GRACE
HOSPITAL

Total Knee Joint Replacement

A publication in collaboration with:

Grace Orthopaedic Centre
MUSCULOSKELETAL SURGERY AND MEDICINE

Physio @ Grace

This information booklet will help you, your family and friends prepare for your surgery. It will also help you to plan for your hospital stay and explain how to take care of yourself in the weeks following discharge.
Grace Hospital Phone: 07 577 5270

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Patient check list for Day of Surgery

Blood tests completed ☐

Chlorhexidine sponges ☐

Betadine nasal swabs ☐

Pre-op drink ☐

Nil by mouth instructions followed ☐

Usual medication instructions followed (as below) ☐

Specify Medication Instructions (Completed by Pre-assessment Nurse)

Day and date of surgery_____

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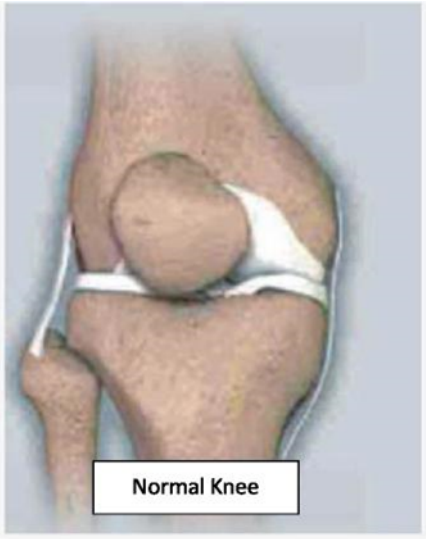
Introduction

The knee joint

The knee joint is a weight bearing joint comprising of three bones:

- The lower end of the **femur** or thighbone and the upper end of the **tibia** or shin bone which rotate on each other.
- The **patella** or kneecap which slides up and down in a groove.



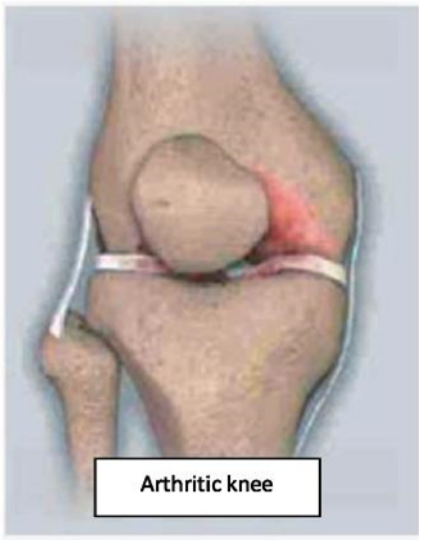
The ends of the femur and tibia, and the under-surface of the patella are covered by articular cartilage which allows the joint surfaces to move with ease. In between the femur and tibia is the meniscus (a type of cartilage) which acts as a shock absorber. Surrounding the whole joint is the joint capsule which is lined by synovial membrane which releases synovial fluid to lubricate the joint.

There are four main ligaments in the knee:

- There are two **cruciate** ligaments which stop the thigh and shin bones sliding forward and back on each other and
- Two **collateral** ligaments which limit sideways movement in the knee.

In a healthy joint, these parts all work collectively, allowing you to move efficiently and without pain. A painful knee can severely affect your ability to lead a full active life.

Arthritis

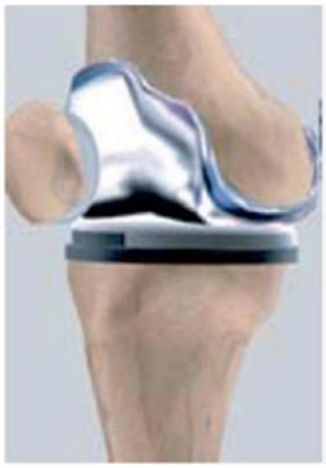


Arthritis is the most common cause of chronic knee pain and disability. It can present in different forms including Osteoarthritis, Rheumatoid Arthritis, and post Traumatic Arthritis.

Osteoarthritis is the most common form of arthritis and normally occurs after age 50. It has often been called ‘degenerative arthritis’. The articular cartilage which cushions the bones, wears away, causing the bones to rub together, and causes the joint to become painful and stiff.

Rheumatoid arthritis is an inflammatory illness. The joints become inflamed and there is excess production of the synovial fluid. The inflammation can cause pain, and as it progresses causes damage to the articular cartilage.

Post traumatic arthritis can occur following a major accident or injury involving the knee. Damage to the ligaments or a fracture involving the bones can damage the articular cartilage and over time, cause knee pain.



Knee joint replacement surgery

This is a surgical procedure where the surfaces of your natural joint are replaced with artificial surfaces. The diseased or damaged portions of the joint are replaced with a new prosthesis to restore function. The new joint may involve resurfacing of the patella if required. The replacement is usually made with high grade metals, plastics and/or ceramics.

A partial (unicompartmental) knee replacement may be done if damage to your knee is confined to one area. The rehabilitation period is usually faster.

Knee replacement surgery aims to improve both the pain and the function of your knee. While the improvement should enable you to walk in comfort, it is unlikely that full movement will be restored. You should be able to bend your knee sufficiently to go up and down stairs and get in and out of the car.

The information in this brochure is not intended as a complete medical explanation and further information is available from your Surgeon.

Complications

There is a possibility of complications after any type of surgery. Below is a list of complications that can occur following knee joint replacement surgery.

Infection

- Superficial infection which affects the outer layers of the wound and usually heals without any treatment or a short course of oral antibiotics.
- Deep infection is when the deeper layers of the wound are involved. This can occur in <1% of patients. This usually necessitates further surgery and may require removal of the artificial joint so that the infection can be treated with antibiotics.

Blood clots

Blood clots can occur in patients undergoing surgery on their legs. Most patients don’t know they have a clot, but some patients will develop pain in the calf, swelling of the leg and occasionally the clot will move from the leg to the lungs and cause discomfort and shortness of breath. We take special precautions to minimise this happening, but it is important for you to follow treatment guidelines to prevent blood clots occurring.

Urinary retention

You may have a catheter (small tube) inserted into your bladder at the time of surgery. Following removal, some patients may experience urinary retention and the catheter may need to be reinserted until you are able to manage independently again.

Blood transfusions

A joint replacement can result in blood loss that may require a blood transfusion. We check your blood count after surgery to monitor your need for blood transfusion. Your Surgeon and Anaesthetist will discuss this with you pre-operatively. If a blood transfusion is needed, it will be discussed with you, and further reading material provided to inform you of the risks and benefits.

Loosening

An artificial joint may loosen over time, however in New Zealand, 92% of total knee joint replacement will still be functioning well at 16 years after surgery. If loosening occurs, another operation may be required to revise the joint.

Other complications that may occur relating to your knee surgery are pain, stiffness and neuro-vascular complications. Medical complications related to surgery include myocardial infarction (heart attack), chest infection, bladder infection and CVA (stroke).

Further information about the complication of knee joint surgery can be discussed with your Surgeon.

Before Admission to Hospital

Your consent is needed for all your treatment while you are in hospital.
Usually your treatment is verbally agreed between you and your Surgeon. However, written consent is needed for your operation and anaesthetic.

Before you sign the consent form it is important that you understand the procedure, benefits and risks of the operation. Talk to your Surgeon or the hospital staff if you are unsure about any aspect of your surgery.

Before your admission for surgery, we will assess your general health

- Blood tests will be required
- You will be asked to attend a pre-assessment appointment with your Anaesthetist. Please bring all of your medications and any health supplements in their original packaging with you to this assessment, or bring a pharmacy list with all the current medications you take.
- Some medications and/or health supplements such as those that thin the blood may need to be stopped a few days prior to surgery. Confirm this with your Surgeon or Anaesthetist.
- You will also be contacted by Grace Hospital for a pre-assessment appointment with a nurse and a physiotherapist 1-2 weeks before surgery. This may be coordinated with your anaesthetic pre-operative assessment. This will take up to 2 - 3hours and will prepare you for your surgery and hospital stay. You may bring a support person with you. It is also an opportunity to ask any questions you may have.
- Hire equipment required for home will be discussed and it may be available for you to take home at this stage. A refundable $50.00 bond for the equipment is required (this is separate from the hire charge for equipment).

Before admission what you can do to help...

- Try to improve your general health before your operation.

- **Avoid chest infections** (stay away from people with coughs and colds) and give up smoking at **least two weeks** before the operation date. Grace Hospital staff can assist you with a smoking cessation programme which includes nicotine patches, lozenges or gum.

- If you drink **alcohol**, cut down or stop before your surgery. Alcohol can add to the risk of developing confusion following an anaesthetic.

- Surgery may be cancelled if you have any **source of infection** such as ulcers, tooth problems, sores or open wounds. Please see your GP or dentist if you have any of these. Notify your Surgeon before admission if you have any concerns.

- If you have long-term conditions such as hypertension or diabetes please make sure these are well controlled prior to your surgery. Your Primary Health Care Provider/ GP can help you with this.

- **Regulate your weight**. If you are overweight it makes the surgery more difficult. Recovery can be more difficult as well as you have more strain on your muscles and joints. It can be hard to lose weight, especially if you have reduced mobility, but exercise and changes to your diet can reduce your chances of complications after surgery.

- **Swimming and cycling** are good activities if your painful joint allows this.

Plan Your Discharge Home

Your anticipated length of stay in hospital is 1-2 nights. We aim to have you confident and capable of mobilising independently with crutches, able to get in and out of bed, shower and toilet and dress on your own before returning home. The Physio will teach you how to get up and down stairs with crutches. **Discharge is at 10am so please ensure your transport home is arranged for this time.** It is important that you prepare for your discharge home.

