the risk of blood clotting.

Flu Injection after surgery:

It is safer to wait for a period of 4-6 weeks post-surgery before having any flu injection.

Following surgery

- You will sit out of bed/mobilise the day of surgery or day 1 post-operatively.
- Weight bearing will be as tolerated, unless otherwise ordered.
- During the first few days after surgery, there is naturally some pain. The anaesthetist will implement the best suited pain relief protocol. If at any time you are experiencing pain, please inform the nursing staff as the doses given can be adjusted to help make you more comfortable. The aim following surgery is to make you comfortable so that you are able to get in and out of bed and that you do the exercises that the physiotherapist has given to you. It is advisable to take pain medication at least half an hour before physiotherapy. It may be necessary to continue with the pain medication after you are discharged home.
- Within 24-48 hours after surgery any drains are removed and the wound is inspected.



Discharge information

- Your stay in hospital will be approximately 3-5 days long.
- You will be discharged home or to a rehabilitation unit.
- Not everyone goes to rehabilitation. Some people go home to recuperate.
- For patients going directly home with no inpatient rehabilitation prior to your discharge the physiotherapist will show you how to go up and down stairs using the crutches. You will be discharged using crutches or a walking stick. On discharge the physiotherapist will instruct you on the exercises that you need to continue at home. You will need to speak with the physiotherapist if you need to hire equipment for home. The physiotherapist will instruct you on the length of time needed for walking aids. You will be allowed to fully weight bear, unless otherwise instructed.
- We have included an x-ray request form in your post op pack. You will need to have another x-ray of your knee prior to coming to see Dr Chien in his rooms for your 4-6 week post-operative appointment. This x-ray is so that Dr Chien can check the placement of your prostheses after the operation.
- Pain will take 6 months to maximally improve, but every week will be better. Some patients may take only Panadol/Panadeine by 4 weeks post-surgery. Everybody recovers at vastly different rates; however, so it is best to not compare yourself to others you know who seem to have recovered faster than you. Throughout your recovery, keep elevating your knee, and using ice.
- Upon discharge the nursing staff will give you instructions about the care of your wound and removal of stitches if needed. Your sutures if need be are removed when the wound is healed, usually at 2 weeks after surgery. You should go to the GP 2 weeks after surgery to check your wound. If the wound is well healed, the GP can take the dressing off completely. If not, the GP can change the dressing.
- To reduce the incidence of clots/deep vein thrombosis (DVT) in your lower leg, several things are done. TED (anti embolism) stockings are worn to help decrease the incidence of DVT. These must be worn all day and night, every day for four (4) weeks after surgery. You should only remove them for showering and bathing. You will also receive a daily Aspirin tablet for 4 to six weeks from day of or day after surgery. This helps reduce the incidence of DVT. Doing leg and feet exercises while in bed as well as mobilisation (starting from the time instructed by the surgeon), also helps decrease your chances of getting DVT in the lower legs.
- It is very important that you do deep breathing and coughing exercises every hour. This helps improve your circulation and also reduces the chances of you getting any respiratory complications.
- The nurse will come and talk to you on discharge. Following surgery, you will be recommenced on your regular medications. This may not include anti-inflammatory medication or hormone replacement therapy. These medications will recommence when ordered by the doctor. Painkiller prescriptions will be given only if necessary.
- It is normal for the operated knee to be swollen following surgery. As your activity levels increase you may notice swelling in the ankle. Swelling will be present in the knee and possibly the ankle for several months following surgery. It will eventually go. **If you have excessive pain and swelling in your calf, however, please contact Dr Chien's rooms or present to the Emergency Department.**



- Following joint replacement, constipation is common due to decrease in physical activity, change in dietary habits and pain medication used during and after surgery. Having a high fibre diet and drinking large amounts of fluids will help relieve constipation.
- You will need to be confident on your crutches to be discharged.
- During the period between discharge from hospital and your follow-up visit with Dr Chien it is important that you use your walking aid to assist and protect your new joint, while you aid recovery and circulation by moving around.

Do I need Physical Therapy?

