



stryker

Your journey

Mako Robotic Arm Assisted Surgery
Partial Knee Replacement Patient Pack

Patient information
from **Stryker**

www.patients.stryker.com.au

Robotic Arm Assisted Partial Knee Replacement Patient Preoperative Guide

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Important information for patients

The information presented is for educational purposes only. Stryker is not dispensing medical advice. Please speak to your doctor or orthopaedic surgeon to decide if joint replacement surgery is right for you. Only your medical professional can make the medical judgment which products and treatments are right for your own individual condition. As with any surgery, joint replacement carries certain risks. Your surgeon will explain all of the possible complications of the surgery, as well as side effects. Additionally, the lifetime of a joint replacement is not infinite and varies with each individual. Individual results between patients may vary. Each patient will experience a different post-operative activity level, depending on their own individual clinical factors. Your doctor or orthopaedic surgeon will help counsel you about how to best maintain activities in order to potentially prolong the lifetime of the device. Such strategies include not engaging in high-impact activities, such as running, as well as maintaining a healthy weight.

Important Contact Details

Doctor / health professional name	Specialty	Location	Contact phone no.

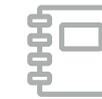
My appointments

Appointment Type	Date	Time	Location	What to bring
Pre-operative consultation				
Pre-admission clinic				
Day of surgery				
Post-operative appointment				



Patient Information from **Stryker**

This booklet is designed to inform and support you throughout your joint replacement journey. It is intended to complement the support and information already provided by your healthcare team to ensure you make the most of every day during your recovery. It has been developed in consultation with orthopaedic surgeons and physiotherapists but remember that it should not replace the individual advice provided by your health professional. If you have any questions about your joint replacement procedure you should raise these with your health professional.



This **patient pack** contains some important information on preparing for surgery and tips and reminders on maximising your recovery. The booklet can travel with you to medical appointments and can also help explain your planned joint replacement to family and friends.



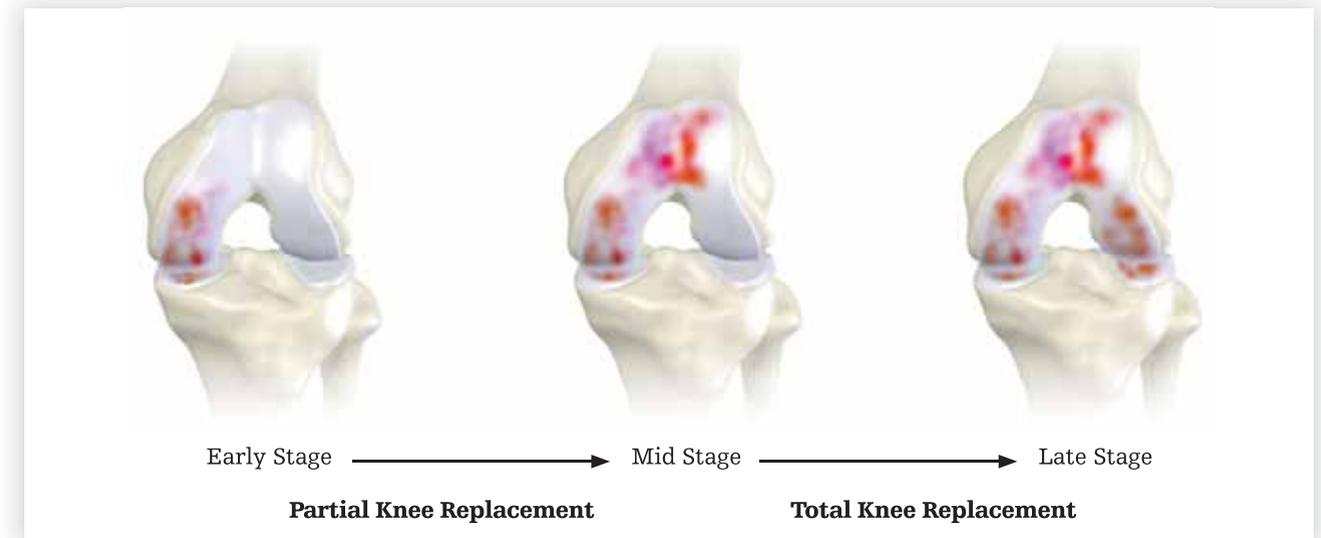
Online patient resources provide even more information on getting ready for surgery and maximising a successful recovery. You can view videos, print exercise reminder sheets and read stories from other people that have experienced joint replacement. Simply go to www.patients.stryker.com.au and register using the password **robotic**.