- **Organise your home.** An appropriate firm upright armchair is necessary (not too low). If you do not have one, please discuss suppliers with your Physiotherapist at your pre-assessment appointment.

- Check that your **bathroom is safe**. A non-slip mat and a handrail can be useful. If your shower is over a bath, it is advisable that you discuss managing this with your Physiotherapist while you are in hospital.

- **Remove rugs or electrical cords** from areas where you will be walking. Rearrange furniture to give you open space to walk in.

- Review the **access and entrance** ways you have to your home. Check the number of steps into your home and the number of stairs inside your home if you have any.

- **Arrange things in your home**, and in particular the kitchen, at bench height. Place items that you use frequently at arm level, so you don’t have to bend down or reach up.

- Consider **making and freezing meals** prior to coming into hospital, to have on hand when you return home.

- **If you live alone**, we strongly recommend you organise a family member or a friend to stay with you for a week or two after discharge. This is to provide you with extra support and assistance that you will need as you recover from your surgery. Alternatively, you may wish to consider having a period of convalescence at a rest home before returning home or arrange for a private caregiver. This must be arranged **prior** to your admission.

- **District Nursing Services** are only able to be provided in certain situations. At pre-assessment, your Nurse will give an indication of whether you are likely to meet the criteria for this service.

- **Arrange pain relief tablets**. Your Pre-assessment Nurse will advise you about medications that you should purchase and have available for use at home for after discharge, e.g., Paracetamol tablets.

- **Organise transport.** You will not be able to drive yourself for about six weeks after surgery so you will need to organise a driver or alternative transport. Discuss this with your Surgeon for your individual circumstances. Once you can walk unaided for about 20 minutes you should be fine. Insurance companies will not cover motor vehicle accidents caused by patients who have had total knee joint replacements who are not fully mobile.

Plan your hospital stay

- **Clothing:** We recommend you bring soft, stretchy, comfortable underwear and day clothing with you for 1 to 2 days. We will assist you to dress the day after your surgery, and anything too tight or firm may not be comfortable. Some swelling to your knee area is expected after surgery, so clothing that fits loosely around your waist and legs is ideal, such as shorts, skirts, or track-pants. Comfortable night wear is important as well (men may consider a nightshirt instead of pyjamas).

- **Footwear:** Bring footwear that is the least restrictive, as feet can swell post operatively and make your footwear too tight. Scuffs are not recommended as these may increase the chance of tripping. Slippers are **not** essential while in hospital, it is fine to walk barefoot.

- **Toiletries:** Bring your usual toiletries with you.

- **Entertainment:** A television is available in your room and in the patient lounge with sky channels. Wireless broadband connection is available for on-line activities such as checking emails etc. on your own device. Please ask the reception staff on arrival for a Wi-Fi password

- **Medications:** Please bring all your regular medications (including inhalers) in their original packaging, if possible, or in their blister packs if this is how they are packaged. A list of your current medications from your pharmacy or GP is also helpful.

- **Equipment:** You will require crutches, maybe a raised toilet seat and perhaps a ‘helping hand’ device to assist you in your recovery. These will be discussed by your physio at pre-assessment and advice about short term hire given.

The day before surgery

Your Pre-assessment Nurse will give you Chlorhexidine sponges for showering and iodine nasal swab sticks please follow your specific written instructions for each.
Refer to Grace Hospital website to view instruction videos,
https://www.gracehospital.co.nz/Specialties/orthopaedics

If you have received pre-op drinks, please follow the specific written instructions.

The day of surgery

- Please follow your written instructions for showering and application of nasal swabs. Please use a clean towel and wear clean clothes to your admission.
- **Unless otherwise stated**, you are **not** allowed to have any food for six hours before your anaesthetic (this includes milk, lollies and chewing gum). You can have water up to two hours before your admission time.
- If you have pre-op drinks, you will be advised of the time to drink the second drink. Do not drink this after the time notified to you.
- Your Anaesthetist or the Pre-assessment Nurse will have instructed you on which of your usual medications you should take before admission (if any). Remember to bring all your normal medications with you.
- Please report to the main reception at Grace Hospital at the time you have been instructed to.
- We realise this can be a stressful time and our staff will make every effort to keep you comfortable and informed.
- An admitting nurse will recheck all your written information and prepare you for surgery. Part of your preparation may be clipping the hair over your operative site.
- Bring your consent form for surgery if you have received one (your consent form is not included in the online patient questionnaire; if you have completed your questionnaire online, please ensure that you bring your paper consent form).

Waiting for surgery

- Once you are in your gown and prepared for surgery, you will wait in your bed in our preoperative area. You will usually wait for 1 – 2 hours before you are taken through to the operating theatre. You are welcome to have a family member or friend wait with you.
- Your Surgeon, Anaesthetist and Theatre Nurse will carry out final checking procedures with you prior to your surgery. Your Surgeon will mark the operation site with a marker pen. Your Anaesthetist will also go over your anaesthetic consent which you can then sign if not already completed.
- You will walk or be wheeled to theatre where you will be cared for by the theatre team. They will assist you and ensure you are comfortable and safe throughout the procedure.

In Theatre

- The theatre team will introduce themselves and begin preparing you for surgery. Your Anaesthetist will insert an IV line into a vein in your arm so that medication and IV fluids can be given during surgery. Your Anaesthetist will have given you an explanation about the kind of anaesthetic you will receive, such as a spinal or general anaesthetic.
- The theatre team will be by your side during surgery and keep you positioned safely and comfortably.

In Recovery room

- You will be taken to the recovery room until you are ready to go to the ward. Nursing staff will take your blood pressure, pulse and temperature and check your wound at regular intervals.
- You will be given additional oxygen initially through a mask or plastic tubing that sits just inside your nostrils. You will have fluids through the IV line or ‘drip’ in your arm and you may have a urinary catheter (a plastic tube inserted in theatre to drain your bladder).
- If you have had a spinal anaesthetic, you will have reduced sensation and movement in your legs. This will gradually wear off over the next few hours.
- You may have a femoral nerve infusion which will provide pain relief and reduced strength in your operated leg.
- It is important that you tell your Nurse if you are experiencing pain so that it can be managed and to keep you as comfortable as possible.
- Nurses will also remind you to carry out exercises to prevent complications and enhance your recovery.
- There will be ‘foot-pumps’ on your feet. Foot-pumps are designed to reduce your risk of developing a post-operative Deep Vein Thrombosis (DVT) by assisting circulation of blood from your lower legs.

Once you are in the Ward

- Your family or nominated contact person will be notified and able to visit you.
- The nursing staff will monitor your vital signs regularly and check your wound and your circulation frequently.
- Your pain will also be monitored by the nursing staff. While some discomfort is expected, it is important to tell your Nurse about an increase in your pain level so it can be adequately controlled. In addition, if you feel sick (nauseated) let your Nurse know so that this can be managed with medications.
- The nursing staff will assist you to change position in bed to prevent pressure areas from forming and you will be reminded to do your deep breathing and ankle exercises. Several hours after your surgery, the nurses will assist you to sit on the side of the bed, stand and take a few steps.
- You will have an IV line or 'drip' in your arm to make sure you have sufficient fluid. You will be given antibiotics and possibly pain relief through the IV line which will be removed when you are able to eat and drink normally. You will be given small amounts of fluid and a light meal on the day of surgery.

The day after surgery (Day 1)

- You will be seen by your Surgeon, Anaesthetist, Physiotherapist and Nurses. You will have a blood test taken.
- Your Nurse will continue to monitor your vital signs and discuss your pain levels with you. While some discomfort is expected, the nurses will provide pain relief medication to help control your pain. You will be given medication for the prevention of blood clots and the foot-pumps will continue while you are in bed.
- Your drip will be stopped, and you will be able to eat light meals and drink normal amounts of fluid.
- If you have a catheter draining your urine, it will be removed early in the morning.
- You will be reminded about your exercises and any precautions.
- The nurse or the physiotherapist will assist you getting out of bed. You may be able to have a shower or will be assisted with a wash. You will be assisted to dress in your own clothes. The physiotherapist will supervise you walking with crutches or necessary a frame may be used initially.
- Regular ice packs will be used to minimise swelling and bruising that may occur.
- Ear plugs are available if you are a light sleeper, just ask your Nurse.
- Your plans for managing at home will be confirmed.

Day of Discharge

- You will be seen by your Surgeon, Anaesthetist, Physiotherapist and Nurses.

- Your Nurse will check your surgical site, vital signs and measures for the prevention of clots will continue. You will be offered laxatives to keep your bowels regular. Your Nurse will show you how to start managing your pain relief and you will be asked to keep a record of this in the pain management diary at the end of this booklet.

- You will be able to have a shower and dress in your own clothes. If you need assistance please ask. You will be able to spend longer sitting out in your chair. Your Physiotherapist will continue to progress you through your exercises and mobility. You will be assisted to complete your activity diary at the end of this booklet.

- You will be encouraged to gradually increase your walking distance and frequency and should be able to manage elbow crutches.

- Your plan for going home will be confirmed with you. All your arrangements for equipment, transport and support should be in place.

- You will be able to go home today. Your Surgeon, Physiotherapist and Nurse will discuss this with you. You should feel confident that you are able to be more independent today with personal activities and mobility.

- Your Physiotherapist will instruct you and assist you to practice going up and down stairs with the crutches.

