



Your new KNEE

*guide to knee
replacement*

INTRODUCTION

This guide has been written to inform you about aspects of your surgery. We believe that a patient who is well informed is more able to actively participate in their own recovery.

Knee replacement is a major surgical operation and should only be undertaken after conventional treatments no longer offer you relief. If you have any questions concerning your operation, please do not hesitate to contact the following:

Orthopaedic Ward	(02) 6627 9448
Orthopaedic Care Coordinator	(02) 6627 9448
Physiotherapist	(02) 6627 9600
Occupational Therapist	(02) 6627 9600

The Knee Joint

The knee is what is commonly referred to as a “Hinge” joint. It is the largest joint in the body and is able to move through a large range of motion.

The normal knee has smooth, closely matched joint surfaces lubricated by fluid which allows smooth, pain free movement. The diagram on the next page shows a normal knee joint.

Damage to joint surfaces may result from the following:

- ***Degeneration***

Osteoarthritis “general wear and tear”, normally seen in people over the age of 50.

- ***Inflammation***

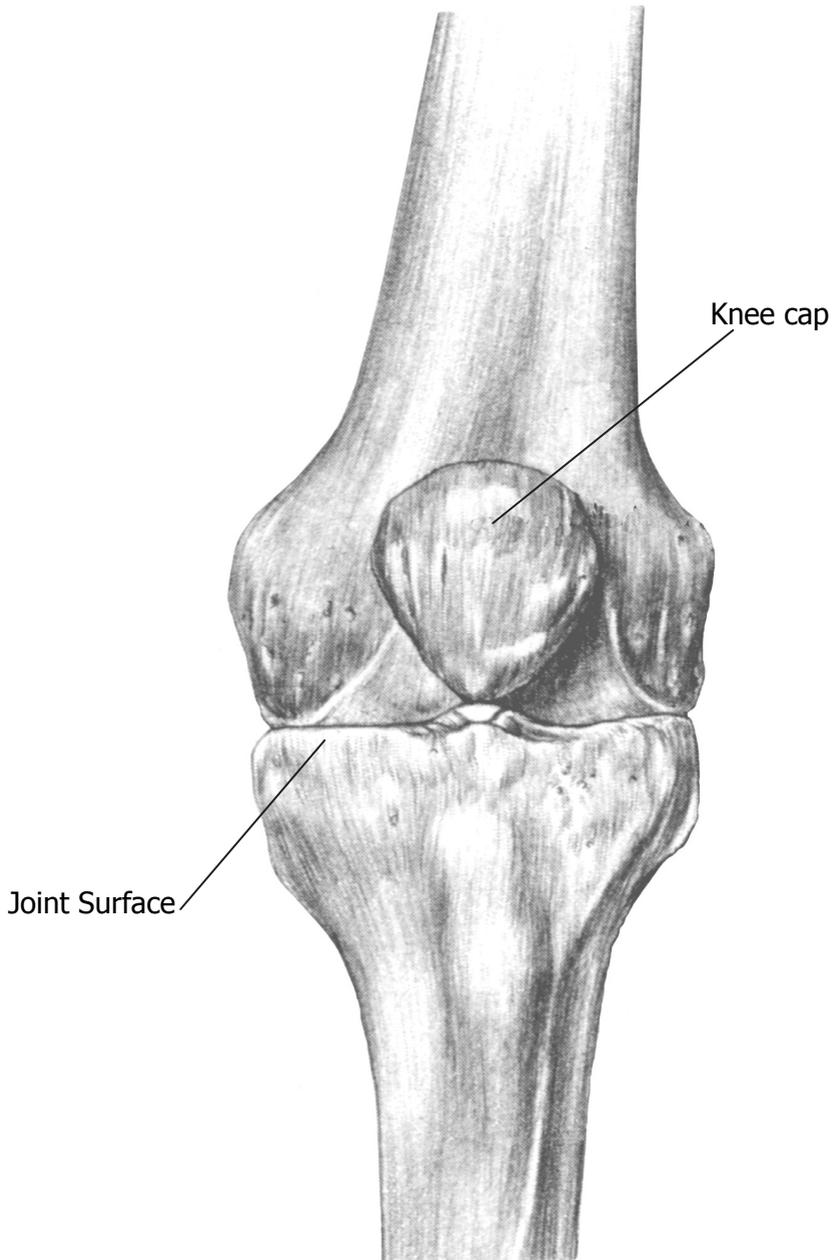
Rheumatoid Arthritis. An auto-immune disease affecting the lubricating fluid of the joint.