- You will need physiotherapy for 6 weeks after your operation.
- The physiotherapist will see you every day whilst in hospital. Physiotherapy is an important part of your recovery. The first time that you get out of bed, you will be assisted by the physiotherapist/nursing staff.
- You will begin to mobilise with a frame and then depending on your doctor's orders, you will progress to crutches or walking sticks. You will be taught to negotiate stairs. Emphasis is also placed on strengthening and re-educating the quadriceps muscles and improving the range of motion in the new knee.
- You must help the hospital staff to move in your bed, by using your arms and your un-operated leg, particularly when using a bed pan or for pressure care. The staff will teach you how to do this.
- **After discharge, the number one way to rehabilitate your new knee is to have a stationary bike in your own home.** The therapist can only help 1 or 2 times a week. Rehabilitation exercises need to be done by you, 3 times a day. We ask that you begin biking with no resistance 7 days after surgery, 10 minutes 3 times a day. **Motivation and compliance are the key to a successful recovery.**

ABOUT ANTI-EMBOLISM STOCKINGS

How do I care for my anti-embolism stockings?

Your stockings can be machine washed on a gently cycle or hand washed. Your stockings should last for at least 20 washes. They may be dried in a clothes dryer, in a stocking bag on a low temperature (not exceeding 20 degrees C) or simply hung to dry.

How am I measured for the right size?

Correct measuring is essential. The stocking size is determined by the ankle, calf and thigh measurement. Extra-long sizes are available for larger thigh circumferences. For leg deformities, knee length anti-embolism stockings are recommended where possible and/or as your doctor has requested.

Where can I buy another pair of stockings?

Most chemists now supply anti-embolism stockings.

What are the things that you should do?

Wash and dry your stockings when you are up and walking around. Check the knee break is in place (applicable only to full-length). Always put your stockings on first, then your



underwear to make toileting easier. Remove stockings completely when bathing. Make sure the stockings are smooth all over, never wrinkled.

What are the things you should not do?

Do not leave your stockings off overnight. Do not fold down the top of the below-knee-style like a pair of socks. Do not iron. Do not dry-clean. Do not expose to grease or oil (e.g. baby oil) as this will affect elasticity.

PRECAUTIONS TO BE TAKEN AFTER SURGERY:

Once you leave hospital, you may need to make some temporary adjustments to your lifestyle. Suggestions for consideration are as follows:

- Do you live alone? It may be advisable for you to consider a short time in a rehabilitation unit to gain fuller independence before returning home. Otherwise assistance from family or friends, community nurse or a home care agency may be wise to set.
- Does your home have a staircase? Your physiotherapist/doctor may advise that you limit use of the stairs in your first few weeks at home. It is wise to set up a bed on the ground floor, if you normally sleep on the first floor of your house.
- Do you have loose floor mats around the house? These can be hazardous for persons walking using aids such as crutches and should be taken up temporarily if possible.
- Transport: You should have the car parked in such a way so that doors can be fully opened. If you are a passenger use the front seat and push the seat back as far as it will go and increase the backward tilt if possible. Back up to the seat and rest the crutches on the car. Stand with your back towards the car. Sit back into the seat. Swing your legs into the car.
- Avoid travelling long distances in one go. Stop regularly and have a stretch.
- Driving may be permitted at approximately 6-8 weeks (when you have control of your leg to allow fast and comfortable transfer of the foot between pedals) but you must consult your surgeon first.
- Household Tasks: Set realistic goals, take frequent rests and use the resources in your home such as electrical equipment or assistance from family members where possible. Planning and simplification are the key words.
- Sport and Recreation: Ask your surgeon when and if you can resume your particular sport.
- Sexual Activities: May resume on the advice of your surgeon.
- Work: The speed with which you return to work will vary depending on the type of work and other factors. Discuss these with your surgeon.
- Avoid heavy work and excessive twisting or jarring.
- Dental work: If you have dental work or any other surgery, even minor, let your dentist or surgeon know about your prosthesis. You will need to take antibiotics prior to and after the procedure to reduce the risk of infection around the prosthesis.
- Flu Injection after surgery: It is safe to wait for a period of 4-6 weeks post-surgery before having any flu injection.

Do's

- Continue your exercises as you were shown in hospital.



Don'ts

- Avoid heavy lifting, jarring or carrying heavy loads.
- Avoid climbing ladders.
- Avoid twisting at the waist. Instead, take small steps to move yourself around.
- Avoid twisting on your operated leg. Always sit or stand with feet pointing straight ahead.
- Do not cross your legs in standing, sitting or lying down.
- Do not twist your leg, or pivot on it when turning, always keep your foot pointing straight ahead.
- These precautions apply for about three (3) months.