Discharge information

- Together with your Surgeon, Physiotherapist, and the nursing staff, you will complete arrangements for going home. Congratulations! You have a new knee, and you will be independent with mobilising now.
- Included in your discharge paperwork will be a Discharge Summary with basic care instructions, follow up appointment card and prescription for pain medication which you can take as required. Your Surgeon will discuss on-going DVT (clot) prevention measures and wound management with you. Please ensure you discuss all aspects of your home care with your Nurse to ensure you feel confident with all arrangements.
- Any equipment required for use at home should have been arranged by now, and if the hire bond has not been paid prior, it must be paid prior to discharge ($50).
- Your Nurse will assist you to your car, and help you get into your car safely.
- Air travel is not recommended for six weeks.
- Contact your Surgeon's rooms (during business hours) or Grace Hospital if you have any concerns. Grace hospital will contact your Surgeon with your concerns if they are unable to help you.

Once you are Home

Wound care

- Your Nurse will have advised you regarding your Surgeon's preference for wound care once at home. It is important to keep the wound clean and dry.
- Once your wound or incision line is healed you can wash the wound in the shower gently and pat dry with a clean towel. Please avoid bathing.
- If your wound is discharging fluid after a couple of days at home, contact your Surgeon's rooms. If it is outside of business hours you can contact Grace Hospital for advice.
- Showering is fine, please avoid bathing.
- If you have steri-strips on your wound, remove them if they become loose or lift at the edges. If you have sutures or staples, your Nurse will have advised you about arrangements for removal.

Constipation can be a problem

Constipation occurs when bowel motions become drier or harder than normal and are more difficult to pass. For some people, a bowel movement every day is normal, and for others it is one every three or four days.

Symptoms:	**Likely Causes:**
• Straining to pass a bowel motion • Small, hard bowel motions • Less frequent bowel motions • Pain when passing a bowel motion • Stomach cramps or bloating	• Fasting for your surgical procedure • Limited intake of food • Eating different foods from your usual diet • Not enough fibre or roughage in your diet • Not drinking enough fluid • Lack of exercise or mobility • Not responding to the urge to have a bowel motion • Medications – many pain relief tablets contribute to constipation

As you can see, there are many reasons why you may become constipated after a surgical procedure.

Things you can do:

- Increase your fluid intake to 1-2 litres/day;
- Try some dried fruits like apricots, prunes, or sultanas, which will absorb liquid and soften your bowel motions;
- Fresh fruit such as kiwifruit encourage bowel activity;
- Go for short walks;
- Try to respond to the urge to pass a bowel motion.

It is important not to wait too long before you seek assistance with constipation.

If you are experiencing any of the symptoms above, you should visit your pharmacy and explain that you have recently had surgery, and that you require treatment for constipation.

Treatment:

Your Surgeon may prescribe a laxative for you if anticipate that constipation may be a problem after your return home:

- Oral laxatives – these come in different forms, e.g., tablets, granules, liquids. Your pharmacy will be able to recommend the best type for you. Some medications work by softening your bowel motion, others by stimulating your bowel.
- Suppositories and enemas – for more stubborn constipation, you may need something to help remove very hard bowel motions, and your pharmacist may recommend these for you.

Deep Vein Thrombosis (DVT)

A DVT is a blood clot that may form in one of the large veins of the body. DVTs happen more commonly in the legs. The blood clot may partly or completely block the flow of blood in that vein. This may cause pain, redness and/or swelling.

Some of the clot may travel through the veins to the lungs. This is called a Pulmonary Embolus (PE). A PE can block the blood supply to the lungs and slow the supply of oxygen to the rest of the body which can be life threatening.

When are you at risk of a DVT?

Blood clots can occur because the flow of blood slows down when people cannot move about freely. A few examples of where you may be more at risk of DVT would be:

- Increasing age – though young people can also get blood clots;
- History of blood clots (you, your immediate family or close relative);
- Being overweight;
- Cancer;
- After an accident or surgery;
- Being immobilised in hospital for any reason;
- Travelling for long periods in an airplane or motor vehicle.
- Smoking

Other potential risk factors include:

- Severe heart or lung disease;
- Taking hormone replacement therapy;
- Taking Oestrogen containing contraceptive therapy;
- Having inflamed varicose veins.

Reducing the risks

When you come into hospital your risk for developing a DVT will be assessed and treatment options will be discussed with you.

What you can do to help:

- Getting out of bed and walking about as soon and often as possible;
- Gently exercising your feet and legs while in bed;
- Drinking adequate fluids;
- Taking prescribed medication and/or injections to help prevent a clot;
- Using a compression pump on your lower legs or feet or other device recommended by hospital staff.

What you should watch for

- Pain or swelling in your legs;
- Pain in your chest;
- Difficulty breathing.

Other things to look out for once at home in the first few weeks:

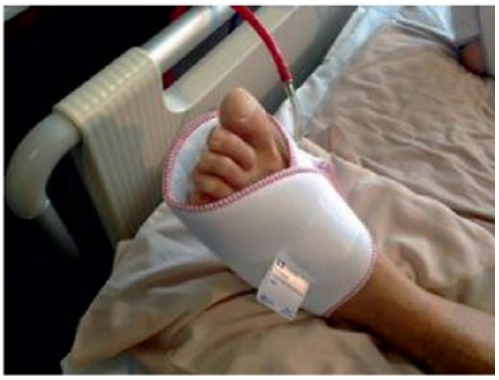
- If your wound becomes hot, reddened, swollen or painful – contact your Surgeon.
- If you develop a cold or any other infection – contact your Surgeon.
- You may experience lower leg swelling, it is often normal and will reduce with rest. If however, your swelling extends above the knee or doesn't improve or resolve overnight, you should contact your Surgeon for evaluation. Sometimes patients experience swelling in their other leg as well. It's best to stretch out on your bed to elevate your legs rather than using a foot stool.

<u>Do's</u> and <u>Don'ts</u> following Total Knee Joint Replacement Surgery

To protect your knee, for the first **6 weeks** following your operation, you must **AVOID** the following:

- Driving (Unless otherwise indicated by your Surgeon)
- Squatting
- Heavy lifting (5 kg max)
- Heavy housework/ yard work, e.g. lawn-mowing, digging, vacuuming
- Kneeling
- Cycling – not on road, exercycle ok
- Jumping
- Running

To avoid the risk of infection for the first 3 weeks after your surgery, you must avoid swimming (this includes spas, swimming pools, river and sea water).



Post – Operative Exercises
(Stage One)

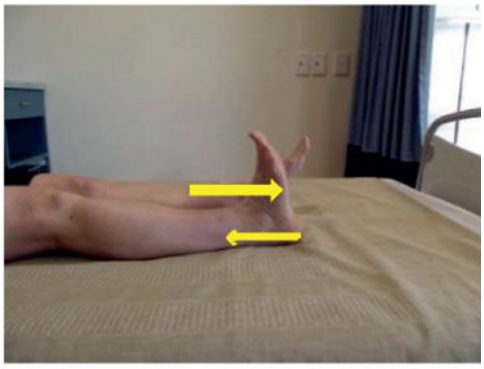
These exercises are to be practiced from when you wake after your operation and continue until you are fully mobile.

Deep Breathing and Circulation exercises (half hourly or hourly)

- Perform **three relaxed, deep breaths**, in through the nose, and out through the mouth
- Perform before and after each of the following exercises:

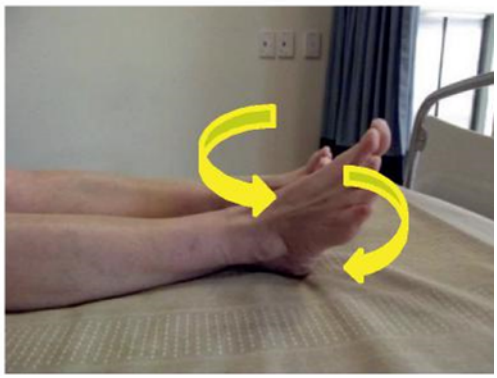
1. Ankles up and down (10x)

With your knees straight, **slowly** pedal your ankles up and down. As you slowly stretch and bend, you should feel tension in your calf muscles.



2. Circling ankles (10x in each direction)

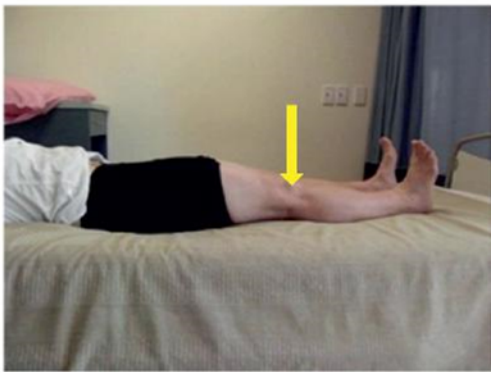
With your knees straight, SLOWLY circle your ankles. You should feel tension in your calf muscles during this exercise.



3. Whole leg tensing (5-10x)

Perform the following 3 movements simultaneously:

- Point the toes of both of your feet to the ceiling.
- Push both your knees into the bed.
- Squeeze your buttocks together.
- Hold for count of 5, slowly release and repeat.



Stage 2 Exercises

Range of Movement and Strengthening exercises

These exercises increase the range of **movement, strength and stability** of your new knee. **Your Physiotherapist will guide you through them & discuss when to start each stage as every program is individualised.**

General Instructions

- Perform exercises **5-10** times, repeating **2-3 times every day**, slowly and controlled. Gradually increase repetitions to 10 times, then 15 times, then 20 times. If any exercise causes lasting discomfort or pain, STOP the exercise and consult your Physiotherapist. Exercise 6 days per week.

- Once you have achieved 20 repetitions 2-3 x daily and they begin to feel easy, then you can either cease doing that exercise or do something more challenging, such as adding weights.(N.B. achieving 20 repetitions can take between 2-4 weeks)

- **Walking** is part of your exercise regime. Gradually **increase** your walking distances as the days go by e.g. walk an extra telephone pole, or lap of the hallway, each or every alternate day. (N.B. Walking is not the main focus in the first month. Range of knee movement is most important.)