- ***Trauma***

Trauma to a joint may also lead to the development of arthritis. Mal-alignment of the bone surfaces may cause abnormal wear patterns, resulting in early osteoarthritis.

- ***Avascular Necrosis***

Poor blood supply to the joint surface leads to the death of bone tissue and the eventual collapse of the joint.



Total Knee Replacement

A large percentage of the community will develop knee problems to some degree. The majority are able to be successfully managed without surgical intervention.

Conservative treatment incorporates the use of medication, physiotherapy, weight control and/or modifying activities that cause pain.

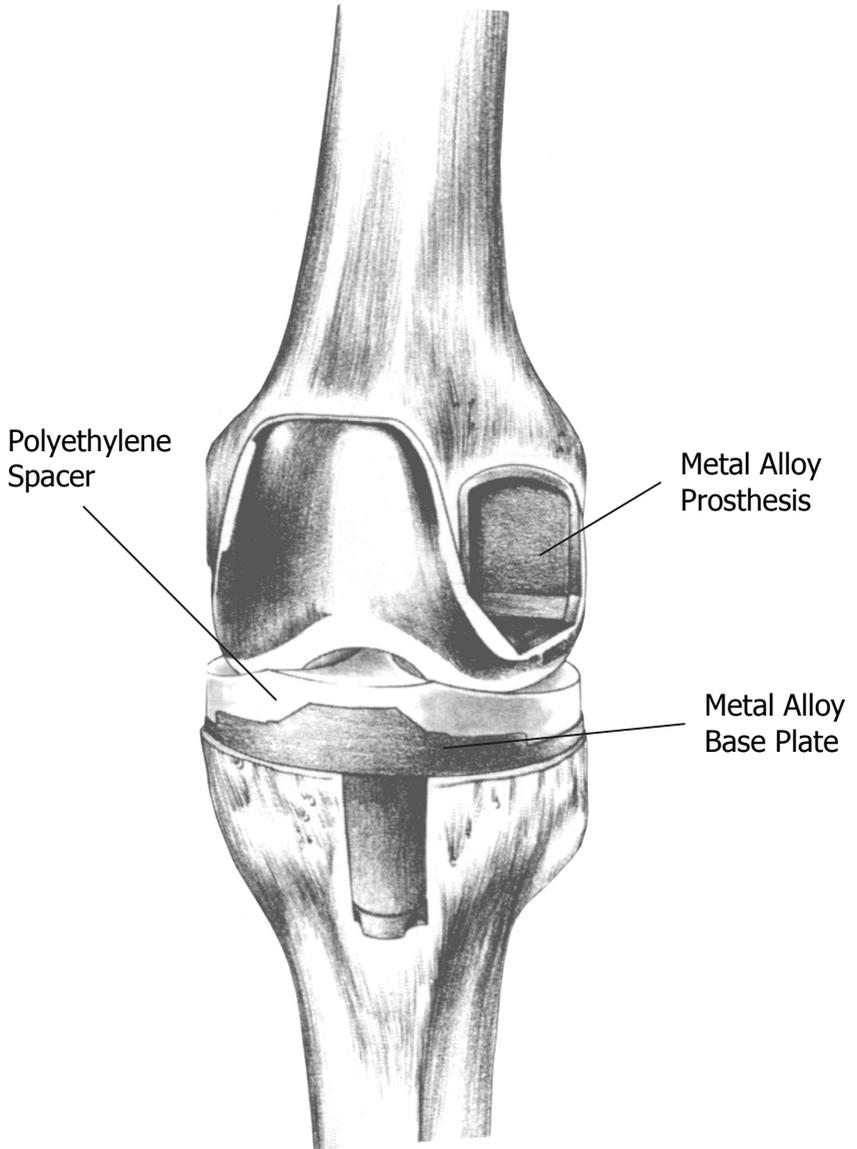
When conservative management no longer offers relief of symptoms, an operation may be required. Knee replacement surgery is designed to replace a knee joint which has been damaged to achieve:

- Relief of pain
- Improvement in mobility and quality of life
- A stable joint
- Correction of deformity

The operation replaces the worn ends of the femoral condyles and tibia with new parts.