REPORT TO YOUR SURGEON:

Tell your surgeon or local doctor at once if you develop any of the following:

- Increased temperature (fever or chills).
- Calf/ankle swelling, increased pain or tenderness.
- Any bleeding from the incisions.
- Redness around an incision that is spreading or any other sign of infection.
- Nausea or vomiting.
- Worsening flexibility or inability to bend the knee/hip.
- Loss of mobility after a fall.
- Any concern you may have regarding your surgery.

When leaving hospital, you may need to acquire some of the following to assist you safely in your daily activities:

Walking stick, frame, raised toilet seat, shower chair, rails in the bathroom or on steps, reach, Meals on Wheels, home help. Your physiotherapist or the nursing staff can organise the purchase or hire of any of these items. Please ask about them prior to discharge.

What can I do and what shouldn't I do after surgery?

Patients can expect to be back to full activity within a few months after surgery. You can walk, fish, swim, go for long walks, dance, bowl etc. We discourage aggressive skiing, jumping (basketball), and extensive running activities (marathons are out). Your knee will do anything you ask it to but there are things that are not advisable.

When can I drive?

When you are off pain medication and you feel the leg muscles are back to full strength, typically 4 weeks. Having a manual transmission and clutch makes it tougher to get back to driving.

What kind of exercise can I do?

Biking is still the best. Water aerobics (after 4 weeks), walking, elliptical trainers, rowing machines, and even stair steppers are okay. You will work your way up to weight training after time. In the first few weeks just stick to the bike and then progress as you feel it is okay. This has been discussed later.

When can I expect to be back to work?



Depending on the job (manual labor or desk work) some will get back to work in 2 weeks. Usually you will begin to go back gradually, half days for example. Normally by 4-8 weeks you can be at full time and effort.

Can I kneel?

Yes. Although this is reported by some to be uncomfortable you can kneel on the new knee. This can take several months because the incision will be tender for a while. You may consider getting kneepads for garden work and other such activities to help relieve the discomfort.

When can I shower?

You will learn how to shower while in the hospital. The important thing is to keep your incision clean and dry. Clear plastic wraps with tape are sufficient. We will evaluate your healing at your post-op visit and further educate you. No bathing or soaking for 4 weeks after surgery.

Who do I call after hours and on weekends?

If there are any urgent concerns or questions that you may have during the after office hours (after 5:00pm) or on weekends, please call the hospital where your surgery was performed. For Private Hospital patients ask for the nurse in charge; Public Hospital patients should ask for the Orthopaedic Registrar on call. Every attempt should be made to contact my team during office hours to ensure prompt response and resolution. If there is an emergency please visit the nearest emergency department.

CARE TO BE TAKEN AFTER SURGERY

SELF CARE AIDS:

To help you carry out activities at home independently and safely you may need to temporarily alter the way in which you undertake such tasks as showering, dressing and toileting. The nursing staff and physiotherapist will discuss your home living environment with you and make suggestions for temporary adaptations where necessary.

Using the Toilet

More often than not, your toilet at home will be too low. An over-toilet aid will increase the height of the toilet making it easier for you to get on and off without bending excessively. These can be bought or hired from some chemists. This will be discussed at the clinic. If you are going to a rehabilitation hospital, they can assist you in hiring the necessary equipment.



Adjustable height toilet seat



Showering

Use a shower for washing in preference to a bath. In the recovery period it is not possible to get in and out of a bath safely. If you have a shower recess it is recommended that you shower whilst sitting on a high stool or chair. The installation of a handrail is to be considered. If your shower is over a bath, a bath board can be used providing that the bath is sufficiently deep enough that when you sit on the bath board you do not bend too much. A bath board is a wooden seat that sits across the top of the bath and is used in conjunction with a hand shower. When using a bath board, you do not need to step into and out of the bath. Hiring of bath boards is available through selected outlets; however, it is much safer to shower.



Handheld Shower

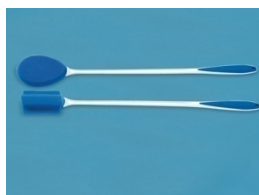
Extra Bathroom hints

To avoid slipping on the wet bathroom floor a good quality suction mat is a worthwhile consideration.

To avoid bending too much a long-handled brush may be useful when washing your feet. A long-handled toe dryer will enable you to dry your toes and the lower part of your legs. Using a soap-mitt, soap on a rope or placing soap into a pair of pantyhose which is tied to the shower taps will help to avoid the disaster of dropping the soap in the shower.