- If your knee becomes increasingly **painful and swollen** it is possible that you are overdoing things. **Back off** and have a quiet day, this rest is likely to be of greater benefit than pushing the bend on a swollen knee.

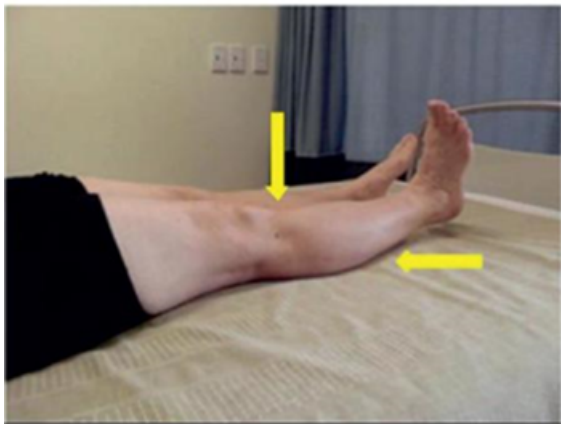
- An adjustment to your pain relieving medication may well be required if the problem doesn't settle and exercises remain difficult or painful. Please discuss this with your GP.

Range of Movement and Strengthening exercises

These exercises increase the range of movement, strength and stability of your new knee. Your Physiotherapist will guide you through these exercises.

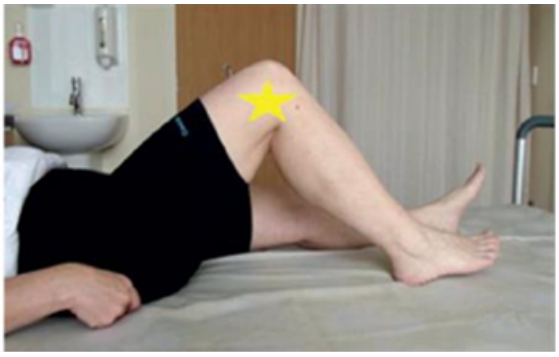
Exercises lying on your back on the bed.

Throughout the next pages, affected leg is indicated by this symbol: ★



1. Isometric Quads

- With leg straight, **press the back of the knee down into bed**, straighten leg as much as possible, and pull your foot towards you.
- **Hold for 5 seconds**. Relax. Repeat.

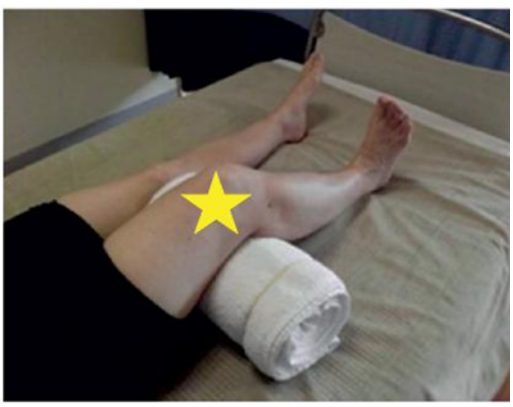


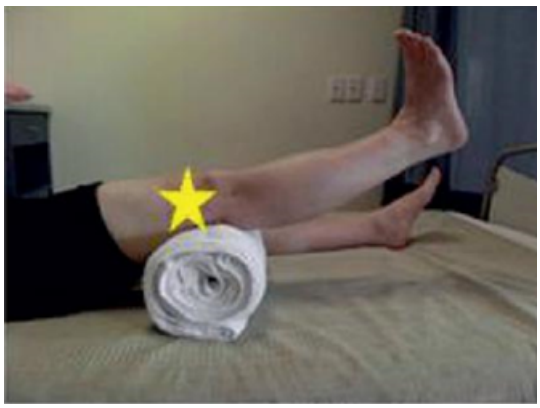
2. Hip and Knee Flexion

- Lie flat on your back.
- Slowly slide the heel of your operated leg towards your buttocks.
- **Hold for 5 seconds.** Lower slowly. Relax. Repeat.
- A smooth board/plastic bag placed under operated leg aids this exercise.

3. Knee extension over rolled towel

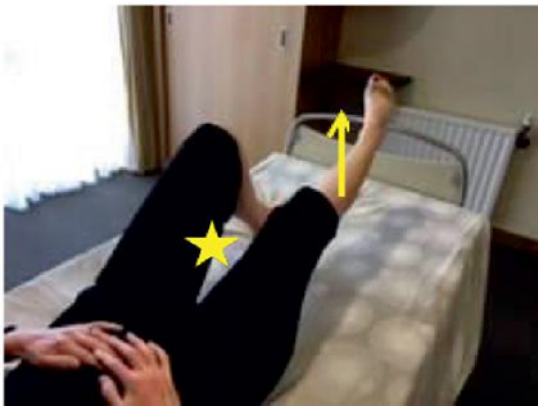
- Lie on back with rolled towel under knee.
- Keep your knee resting on the rolled towel.
- Straighten knee by lifting foot up off the bed.
- Hold for 5 seconds. Lower slowly. Relax. Repeat.





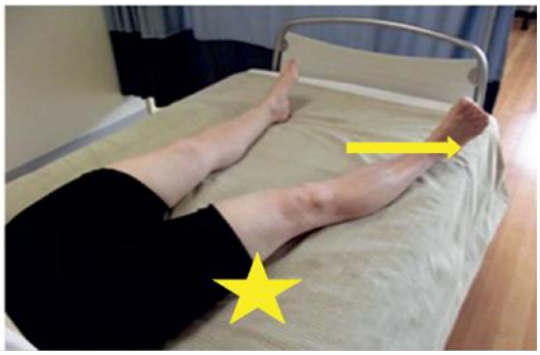
4. Straight leg raise

- Lie flat on back with non-operated leg bent and foot flat on bed
- Straighten knee of operated leg and point toes upwards
- Slowly lift operated leg to 30 degrees (around 20cm)
- Hold for 5 seconds. Lower slowly and relax. Repeat.



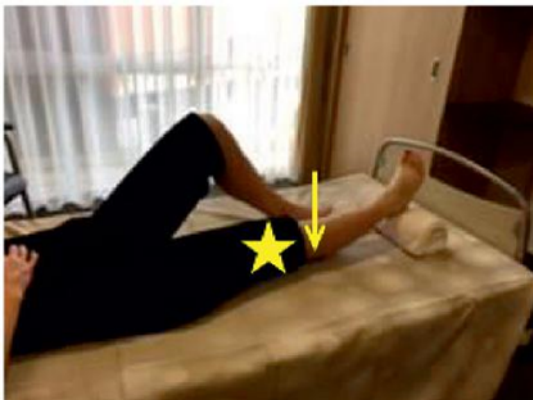
5. Hip Abduction

- Lie flat on your back.
- Slowly slide operated leg out to the side, keeping toes pointing to the ceiling.
- Slowly slide operated leg back to the midline.
- A **smooth board/plastic bag** placed under operated leg aids this exercise.



6. Knee straightening

- Lying on your back with your heel elevated with a rolled towel.
- Tighten the muscle on the front of your thigh and push the back of your knee down against the bed. Hold for 5 seconds, relax and repeat.
- Progress to sitting on a chair with your heel on another chair for 5 minutes twice daily.



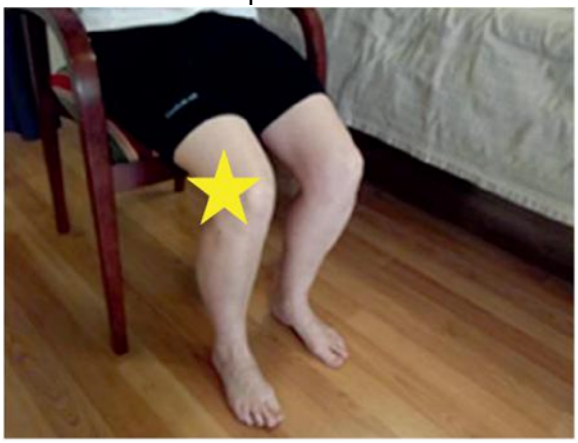
7. Knee extension in a chair

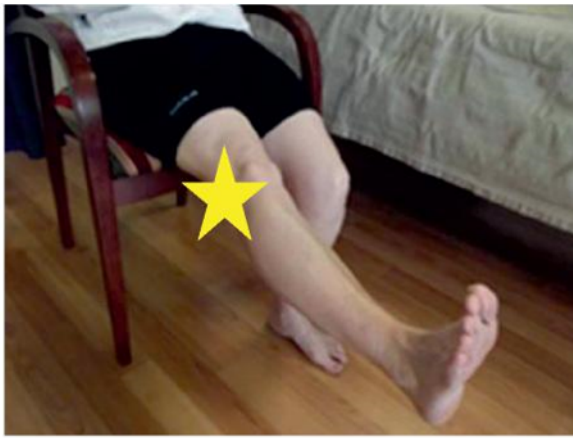
a) Warm up

- Sit with the back of both knees against the chair.
- Slowly straighten knee of operated leg.

b) Stretch

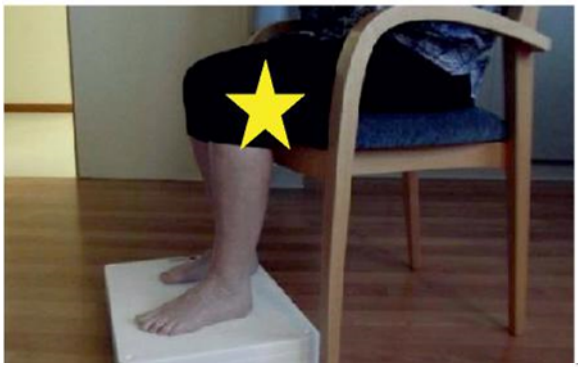
- Hold for 5 seconds; slowly bend knee and lower foot to ground. Relax and repeat.