The diagram on the next page shows a standard knee joint after replacement.

The joint components can be cemented or non-cemented, depending on your bone quality and your Surgeon's preference.



Admission

Booking your Admission

Your Surgeon will complete the admission documents to be forwarded to the hospital. The Surgeon will also explain your operation, including any risks, and complete a consent form. Necessary documents and financial arrangements need to be completed **prior** to admission. Details of your hospital fund, Medicare number or pension number are to be given to the hospital. You will be required to contact the hospital to confirm your booking on the last working day prior to admission. Phone the hospital after 2pm on (02) 6627 9223. At this time you will be informed of the scheduled time for your surgery and subsequent "nil by mouth" time. This means **nothing** to eat or drink, including water, prior to your operation.

Pre-Operative Fitness

Being as fit as possible before your operation will make your recovery easier and more successful. Consider starting an exercise or hydrotherapy program in the 6 weeks leading up to your surgery. A physiotherapist can assist with this. It will help to improve your general fitness, improve muscle strength and condition and familiarise you with post-operative exercises. If you smoke, why not take this opportunity to quit. If you are overweight, now could be a good time to try to lose some weight (but don't go on a crash diet immediately before your operation).

You and your family need to start making plans prior to admission as to how you will manage at home after discharge from hospital. If you foresee any difficulties, you can talk to the Care Coordinator, Nursing Staff, Occupational Therapist or Physiotherapist either prior to, or at the Orthopaedic Clinic.

(Refer to contact numbers on the introduction page)

Orthopaedic Clinic

St Vincents Private Hospital has an Orthopaedic Clinic which is compulsory for you to attend before your operation. Attendance at this Clinic will assist you to prepare for your surgery and discharge. This Clinic is run each Tuesday morning, two weeks prior to your admission. You will receive information by mail regarding the time, date and location of the Clinic. Accompanying this is a pathology request form for the testing of your blood and urine.

At the Clinic, you will have chest and knee X-rays taken. You will be assessed by the Occupational Therapist, Physiotherapist and Nursing staff. The Care Coordinator will review the results of your blood tests with you, and also provide information on aspects of your surgery, hospitalisation and discharge. The Care Coordinator will also discuss with you whether you will be admitted the day of your surgery or the night before. During this time you are encouraged to ask any questions you may have.

Medications

You may be required to ***cease*** taking anti-inflammatory medications and Aspirin ***one week*** prior to your surgery. If you are taking an anticoagulant (e.g. Warfarin), your Surgeon will need to advise you of pre-operative management.

Again, if you are unsure about your medications, please ask your Doctor, Nursing staff or Care Coordinator to clarify the matter for you.

Day of your Admission

Prior to your Admission

You will shower with the antiseptic solution prior to coming into hospital. Please do not use make up, perfumes or powders. All jewellery (except for your wedding ring) should be removed, along with nail polish and hair pins.

What items to bring to the hospital

- Relevant x-rays and / or test results (*without these images your Surgeon may not proceed with your proposed surgery*)
- Health fund number and details (if applicable)
- Medicare Card
- Pensioner Concession Card/Health Care Card / Commonwealth Seniors Health Card (if applicable)
- Safety Net Concession or Entitlement Card (if applicable)
- DVA Card (if applicable)
- A list of all current medicines (Medication Profile) provided by your General Practitioner (GP)
- All current medicines (excluding S8 medicine) in original packaging
- All authority prescriptions and other repeat prescriptions
- Hearing aids, walking aids, visual aids
- Comfortable closed in shoes/slippers with non-slip soles
- Night attire
- Toiletries
- Method for settling your account

It is advisable to leave any valuable items at home or in the care of a relative.

On Admission, Prior to your Operation

On admission, please proceed to the Admissions desk which is located inside the Avondale Avenue entrance of the hospital.

Your knee will be clipped to remove excess hair and you will be asked to change into a theatre gown. Special pressure stockings will be measured and supplied. Nursing staff will take your temperature, pulse and blood pressure, perform a routine urine test and bladder scan and check your skin for abrasions, cuts or inflamed areas.