Understand knee pain

A healthy knee allows pain free movement due to the presence of cartilage, which acts like a cushion between the bones in our joints. Knee pain can be triggered by deformity or injury, but one of the most common causes is osteoarthritis (OA), also known as degenerative joint disease. OA causes the cartilage to become inflamed and wear down, enabling bones to rub together. This leads to stiffness, deformity and loss of mobility.

The knee is made up of three compartments; the medial (inner), lateral (outer) and patellofemoral (top). Early to mid-stage OA may affect one or two compartments of the knee, whereas a later stage of OA may have progressed to all three compartments.





Seeing your surgeon

Knee pain is important to manage because it can prevent you from comfortably performing everyday activities like walking in the park, going shopping, or visiting family and friends. In cases where the pain is especially limiting and other treatments are providing little pain relief, your doctor may recommend partial or total knee replacement surgery, usually where anti-inflammatory drugs or other treatments such as physiotherapy are providing little pain relief.

Treatment of knee pain depends on the location of the arthritis. The inside or medial compartment, the outside or lateral compartment and the kneecap or patellofemoral compartment. If all 3 compartments of the knee are damaged, a total knee replacement (TKR) may be recommended by a doctor. However, if only 1 or 2 compartments are damaged, a partial knee replacement (PKR) may be recommended by a doctor. PKR allows surgeons to replace only the arthritic portion of the knee, which means there is more of the patient's natural tissue left behind.

Mako Robotic-Arm Assisted Technology can be used for partial knee replacement, which is a surgical procedure which may help relieve the pain caused by osteoarthritis (OA) in one or two of the three compartments of the knee. By selectively targeting the part of your knee damaged by OA, your surgeon can replace a portion of your knee while helping to spare the healthy bone and ligaments surrounding it. This technology helps surgeons provide patients with a personalised surgical experience where each surgical plan is based on your specific diagnosis and anatomy.



Learn about robotic partial knee replacement

There are three types of PKR

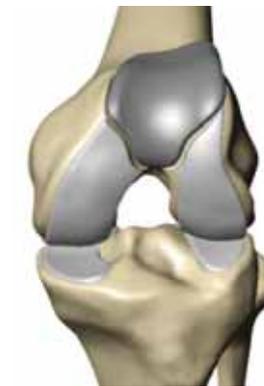
1. Unicompartmental Knee Replacement is a procedure that replaces only the single affected compartment of the knee, either the medial or lateral compartment.
2. Patellofemoral Knee Replacement is a procedure that replaces the worn patella (the kneecap) and the trochlea (the groove at the end of the thigh bone).
3. Bicompartmental Knee Replacement is a procedure that replaces two compartments of the knee, the medial and patellofemoral compartments.



Bicompartmental



Medial (inside)



Patellofemoral (top)



Lateral (outside)

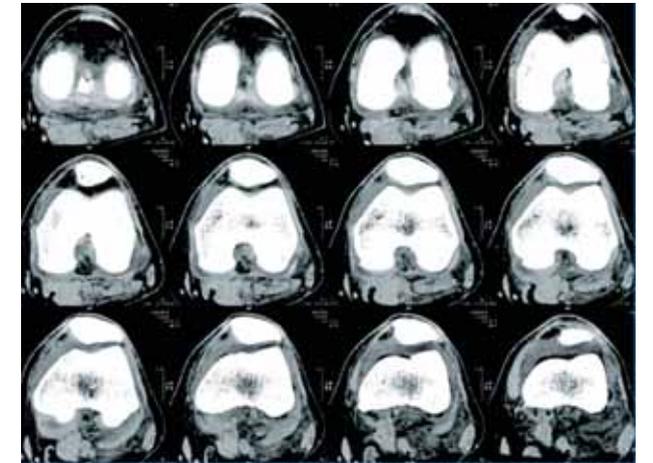


How Mako Robotic-Arm **Assisted Surgery works**

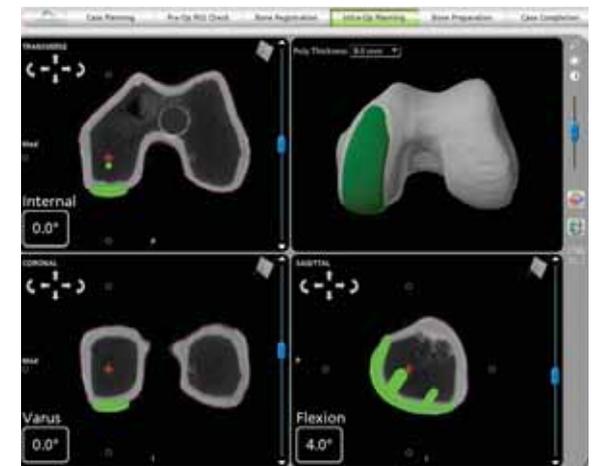
Your personalised surgical plan

Your orthopaedic surgeon will arrange for a Computer Tomography (CT) scan of your knee joint, this is a series of X-rays taken at different angles, that can help surgeons see things that they can't typically see with an X-ray alone.