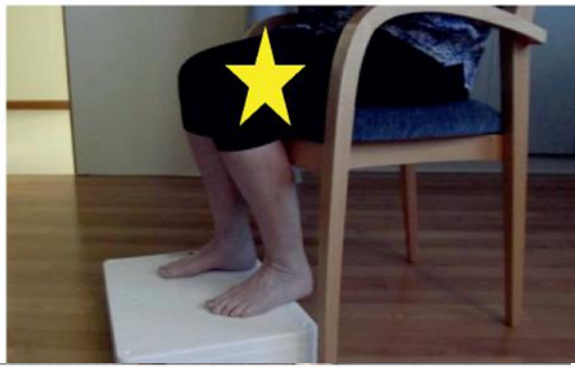




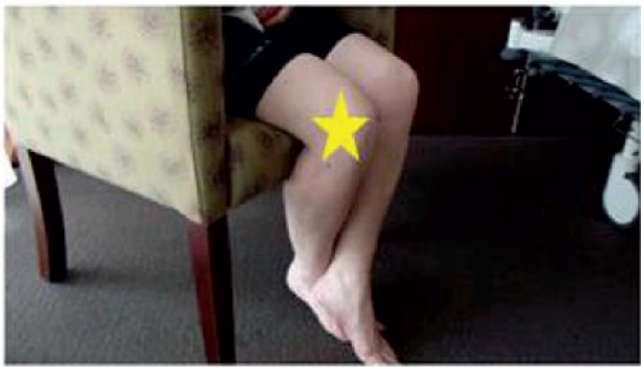
8. Knee Flexion in a chair

- Sit with the back of both knees against the chair.
- Slide the foot of your operated leg back and forward on the ground aiming to increase the bend in your knee (a plastic bag helps reduce friction).
- Then slide your foot back and hold knee bent for a count of 5 and repeat.



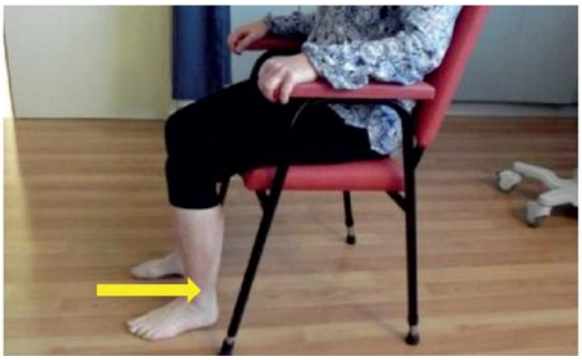


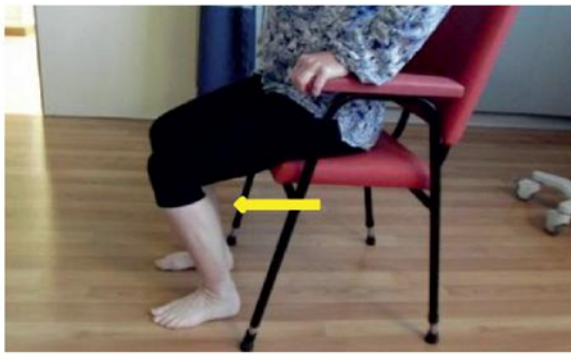
If you cross your good leg over your affected leg, at the ankle, you can assist your operated knee to bend by applying gentle pressure



9. Knee flexion with active assistance

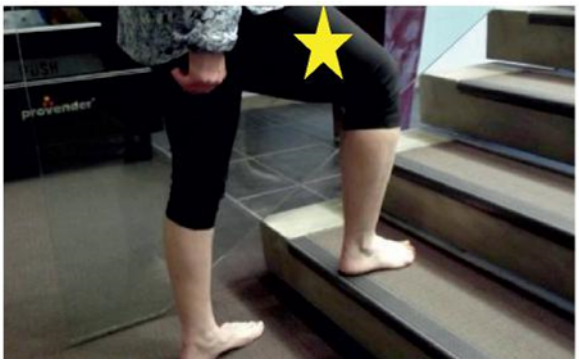
- Sit on a sturdy chair with arm rests
- Grip arm rest
- Keep buttocks in contact with seat
- Slide operated leg underneath you as far as possible
  Hold for 5 seconds, then slide buttocks forward on seat without moving your foot.
  Hold for 20 seconds, relax and repeat.

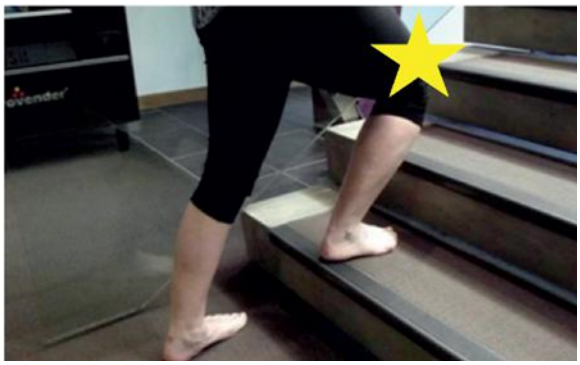


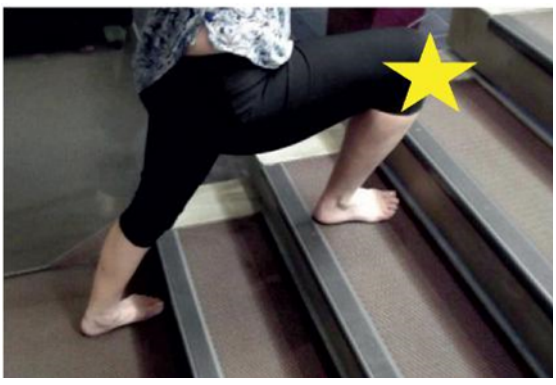


10. Knee Flexion - active

- Stand facing steps. Holding onto railing, step your operated leg onto the first step
- Lean forward, do not twist the uninvolved knee in or out. Hold for 20 seconds
- Relax and repeat.
- Progress to the second step as you improve.





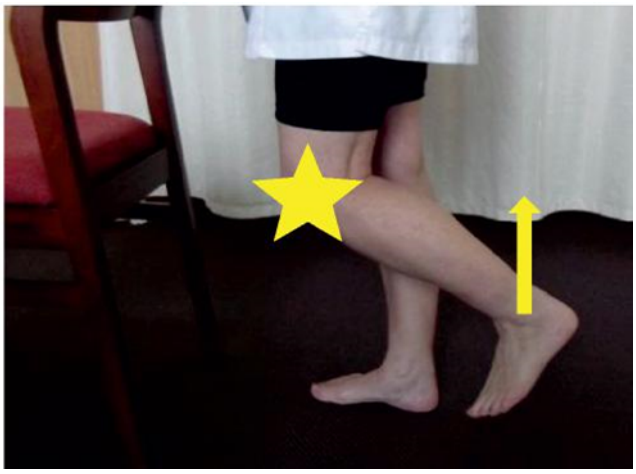


Stage Three exercises

Initially do each exercise 10 times, 2-3 times per day, and as you get stronger, increase the number of repetitions to do 2 sets of 10 of each exercise, then 3 sets of 10, 2-3 times daily.

1. Knee Flexion

- Stand straight, holding onto a chair with both hands.
- Slowly **bend knee of operated leg**,raising heel towards buttocks. **Hold for 5 seconds**.
- Slowly lower operated leg to starting position. Relax and repeat.



2. Mini Squats

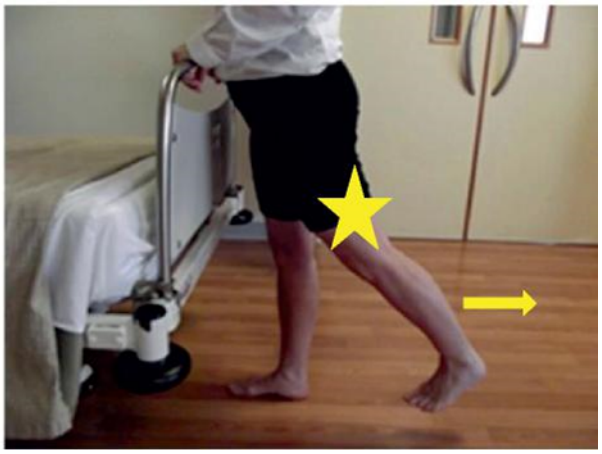
- Stand with back against the wall, pushing knees back towards the wall.
- Slowly and gently bend both knees, keeping back against the wall.
- Hold for 5 seconds (gradually hold for longer, e.g., 10,15,20 seconds)
- Slowly return to the start position by sliding up the wall.
- Relax, repeat.

3. Bridging

- Lie on back on bed with knees bent up
- Gently tighten lower stomach and buttock muscles
- Do not hold your breath
- Slowly raise lower back and buttocks off the bed
- Hold for 5 seconds, lower, relax and repeat.

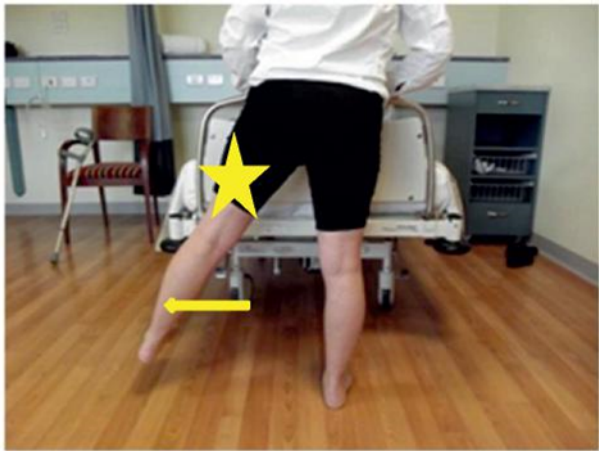
4. Hip Extension

- Stand straight, holding onto a chair with both hands
- Slowly bring your operated leg backwards, keeping knee straight
- Hold for count of 5 seconds without leaning forwards
- Slowly bring operated leg to start position, relax and repeat.