A premedication may be given which will relax you and have a sedating effect. Due to these effects, you will be placed on a bed. Should you require assistance, push your Nurse Call bell. Otherwise you will be asked to wait in one of the waiting rooms until you are called for theatre.

Your Operation

Operating Theatre

When you have been prepared for theatre, you will be escorted to the theatre by the Nursing Staff. You will be taken to the operating room and met by an Anaesthetic Nurse who will check your identity and operation to be performed. From here, you will be taken to the anaesthetic room where preparation will be made for administration of the anaesthetic. Upon entering the operating room, you will notice it is cool, busy and often noisy.

After Your Operation

The Recovery Room

Following your surgery you will be transferred from the Operating Theatre to the Recovery Room where you will be cared for by skilled Nursing staff and members of the Anaesthetic Team. You will have an oxygen mask on your face and your vital signs will be monitored frequently as you recover from your anaesthetic. A dressing will extend along the surgical incision and you may have one or two surgical drains in place to remove any excess blood and fluid from the operation site. Foot pumps and/or calf compressors will be applied in the recovery room to help prevent blood clots. You will require fluid replacement and possibly a blood transfusion. The average length of stay in recovery is approximately one hour but this may vary significantly. When you are stable, you will be transferred to the Orthopaedic Ward.

The High Dependency Unit (HDU)

In some cases you may be transferred to the High Dependency Unit (located on level 3) prior to being transferred to the Orthopaedic Ward. This will be determined by your Anaesthetist. The purpose of your stay in the HDU is for close observation and continual nursing care.

As the HDU is a busy area, we request that you designate only one family member to phone the Unit on (02) 6627 9450. Close family may visit, but visits are best kept brief so you can get adequate rest.

Pain and Nausea

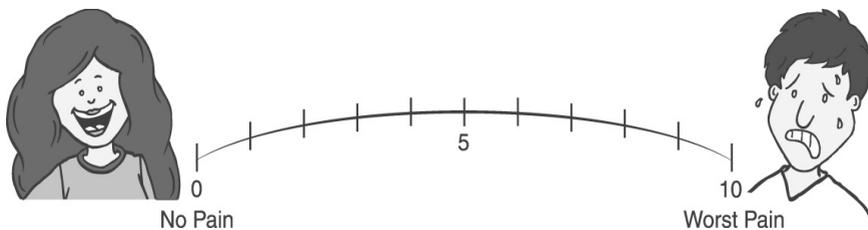
During surgery, nerve endings are cut and bruised. When this occurs, a message is sent along the nerve pathways to the brain. This message is interpreted as pain. Pain control is one of our greatest concerns after surgery. There are numerous means of managing surgical pain. We will use a combination of the following options to give you the best pain relief.

Pain Control Options

- ***Patient controlled analgesia (PCA)***
The PCA machine allows you to administer a set dose of pain medication by simply pressing the PCA button. You will be taught to use the PCA by the Nursing staff.
- ***Epidural pain relief***
Prior to surgery your Anaesthetist may insert a tiny threadlike tube into your back. Medication is injected into the tube to numb the area.
- ***Nerve blocks***
Your Anaesthetist may inject a local anaesthetic into the major nerves of your leg. This will eliminate pain and sensation.
- ***Local infiltration analgesia (LIA)***
During surgery a mixture of medicines may be placed directly into the tissues surrounding the knee.
- ***Oral medications***
These can be different types of liquids or tablets that are given at regular intervals. These may be given in conjunction with any of the above treatments.
- ***Ice/Elevation***
The combination of ice therapy and elevating your limb helps to reduce swelling and pain.

Scoring Your Pain

In order to give you adequate pain relief, it is extremely important that you tell the staff caring for you when you have pain. Please ask for pain relief before you get too uncomfortable. It is more difficult to ease the pain once it has taken hold. To assist in keeping your pain under control, you will be asked regularly to "score your pain". A number is used to describe the amount of pain you have. The numbers range from 0 to 10. 0 means no pain, and 10, the worst pain imaginable.



The advantages of having adequate pain relief are:

- It enables you to perform your exercises efficiently
- It will speed up your recovery
- It will improve your ability to obtain adequate rest
- It reduces complications

Nausea

You may be nauseated as a result of your anaesthetic or medications. Nausea can be effectively managed with the administration of anti-nausea medication. It is important that you inform the staff if you are experiencing nausea.