Long handled brush



Long handled toe washer

Dressing

Always sit down to dress or undress your lower garments such as trousers, underwear, stockings, shoes and socks. Dress the operated leg first, undress the operated leg last. To enable you to pull on heavy lower clothing such as trousers or slacks it may be useful to use 2 bulldog clips with 60 cms of tape tied to each end through the clip holes.

Slip-on shoes are preferable, using a long-handled shoe horn. A reach aid is a very useful item for dressing as well as for other tasks around the house which would otherwise require bending. A magnet attached to a reaching aid is even more useful.



Long handled shoe horn



Total Knee Replacement Exercise Guide

Regular exercise to restore your knee mobility and strength and a gradual return to everyday activities are important for your full recovery.

Your Orthopaedic surgeon and physical therapist may recommend that you exercise approximately 20 to 30 minutes two or three times a day and walk 30 minutes, two or three times a day during your early recovery. Your Orthopaedic surgeon may suggest some of the following exercises. The following guide can help you better understand your exercise/activity program, supervised by your therapist and Orthopaedic surgeon.

Exercises that should be started before surgery:

Commence these exercises before surgery so that you are accustomed to doing them. A member of the Nursing Staff or the Physiotherapist will assist you if you require help.

Breathing and leg exercises:

During your stay in our Hospital and particularly while you are confined to bed, it is of benefit to you to do certain exercises to maintain good circulation. Leg exercises, as described in the pamphlet, stimulate circulation of blood and the prevention of blood clot formation. Breathing exercises help to keep the lungs clear from any congestion and must be done in Hospital, especially when confined to bed after an operation and/or anaesthetic. The aim of breathing exercises is to avoid chest complications.

Breathing exercises

1. Sit as upright in bed (or chair) as possible and relax against pillows or chair back.
2. Take a long deep breath in through your nose and blow out strongly through your mouth, exhaling completely.
3. Repeat ten times then cough deeply to remove any secretions from lungs.

Coughing exercises: If you have an abdominal wound, before you cough, bend your knees and support your wound firmly with your hands as you cough. If you have any problem, call a member of our Nursing Staff for assistance.

Leg exercises

1. Circle the feet, keeping the legs still, five (5) times one way then five (5) times the other. Repeat five (5) times.
2. Point your toes to the foot of the bed then bring them back as far as possible. Repeat five (5) times.
3. Bend knees up and down alternately, as if pedalling a bicycle. Repeat five (5) times. Repeat these three exercises five times every hour.

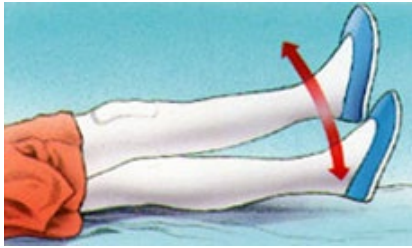
Early Postoperative Exercises:

Start the following exercises as soon as you are able. You can begin these in the recovery room shortly after surgery. You may feel uncomfortable at first, but these exercises will speed your recovery and actually diminish your postoperative pain.

1. ***Quadriceps Sets:*** Tighten your thigh muscle. Try to straighten your knee. Hold for 5 to 10 seconds. Repeat this exercise approximately 10 times during a two minute period, rest one minute and repeat. Continue until your thigh feels fatigued.



2. *Straight Leg Raises*



Tighten the thigh muscle with your knee fully straightened on the bed, as with the Quad set. Lift your leg several inches. Hold for five to 10 seconds. Slowly lower. Repeat until your thigh feels fatigued.

You can also do leg raises while sitting. Fully tighten your thigh muscle and hold your knee fully straightened with your leg unsupported. Repeat as above. Continue these exercises periodically until full strength returns to your

thigh.

3. *Ankle Pumps*



Move your foot up and down rhythmically by contracting the calf and shin muscles. Perform this exercise periodically for two to three minutes, two or three times an hour in the recovery room. Continue this exercise until you are fully recovered and all ankle and lower-leg swelling has subsided.

4. *Knee Straightening Exercises*



Place a small rolled towel just above your heel so that it is not touching the bed. Tighten your thigh. Try to fully straighten your knee and to touch the back of your knee to the bed. Hold fully straightened for five to 10 seconds. Repeat until your thigh feels fatigued.

5. *Bed-Supported Knee Bends*



Bend your knee as much as possible while sliding your foot on the bed. Hold your knee in a maximally bent position for 5 to 10 seconds and then straighten. Repeat several times until your leg feels fatigued or until you can completely bend your knee.