5. Hip Abduction

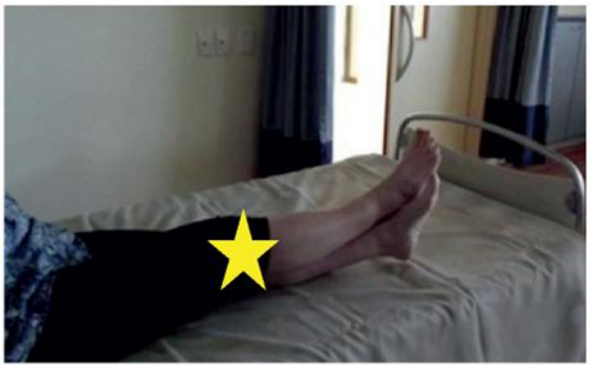
- Stand straight, holding onto a chair with one hand
- Slowly lift operated leg sideways, keeping knee straight
- Hold for count of 5 seconds, keeping trunk straight
- Slowly bring operated leg back to start position, relax and repeat

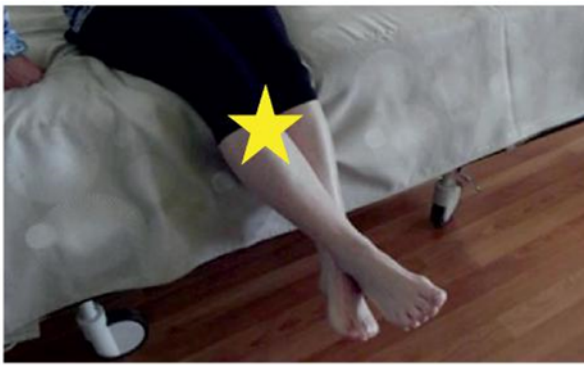


Activities of Daily Living

Foot Hook. Only to be used if struggling. Ask your Physiotherapist.

In the early stages of recovery, a quick and easy way to assist with getting in and out of bed is to use your non-affected leg to support your operated leg during transfer.

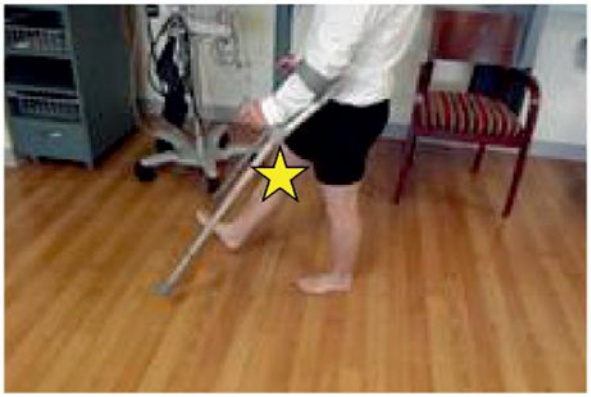


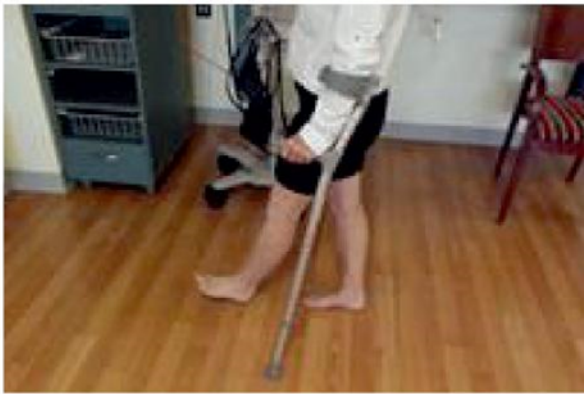


Walking using elbow crutches

To take a step forwards:

1. Take both elbow crutches and operated leg forward first.
2. Stand up straight and keep your head up and take some of the weight through your arms as necessary.
3. Step forward with your non-operated leg





- When walking – keep both feet pointed straight ahead. Try not to let your operated leg turn out to the side.
- When turning – **do not pivot or swivel on your operated leg**. Instead, when turning, lift your feet up and take small steps around.
- Walk using 2 elbow crutches and progress as you feel safe, steady and secure to 1 elbow crutch, **held on your non-operated side**.

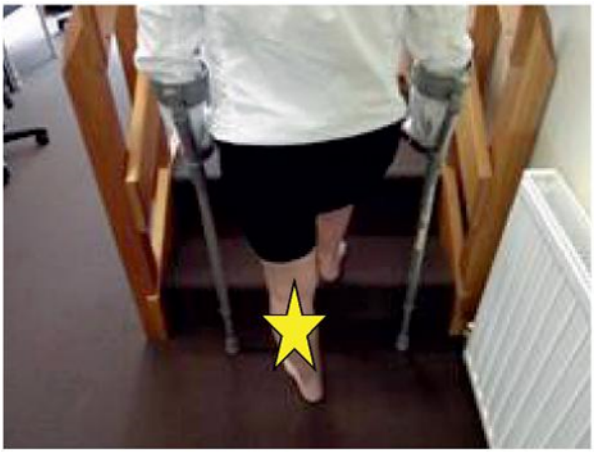
Gradually progress to no elbow crutches as you feel safe, steady and secure.
Progress your walking **firstly indoors then outdoors** at a later date depending on terrain. Remember there are no prizes for getting rid of your crutches early. A good indication for whether you ought to discard your crutches is whether you can walk without limping.

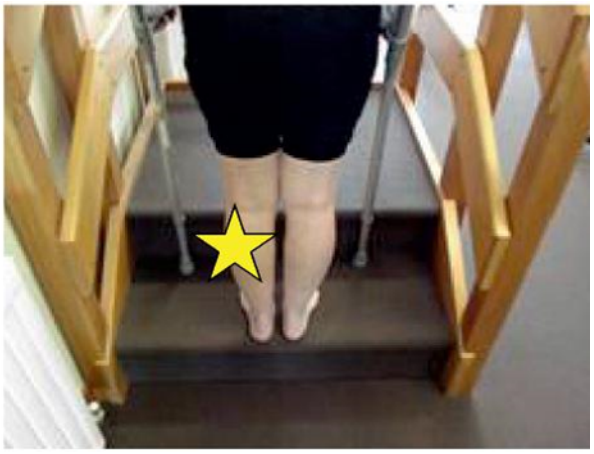
Going up and down Stairs

You may use either 2 elbow crutches OR 1 elbow crutch and the handrail. Take one step at a time.

Going up stairs: (GAS i.e., Good, Affected, Sticks)

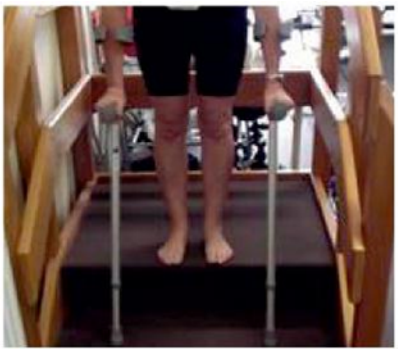
- Place non-operated leg up a step first.
- Then place operated leg on the same step.
- Followed lastly by both elbow crutches on the same step.

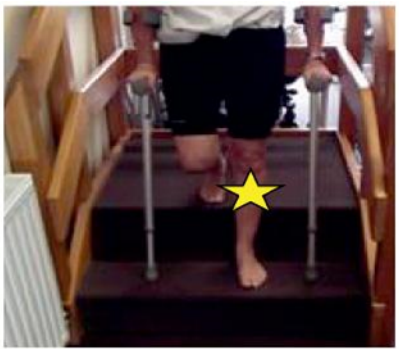


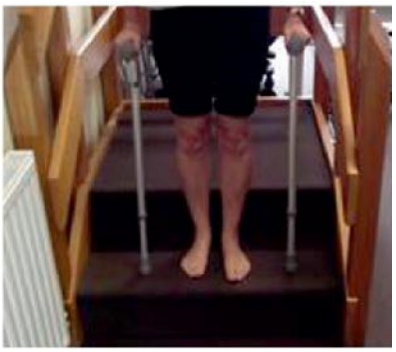


Going down stairs: (SAG i.e. Sticks, Affected, Good)

- Place both elbow crutches down a step first.
- Then place operated leg on the same step.
- Followed lastly by non-operated leg on the same step.







Getting into bed

- Sit on the side of the bed. Move your bottom back as far as possible.
- Then move back across the bed and up towards the pillow. Keep your **operated leg straight**. Use **foot hook** if needed.

Getting out of bed

- Bend your non-operated/good leg.
- Move sideways to the edge of the bed, using your arms and non-operated leg to lift your bottom.
- Slowly lift your bottom around until both legs come forward off the bed. Use **foot hook** if needed.
- Slowly lower both legs down onto the floor.

Getting up from sitting

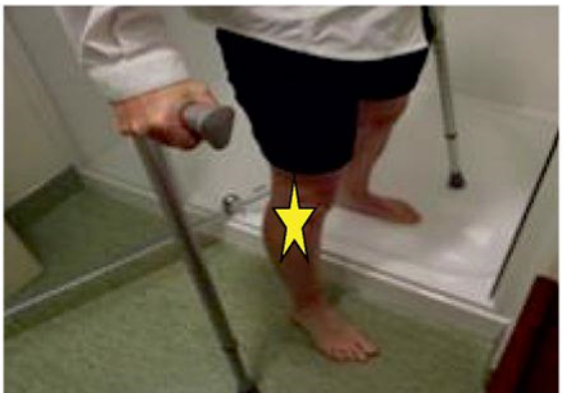
- Use the arms of the chair to push up into standing, and then put your arms/hands into crutches. Do not put arms/hands into crutches before standing.