Your Goals

It is beneficial to set goals for each day to maximise your progress.

The Physiotherapist will visit you daily to assist you in becoming independent, safe and confident with:

- **walking with crutches or a wheelie walker**
- **your exercise routine**
- **bending your knee to 90°**
- **negotiating stairs**

Discharge from hospital depends upon these goals being achieved. This usually occurs between day 2 and day 4.

Goals for Day 1

Sit out of bed and go through your exercise routine with the Physiotherapist. Knee bend $\geq 65^\circ$

On day one you should have:

- your intravenous drip removed
- surgical drains removed pending Surgeon preference
- routine blood tests
- assistance with your daily hygiene
- pain relief requirements assessed
- observations performed regularly
- preventative treatment for clot formation
- ice therapy to reduce swelling
- dietary needs reviewed
- a knee x-ray pending Surgeon preference
- your progress reviewed by your Surgeon, Care Coordinator and Physiotherapist.

Goals for Day 2

Walk 20 metres with a walking aid, get in and out of bed and go through your exercise routine with the Physiotherapist. Knee bend $\geq 80^\circ$

On day two you should have:

- your observations performed regularly
- your independence encouraged where possible
- assistance with your daily hygiene
- surgical drains removed pending Surgeon preference
- pain relief requirements assessed
- ice therapy continued
- a normal daily diet
- a knee x-ray pending Surgeon preference
- your progress reviewed by your Surgeon, Care Coordinator and Physiotherapist

Goals for Day 3

Increase your mobility and negotiate stairs with the Physiotherapist. Continue your exercise routine. Knee bend $\geq 90^\circ$

On day three you should have your:

- observations performed regularly
- independence encouraged where possible
- daily hygiene attended with minimal staff assistance
- pain relief requirements assessed
- need for a laxative determined
- progress reviewed by your Surgeon, Care Coordinator and Physiotherapist

Goals for Day 4

**Be Independent with a walking aid, transferring in/out of bed, and continue your exercise routine.
Knee bend $\geq 90^\circ$**

On day four onwards you should:

- have your observations performed
- have your daily hygiene with minimal staff assistance
- be independent with all of your exercise program
- bend your knee to greater than 90°
- be able to manage stairs with your walking aid
- have adequate pain relief
- have your home modifications complete
- not be constipated
- have your progress reviewed by your Surgeon, Care Coordinator, Physiotherapist and Occupational Therapist.
- have your discharge date determined

On discharge, the Care Coordinator will:

- arrange to have your staples removed by your Surgeon, GP or Community Nurse.
- arrange an appointment with your Surgeon
- send a discharge letter to your GP
- be accessible to you for advice or support

Nursing staff are also available 24 hours a day if you require advice.

Physiotherapy



Physiotherapy is an essential part of your recovery following a total knee replacement.

Physiotherapy aims to:

- keep your chest clear
- provide an exercise program to improve the joint movement, strength and flexibility
- improve mobility and confidence with an appropriate walking aid

At the Orthopaedic Clinic, the Physiotherapist will assess your knee movement and strength. Your exercise program will also be reviewed at this time. Please practice it prior to your admission as this will assist your recovery. A list of exercises has been provided in this book.

The Physiotherapist will also discuss your recovery and progress goals following surgery. These goals have been listed on the preceding pages.

A "CPM" (continuous passive motion) machine may be used following surgery to improve the flexibility of your knee. The use of this machine is dependent upon your Surgeon's requirements.

How to go up and down stairs

Going up Stairs: Bearing Weight

1. Step up with good leg
2. Step up with operated leg
3. Bring crutches up (if using)

Going down Stairs: Bearing Weight

1. Place crutches (if using) on middle of step below
2. Step down with operated leg
3. Step down with good leg

How to use an Exercise Bike

The use of an exercise bike post-operatively can assist with improving range of motion in the knee, increasing strength, decreasing swelling and improving general fitness. When you first start, let all the tension off and put the seat up high. Place your heel on the pedal instead of the ball of your foot. You might only be able to rock forward and back initially. Don't be concerned if it takes several days or a week or two to achieve a full revolution. Start with 5 minutes, twice a day. Increase the time you spend on the bike as your range and comfort increases. **NB:** If severe pain or excess swelling occurs, reduce the amount of time spent on the bike. If persistent pain/significant swelling occurs, seek further medical advice.