6. *Sitting Supported Knee Bends*



While sitting at bedside or in a chair with your thigh supported, place your foot behind the heel of your operated knee for support. Slowly bend your knee as far as you can. Hold your knee in this position for 5 to 10 seconds. Repeat several times until your leg feels fatigued or until you can completely bend your knee.



7. *Sitting Unsupported Knee Bends*



While sitting at bedside or in a chair with your thigh supported, bend your knee as far as you can until your foot rests on the floor. With your foot lightly resting on the floor, slide your upper body forward in the chair, to increase your knee bend. Hold for 5 to 10 seconds. Straighten your knee fully. Repeat several times until your leg feels fatigued or until you can completely bend your knee.

Early Activity:

Soon after your surgery, you will begin to walk short distances in your hospital room and perform everyday activities. This early activity aids your recovery and helps your knee regain its strength and movement.

1. *Walking*



Proper walking is the best way to help your knee recover. At first, you will walk with a walker or crutches. Your surgeon or therapist will tell you how much weight to put on your leg.

Stand comfortably and erect with your weight evenly balanced on your walker or crutches. Advance your walker or crutches a short distance; then reach forward with your operated leg with your knee straightened so the heel of your foot touches the floor first. As you move forward, your knee and ankle will bend and your entire foot will rest evenly on the floor. As you complete the step, your toe will lift off the floor and your knee and hip will bend so that you can reach forward for your next step. Remember, touch your heel first, then flatten your foot, then lift your toes off the floor.

Walk as rhythmically and smooth as you can. Don't hurry. Adjust the length of your step and speed as necessary to walk with an even pattern. As your muscle strength and endurance improve, you may spend more time walking. You will gradually put more weight on your leg. You may use a cane in the hand opposite your surgery and eventually walk without an aid. When you can walk and stand for more than 10 minutes and your knee is strong enough so that you are not carrying any weight on your walker or crutches (often about two to three weeks after your surgery), you can begin using a single crutch or cane. Hold the aid in the hand opposite the side of your surgery. You should not limp or lean away from your operated knee.



2. Stair Climbing and Descending



The ability to go up and down stairs requires strength and flexibility. At first, you will need a handrail for support and will be able to go only one step at a time. Always lead up the stairs with your good knee and down the stairs with your operated knee. Remember, "up with the good" and "down with the bad."

You may want to have someone help you until you have regained most of your strength and mobility. Stair climbing is an excellent strengthening and endurance activity. Do not try to climb steps higher than the standard height (15-18 cm) and always use a handrail for balance. As you become stronger and more mobile, you can begin to climb stairs foot over foot.

Advanced Exercises and Activities:

Once you have regained independence for short distances and a few steps, you may increase your activity. A full recovery will take many months. The following exercises and activities will help you recover fully.

1. *Standing Knee Bends*



Standing, erect with the aid of a walker or crutches, lift your thigh and bend your knee as much as you can. Hold for 5 to 10 seconds. Then straighten your knee, touching the floor with your heel first. Repeat several times until fatigued.

2. *Assisted Knee Bends*



Laying on your back, place a folded towel over your operated knee and drop the towel to your foot. Bend your knee and apply gentle pressure through the towel to increase the bend. Hold for 5 to 10 seconds; repeat several times until fatigued.



3. *Knee Exercises with Resistance*

You can place light weights around your ankle and repeat any of the above exercises. These resistance exercises usually can begin four to six weeks after your surgery. Use one- to two-pound weights at first; gradually increase the weight as your strength returns. (Inexpensive wrap-around ankle weights with Velcro straps can be purchased at most sporting goods stores.)

4. *Stationary cycling*



Stationary cycling is an excellent activity to help you regain muscle strength and knee mobility. At first, adjust the seat height so that the bottom of your foot just touches the pedal with your knee almost straight. Peddle backward at first. Ride forward only after a comfortable cycling motion is possible backwards. As you become stronger (at about four to six weeks) slowly increase the tension on the exercycle. Exercycle for 10 to 15 minutes twice a day, gradually build up to 20 to 30 minutes, three or four times a week.

Pain or Swelling after Exercise- You may experience knee pain or swelling after exercise or activity. You can relieve this by elevating your leg and applying ice wrapped in a towel. Exercise and activity should consistently improve your strength and mobility. If you have any questions or problems, contact your orthopaedic surgeon or

physiotherapist.