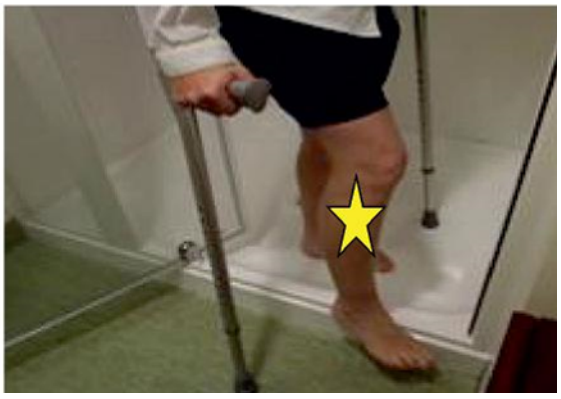
Sitting down

- Remove your hands/arms from the crutches, then use the chair arms or bed to sit down.
- Do not sit down with your arms/hands still in crutches.
- Step forward a little with your operated leg to take some stretch off your knee as you sit down.

Showering - *this is always a potentially hazardous area*

- Use a **non-slip mat**, especially if you have been aware of past slipperiness. (Rubber Mats with suction cups are effective)
- Handrails will assist your balance and safety.
- A **shower stool** or **raised toilet frame** may be useful to sit on.
- Soap on a rope, liquid soap or a cake of soap suspended in a pair of pantyhose may be helpful.
- Use a long-handled brush to wash your feet and lower legs.
- For the initial period following your operation, it is recommended to **shower when there is someone in the house**. Continue with this until you are confident you can manage independently and safely.





Dressing

- Dress sitting on a chair or bed at good height. Take your time.
- Dress your **operated leg first and undress it last**.
- Use your **'helping-hand'** to assist.
- A **long-handled shoehorn** may be useful for your shoes.

Using icepacks

- Icepacks are useful for decreasing the extent of **swelling** post-surgery.
- They are best applied after exercise or an extended walk.
- Apply for **20 minutes** for optimal effect.
- Icepacks will be most effective if the leg is also in an **elevated position** e.g., stretched out on the bed. Apply as often as you like.

Using heat packs

- **Not** for use on the **wound area** for 2-3 weeks, as will encourage swelling.
- In the event of **muscle cramps or aches** a heat pack or wheat bag can be very soothing.

Soft tissue massage

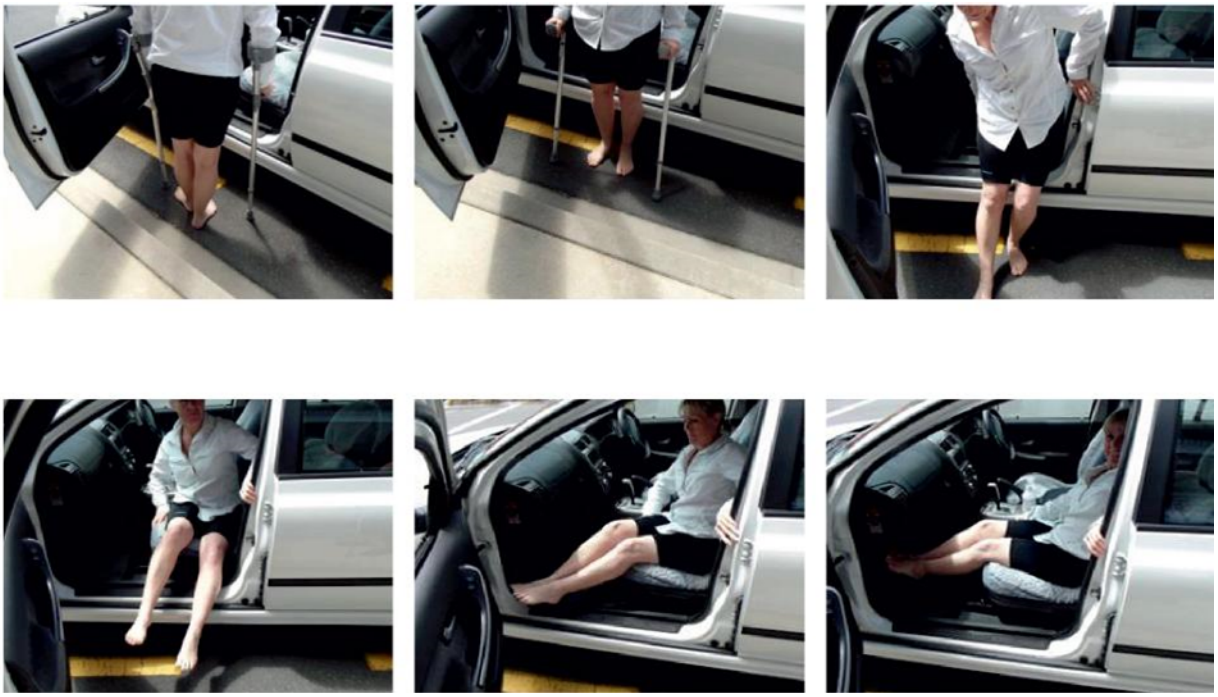
- You may be helped with soft tissue massage of a **gentle nature** to the muscles around your knee.
- We recommend you use "Antiflamme" or " Metron Rub"
- **Avoid getting cream into or near your wound.**
- Once your wound is well healed you will find gentle massage quite useful to aid the freeing up of your scar. Some people use **Bio oil** and others an **Aloe Vera cream**. Also things like **Vitamin A cream** help.

Resuming sexual activities

- You may resume sexual activities once home from hospital.
- Initially take a passive role. Let your partner take the active role.
- Avoid excessive force on your new knee.
- Check the website www.recoversex.com for further information.

Getting in and out of the car

- Get into the car from street level NOT footpath level. Slide the seat back as far as possible for leg room.
- Place a large plastic bag on the seat. (This helps you slide more easily into the car).
- Slide your bottom onto the seat first, use unaffected leg to push up and back onto the seat, and then swing your legs in together (or one leg at a time if this is too difficult).



Pool Exercises

- To reduce the risk of infection, do not use a swimming pool, spa pool or go into seawater for the first 3 weeks following your operation.
- Do not enter a pool until your wound is fully healed. Bacteria can enter your body through your wound and result in an infection in your knee.
- After 3 weeks, hydrotherapy exercises help increase the movement, strength, and stability of your knee.

The following guidelines are recommended:

- Do not spend more than 20 minutes in a pool at any one time.
- Have someone to assist you into and out of the pool until you feel sufficiently confident to manage alone.
- Use handrails (if available) when getting into and out of the pool.
- Drink plenty of water before and after exercising in the pool.
- Wear suitable footwear (for example 'kayaking shoes') if the bottom of the pool is slippery.

The following pool exercises are recommended:

Walking - *With the water at around waist height*

- Slowly walk backwards, squeezing buttock muscles as each leg is pushed out behind.
- Slowly walking forwards, lifting knees as high as possible, using the water as a resistance.

Exercises

The following exercises should be performed both slowly (for movement) and quickly (for strength). Standing straight, holding onto the edge of the pool for support:

- Bring operated leg backwards, keeping knee straight. Return leg to start position. Repeat.
- Bring operated leg forwards, bending operated knee and raising thigh to horizontal. Return leg to start position. Repeat.
- Lift operated leg sideways, keeping knee straight. Return leg to start position. Repeat.
- Keeping thighs together, bend knee, raising heel towards buttocks. Return leg to start position. Repeat.

An **exercycle** can be a useful way to strengthen your knee and improve the range of movement. You can begin this around 2 weeks post-op. You may need assistance to get on and off the bike initially.

- Start with the seat up high and the exercycle set at low or no resistance.
- You may need to just rock gently back and forth on the pedals until your knee bend is sufficient to allow full rotation of the pedal.
- If the knee is uncomfortable when fully bent, raise the seat to ease the strain on the knee as the pedal moves around.
- As you can begin to cycle with ease, gradually increase the resistance to improve leg strength.
- It can be beneficial to **apply ice** for 15-20 minutes after each session.

Start with 1-2 minutes cycling and gradually build up to 20 minutes.

Kneeling

Kneeling is a functional position and can be re-trained following Knee joint replacement surgery. Those patients who wish to kneel again need to get used to kneeling by following a gradual progression which involves de-sensitising the skin and soft tissues to touch and pressure.

Once your wound has healed, [at about 2 to 3 weeks post op], you can start to massage the skin around the knee and gently mobilise the scar, this will help to de-sensitise the skin; there may be some areas of lasting numbness, this is usually nothing to worry about and is quite normal. You may want to use an oil or cream such as Almond Oil, Bio oil or Vitamin E cream when massaging.

By 4 to 6 weeks post op, you are able to start putting weight through the knee to re-train weight bearing on the knee joint. This is best done by putting your knee onto a low chair and putting body weight through the knee. This may be uncomfortable at first, if so, increase the padding under the knee. Over time gradually reduce the padding and increase the weight through the knee.

Progress to kneeling on a cushion on the floor, this is best done by kneeling beside your bed, taking some weight through your arms at first. Progress by reducing the padding, increasing the weight, and increasing the time spent in the kneeling position.