Your orthopaedic surgeon will use the CT scan data to create a 3D virtual model of your unique anatomy, this virtual model is loaded into the Mako system's software and is used to create a personalised preoperative plan. Before surgery, the surgeon reviews the planned size and placement of the implant, and, if necessary, the surgeon can modify the preoperative plan.



CT scan



Personalised pre-operative plan

In the Operating Room

During surgery, your surgeon uses a probe to locate points on the knee in order to register your anatomy in the Mako system. This process establishes the relationship between your actual anatomy in the operating room, and the 3D model used during the planning process. This step helps ensure the procedure is executed according to the plan. Once the anatomy is registered to the 3D model, the surgeon has the flexibility to modify the pre-operative plan, based on their assessment of your unique anatomy and range of motion.

During the operation, your surgeon will use the Mako system to assist in performing your surgery, the Mako System also allows your surgeon to make adjustments to your plan during surgery as needed. When the bone is being prepared for the implant, your surgeon is the one performing the surgery, the Mako System simply guides him/her within the pre-defined area and helps to keep bone removal within the the planned boundaries.

With the diseased bone gone, a partial knee implant is inserted into the joint space, and once the surgeon is comfortable with the knee's movement, it's off to the recovery room to begin the journey towards strengthening the knee joint.



The Mako robotic arm



Partial knee implants

After Surgery

After surgery, your surgeon, nurses and physiotherapists will set goals with you to get you back on the move. They will closely monitor your condition and progress. Your surgeon may review an x-ray of your new partial knee with you.



A post operative x-ray

Frequently Asked Questions

Q: Does the Mako Robotic Arm actually perform the surgery?

A: No, your surgery is performed by your surgeon, who is a specialist trained in orthopaedic surgery. He or she uses the surgeon-controlled robotic-arm assisted system to pre-plan the surgery, remove damaged bone, and position the implant. The robotic arm does not perform the surgery, nor can it make any decisions on its own, or move in any way, without the surgeon guiding it. The Mako system also allows your surgeon to make adjustments to your plan during surgery as needed.

Q: How long has the Mako procedure been available?

A: The first Mako procedure was performed in the USA in June of 2006 and in Australia in April 2015.

Q: Is Mako covered by private health insurance?

A: This varies depending on your health fund, policy, and level of cover. Please contact your health fund directly to understand your specific coverage.



Prepare for partial knee replacement surgery

Your orthopaedic surgeon will explain that it's important to start preparing for your partial joint replacement several weeks before the actual surgery date. You should expect to put aside about 4-6 weeks for recovery, so get organised, schedule appointments and take care of as much business as possible before surgery. To prepare for surgery, check our 20 pre-surgery tips to make sure you're ready.

Your surgery – what to expect

Before hospital admission, your surgeon or hospital will provide you with instructions to follow before you arrive at hospital, an appointed arrival time, some pre-surgery health assessments and information on your expected length of stay. You will be scheduled for a CT scan at least 1-2 weeks prior to your surgery date. This scan will help your surgeon plan the implant placement specifically to fit your knee.

In preparation for joint replacement surgery, once you are admitted (checked-in) to the hospital, you'll be transferred to the operating room on your bed or a trolley. An IV (intravenous) tube will be inserted in your arm to administer fluids and medications, including antibiotics. You will have either a spinal or general anaesthetic (or both) and this will have been discussed beforehand with your anaesthetist. Elastic stockings may be put on your legs to help the blood flow. You may also have compression sleeves wrapped around your feet and calves, connected to a machine that that inflates them with air to promote blood flow, and decrease the possibility of blood clots.

The operating theatre is often bright, busy and cool in temperature you can expect there to be several hospital staff present wearing face masks.

Typically, joint replacement surgery generally lasts 1 to 2 hours (sometimes more depending upon your individual circumstances).