Exercise Program

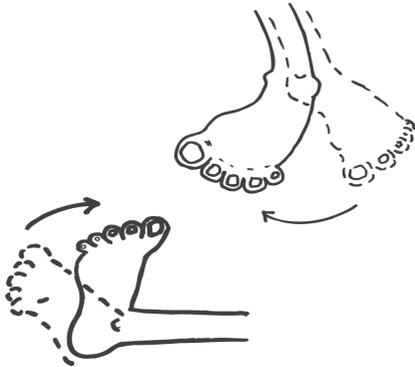
1. **Deep breathing & coughing exercises**

After your surgery, it is necessary for you to take 10 deep breaths every hour followed by a strong cough.



2. **Foot and ankle exercises**

Repeat 10 times each hour

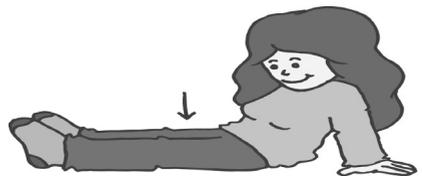


Move your ankles up and down and in circles.

3. **Static quadriceps**

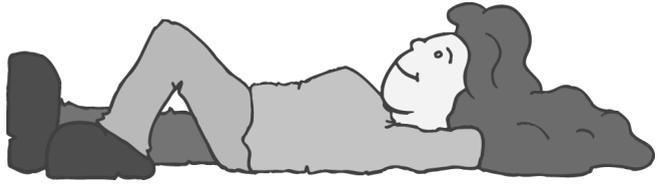
Repeat 10 times, 3 times a day.

Tighten the muscles at the front of your thigh by pushing the back of your knee into the bed. Hold the thigh muscle tight for 10 seconds.

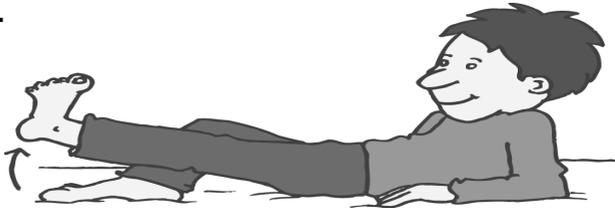


4. **Static Gluteal**
Repeat 10 times, 3 times a day.
Squeeze your buttock muscles together and hold tight for 10 seconds.

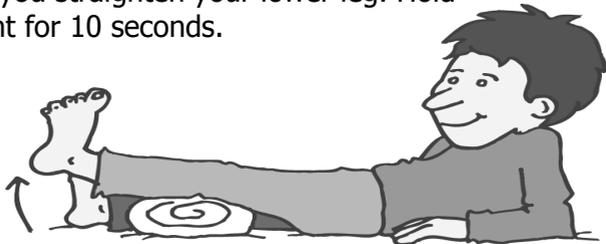
5. **Heel Slides**
Repeat 10 times, 3 times a day.
Slide your heel along the bed toward your bottom.



6. **Straight leg raise**
Repeat 10 times, 3 times a day.
Keep your knee locked and straight, lift your leg 20cm up off the bed.

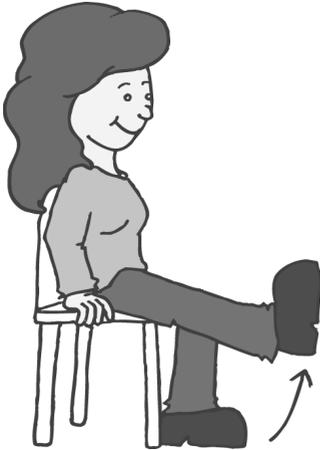


7. **Inner Range Quadriceps**
Repeat 10 times, 3 times a day.
Place a rolled towel under your knee. Push your knee into the roll as you straighten your lower leg. Hold your leg straight for 10 seconds.



8. ***Knee flexion & extension (sitting)***

While sitting in a chair, slide your foot back as far as possible under the chair to bend your knee to 90°. Repeat 10 times, 3 times a day.



9. ***Quadriceps through range***

Repeat 10 times, 3 times a day. While sitting, straighten your leg fully and point your toes towards the ceiling. Keep your thigh on the chair. Slowly lower.