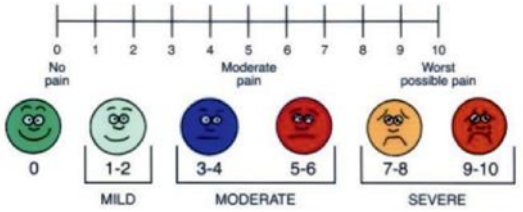
Once you can tolerate kneeling for a few minutes and with minimal padding you are ready to kneel functionally. You may find that a knee pad is required to give you some padding, especially if kneeling on a hard surface. A kneeling stool is useful for gardeners.

Some people find that it takes quite a lot of time to tolerate kneeling after surgery; the key is regular massage and kneeling practice each day.

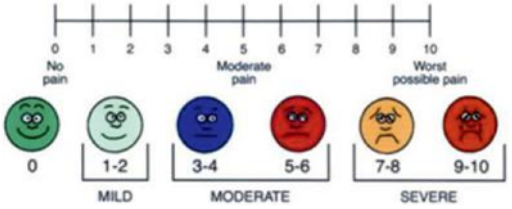
Activity Diary
Day 1

Sat out of bed for at least half an hour	Walked	Practiced my exercises	Practiced my exercises
□ In the morning	□ To the bathroom	□ Circulation and breathing exercises	□ Morning
□ In the afternoon	□ In the morning	□ Isometric quads	□ Afternoon
□ For lunch	□ In the afternoon	□ Physio exercises as instructed	□ Evening
□ For dinner	□ Dressed in my own clothes		

Today my worst pain score was:



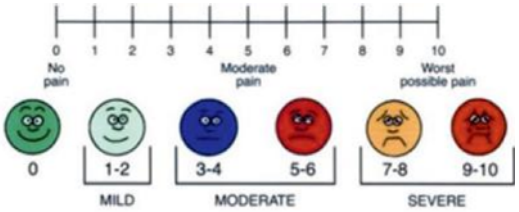
Today my lowest pain score was:



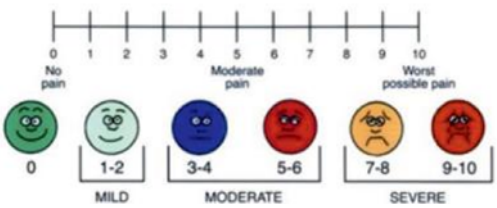
Day 2

Sat out of bed for at least half an hour	Walked	Practiced my exercises	Practiced my exercises
□ In the morning	□ To the bathroom	□ Circulation and breathing exercises	□ Morning
□ In the afternoon	□ In the morning	□ Was taught stairs	□ Afternoon
□ For lunch	□ In the afternoon	□ Physio exercises as instructed	□ Evening
□ For dinner	□ In the evening		
□ Showered independently	□ Out in the corridor		
□ Aimed to be independent getting in and out of bed	□ Dressed in my own clothes		

Today my worst pain score was:



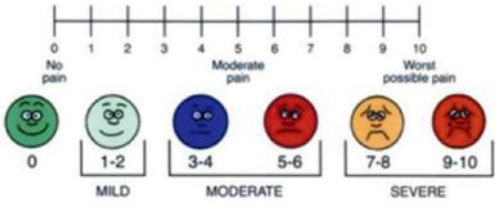
Today my lowest pain score was:



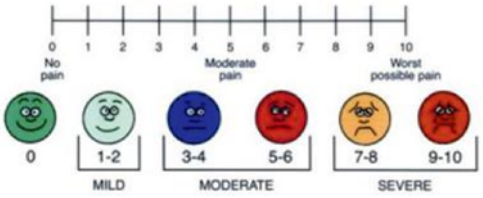
Day 3

Sat out of bed for at least half an hour	Walked	Practiced my exercises	Practiced my exercises
□ In the morning	□ To the bathroom	□ Circulation and breathing exercises	□ Morning
□ In the afternoon	□ In the morning	□ Was taught stairs	□ Afternoon
□ For lunch	□ In the afternoon	□ Physio exercises as instructed	□ Evening
□ For dinner	□ In the evening		
□ Showered independently	□ Out in the corridor Walking a few more steps each day		
□ Aimed to be independent getting in and out of bed	□ Dressed in my own clothes		

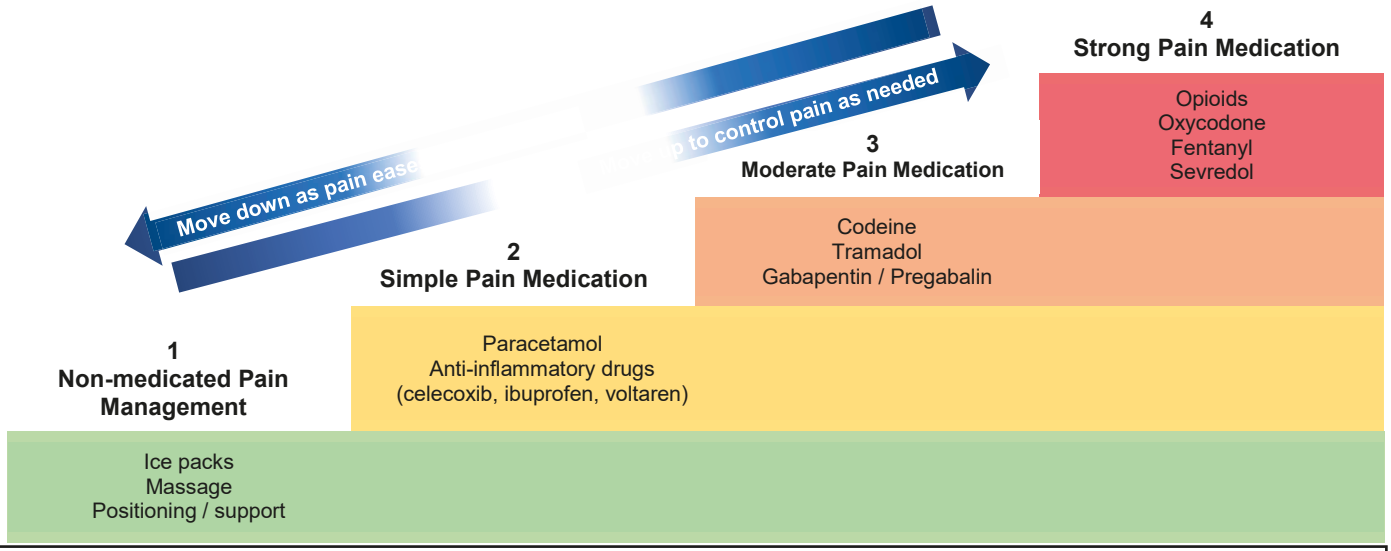
Today my worst pain score was:



Today my lowest pain score was:



Pain Plan



Pain Relief Plan

You may find this simple chart helpful in planning your pain medication management.

Medication	Last given	*Suggested* administration times			
Paracetamol / Panadol 4 doses per 24 hours, 4-6 hours between doses.					
Anti-inflammatory _____					
Tramadol Up to 4 doses per 24 hours, 4-6 hours between doses. May be used regularly or only as necessary.					
Tramadol SR (Slow Release) Longer effect, taken twice a day.			X	X	
Gabapentin / Pregabalin Targets 'nerve' pain. Use as prescribed.					
Codeine May be used regularly or only as necessary.					
Oxycontin (Slow release Oxycodone) Slow release, lasts 12 hours.			X	X	
Sevredol / Oxynorm (Immediate release opioid) For "break-through" strong pain. As prescribed.					
Additional Medications:					

Pain Plan

Pain Management Advice

Some discomfort is normal and expected after surgery. Our goal is to optimise comfort, so that pain is at a manageable level, allowing you to cope with daily activities, progress mobility and optimise breathing. Most people will require pain relief for at least a week after surgery, longer for more major procedures. Generally, pain should steadily improve throughout recovery and if this is not the case, you should seek medical review.
Different pain relief medications may be more effective or tolerable for some people than others, and your pain relief prescription will be targeted to your individual needs.
The goal will be to wean off your pain relief medication in a step wise manner from strongest to weakest. Pain is best managed using a combination of medications that work in different ways. Use your individual pain relief pain, over the page, as a guide to safe administration, and follow packet directions.

Stay ahead of your pain. Pain relief works better when taken regularly to prevent pain becoming worse. It is also a good idea to take pain relief before doing exercises or activities which are more painful for you.

Keep a pain relief record. While you are getting used to taking medication, it can be useful to keep a record of what you are taking and when. This can help in planning your day and exercise times, and working out when and what you need. There are many printable documents available online, such as the example below - or you can make your own. Some patients have told us that they have found the ***app 'take your pills'*** helpful. Example:

	Monday	Time of day						
Name	Dose							

Side Effects. All medications have potential side effects. Common side effects of pain medications can include: nausea, vomiting, headaches, dizziness, drowsiness and constipation. Many people can cope with mild side-effects for a short time if they are not too severe. However if you develop unpleasant side effects, please seek advice from your surgeon's rooms, your family health care provider (during business hours) or from Grace Hospital (24 hours). You can also seek advice from these sources if you are not getting adequate pain relief from the medications given to you on discharge from hospital.

Only Take Medications that you are prescribed. Check before using other over-the-counter medications, as medication interactions can occur.

Additional Medications
Laxsol is a laxative / stool softener, often used with pain medications to avoid constipation. The usual dose is 1-2 tablets each night, but please follow packet instructions.

Omeprazole is used to reduce stomach acidity and irritation which can occur with some pain relief medications. The usual dose is 20mg daily, but please follow packet instructions.

Ondansetron (Zofran) is used to treat or prevent nausea. It is usually taken only as required, please follow packet instructions.

Cyclizine (Nausicalm) is used to treat or prevent nausea or motions sickness. It is usually taken only as required, please follow packet instructions.