10. ***Hamstring stretch***

Repeat 3 times, 3 times a day. While sitting, place your heel on a footstool to allow your knee to straighten.



Occupational Therapy

After the operation, you need to take special care of your knee. In order to do this, you will meet the Occupational Therapist at the Orthopaedic Clinic to discuss precautions. A home visit will be arranged if required prior to your admission to ensure that everything is ready for your return home.

The Occupational Therapist will also monitor your progress while you are in hospital and implement additional services as required.

The Occupational Therapist can organise modifications such as:

- Rails at stairs & ramps
- Rails in toilets or bathrooms
- Raising the height of chairs and beds



Equipment such as:

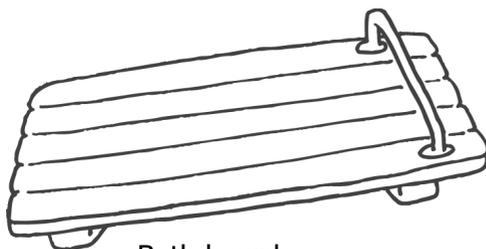


Shower Chair

- Over-toilet aid
- Shower chair or stool
- Bath board
- Lounge chair
- Urine bottles
- Long handled "reacher"



Toilet Aid



Bath board

Community Services such as:

- Home care
- Meals on wheels
- Community transport
- Assistance with showering



Long handled "reacher"

Equipment Hire and Loan

Some equipment can be hired from St Vincents Hospital for a fee. For other equipment you will be advised on hire/loan options in your area.

The Occupational Therapist will also discuss any difficulties you may have with activities of daily living, such as dressing, showering, toileting, transport, future work situations and recreation. Advice and training can be provided to you. Begin thinking now about how you will manage tasks when you are discharged from hospital.

For example:

- Reorganise your pantry to raise frequently used items to waist height to eliminate the need to bend
- Store two or three saucepans on the hotplate instead of in the bottom drawer or low cupboard
- Prepare and freeze some meals to reduce the workload later
- Remove and store loose mats as these are a major trip hazard
- Review your current footwear and select slip-on shoes with non-slip soles
- Reorganise furniture to provide a safe path of travel



Complications

Blood Clots

A blood clot may occur when blood flow becomes sluggish within the veins of the lower limbs, leading to clot (thrombosis) formation.

The symptoms of a blood clot may include pain, redness and/or swelling in your lower leg.

These steps are taken to decrease your risk of developing a blood clot:

- Lower limb exercises (e.g. foot & leg exercises)
- Early mobilisation
- Anti-thrombolytic support stockings
- Anticoagulant medication
- Sequential Compression Device i.e calf compressors or foot pumps

Infection

Infection is a risk with any surgical intervention because it involves the disruption of your main defence against infection: your skin. The following steps are taken to decrease your risk of infection after surgery:

- Keeping your dressing intact
- Antibiotics (only if specified by your Surgeon)

Knee Stiffness

Physiotherapy exercises **MUST** be continued after surgery and discharge. Ongoing physio will help to avoid/prevent knee stiffness. In most cases you will be referred for out-patient Physiotherapy on discharge. Your therapist will help to organise this for you. If knee stiffness does occur, your Surgeon may be required to perform further surgery.

Swelling

Swelling post-operatively is normal and can be expected intermittently for up to 3-6 months after surgery. Regular ice packs (at least 3 times daily) in the first few weeks will help to reduce and control swelling. Apply ice packs for 20-30 minutes at a time and change the position of the ice pack every 5-10 minutes. Elevation will also help to control and reduce swelling. Ideally the affected joint should be higher than your heart to maximize the benefits.

Going Home

Pain Medications

Before you leave hospital, the Pharmacist will provide you with enough medication to last you for about one to two weeks. If you continue to require pain medication for more than two weeks, it is best to be reviewed by your GP, or contact your Surgeon. Pain medications aim to allow you to walk and exercise effectively with a controlled level of discomfort/pain. Remember that the amount of pain you are trying to control is when you are walking and exercising, not when you are at rest. Alternate methods of pain relief include using ice packs and elevating your leg to reduce swelling.

Wound care

Your dressing should remain intact until the clips or sutures are removed around day 10 to 14 depending on Surgeon preference. Arrangements for removing the clips or sutures will be made prior to discharge by the Care Coordinator.

Symptom Alert

You may experience lower leg swelling up to 6 months after discharge. If this occurs, sit or lie down and elevate your leg.

Contact your Surgeon if you have any concerns. For example:

- An increase in pain
- Any swelling not reduced by elevation
- Wound separation or discharge
- Elevated temperature and a reddened wound
- Pain in your calf
- Difficulty breathing

Outpatient Physiotherapy

In most cases when you are discharged from hospital, you will need to have follow-up Physiotherapy organised. A Physiotherapist will discuss options with you both at the Orthopaedic Clinic and while you are in hospital. Outpatient Physiotherapy may include:

- Visits to a private clinic or public hospital
- Participation in a Day Rehabilitation Program
- Hydrotherapy (only after receiving permission from your Surgeon)

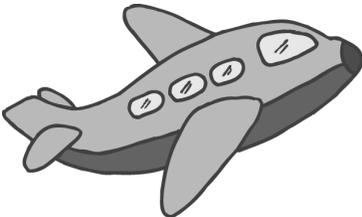
Walking



For the first 6 weeks after your operation your walking aid should be used unless otherwise specified by your Surgeon. The amount of weight bearing allowed during this time would have been discussed with you by the Physiotherapist and Surgeon before discharge. Keep walking within moderation. Gradually increase the amount of walking that you perform daily. At your 6 week follow up appointment, your Surgeon will inform you about any walking aid you may still need and the extent to which you may weight bear.

Driving

By law you are not allowed to drive for 6 weeks after your operation. If you need to drive within six weeks of your operation, you are required by law to sit for a driving test with the Roads and Maritime Services.



Travel

Avoid sitting for long periods to prevent your leg from swelling. Wear your special pressure stockings and do your ankle exercises if you have to fly anywhere.

Sex

Sexual activity can usually resume as comfort allows. Ask the Occupational Therapist or Nursing Staff if you have any questions.

Swimming

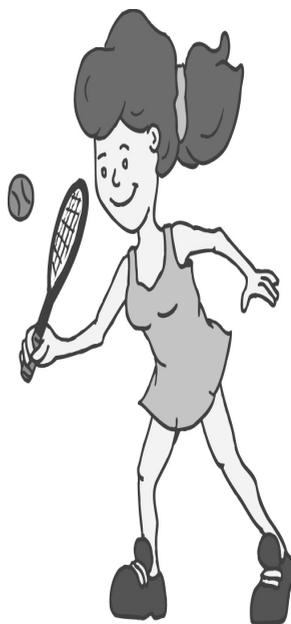
Swimming is an acceptable form of general exercise, however, it is NOT allowed until clips or sutures have been removed AND your wound is fully healed. The swimming pool must have safe access (i.e. ramp or stairs).

Other Activities

During the first 6 weeks after your surgery, we recommend limiting your activities to walking with your walking aid, riding an exercise bike at low tension and your exercise program.

In general, after 6 weeks we encourage you to walk more independently to build up your strength, possibly with the assistance of a walking stick.

We also recommend that you refrain from more active pursuits such as golf and social tennis until 3 months from the date of your surgery or as directed by your Surgeon.



***Note: If more clarification is needed,
please speak to your Surgeon.***

Antibiotic Alert



Because your new knee is made of foreign material there is always a low risk of infection settling around the prosthesis.

If you ever have any active infection (skin, urine, chest or other infection), it is important to seek an urgent review by your local doctor. If you are unable to contact him/her, then go to your nearest public hospital for attention.

If you require a dental procedure or other operation it is important that you have antibiotic cover. Remember to inform the Surgeon and Anaesthetist performing such procedures in advance that you have an artificial knee joint.

Discharge Checklist

Expected date of discharge: _____

<i>Appointments</i>	Yes	No	N/A
• Local GP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Surgeon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Community services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Physiotherapy</i>			
• Copy of exercise program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Outpatient Physiotherapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Wound Care</i>			
• Care of wound explained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Medications</i>			
• Pharmacist review	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Own medications returned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Scripts supplied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>X-Ray</i>			
• All X-rays returned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Equipment</i>			
• Supplied & deposit paid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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