After the joint replacement procedure, you will be transferred to the recovery room where nursing staff monitor your recovery until you are awake and alert. In addition to the IV tube, you may have a catheter tube to drain your bladder and a wound drain (tube coming out of the skin near your knee attached to a bottle/container). You may also be wearing special elastic stockings to help blood flow. Time spent in recovery is often 1 to 3 hours but varies depending upon your response to anaesthetic. Visitors are not usually permitted in the recovery area.

After recovery, you will be transferred to your hospital ward or room. Nursing staff will continue to closely monitor your progress and you will be administered pain medication to manage pain. Don't hesitate to ask for pain relief if you are feeling uncomfortable.

It may come as a surprise to you that after partial joint replacement surgery you'll be encouraged to begin physiotherapy almost straight away. You will be encouraged to breathe deeply and cough to clear your lungs.

In the first few days after surgery, your orthopaedic surgeon, nurses and physiotherapists will monitor your condition and progress closely. You'll spend time resting but also a lot of time exercising your new joint. Your pain medication will be reduced gradually, your IV drip, catheter and wound drain removed (if you had them), you'll return to a diet of solids – and you'll become increasingly mobile. As you progress, you will be taught to walk with a walking frame, crutches, and/or walking stick, climb up and down stairs, and to get in and out of a car. Hydrotherapy may be recommended to assist your recovery.

Leaving hospital will usually occur when you have reached certain rehabilitative 'milestones', such as getting in and out of bed unassisted, or walking a short distance. Your surgeon will assess whether you can go directly home or somewhere that can help further with your recovery and rehabilitation. Your hospital will discuss arrangements for your continued rehabilitation, which may include visits with a physiotherapist or staying at a rehabilitation care facility.

Understanding risks and complications

Joint replacement surgery is major surgery but highly successful in achieving its aim to restore mobility and function.¹

Nevertheless, as with any major surgical procedure, patients who undergo knee replacement are at risk of certain complications which your orthopaedic surgeon will explain to you. However most complications can be successfully avoided and/or treated. Potential complications include

Joint infection. Infection may occur in the wound or within the area around the new joint. This can happen in the hospital, after you return home, or even years later. After your joint replacement surgery, you'll receive antibiotics to help prevent infection. You may also need to take antibiotics before undergoing any medical procedures to reduce the chance of infection spreading to the artificial joint.

Lung congestion. Pneumonia and other lung issues are a risk following any major surgery. To help keep the lungs clear of congestion, you may be given a series of deep breathing exercises.

Deep vein thrombosis (DVT). Blood clots are a risk following all surgery. Your surgeon may prescribe measures to prevent DVT such as getting mobile as early as possible, special support stockings, inflatable leg coverings, ankle pump exercises and blood thinning medication.

There are other potential complications that occur infrequently as a result of joint replacement surgery. Refer to your surgeon or hospital for more information and visit www.patients.stryker.com.au and login using the password **robotic**.



20 tips to help you prepare for surgery

A few weeks before your partial knee replacement surgery, make sure you tick off the following checklist:

- 1 Visit a pre-admission clinic.** If your hospital runs a clinic before surgery, this can help you enormously. You will meet hospital staff, including nurses and physiotherapists, and discuss more details about what to expect on the day of your surgery, during your hospital stay and during your rehabilitation.
- 2 Have routine laboratory tests** as directed by your surgeon and/or the hospital staff. Blood tests, urine tests, an ECG (electrocardiogram) to monitor your heart function, and a chest X-ray may be ordered to confirm that you're fit for surgery.
- 3 Begin exercising, as directed by your orthopaedic surgeon.** By being in the best of health prior to surgery you can increase your chances of having a better surgical outcome. Ask your surgeon and/or physiotherapist about starting an exercise program **before** surgery. They will assess your knee before surgery to determine strength, flexibility, fitness and function levels and provide recommendations on pre-surgery exercise.
- 4 Have a general check-up.** Visit your GP to assess your overall health, and check for any medical conditions that could compromise your surgery or recovery.
- 5 Have a dental examination.** Although infections after joint replacement are not common, an infection can occur if bacteria enter the bloodstream. So complete any dental procedures before your joint replacement surgery.
- 6 Ask about medications.** Your orthopaedic surgeon will advise you which over-the-counter and prescription medicines should not be taken before surgery. Blood thinners in particular may need to be stopped or replaced 1 to 2 weeks before surgery. Ask your surgeon about these.
- 7 Stop smoking.** This is a good idea at any time, but especially before major surgery as it reduces the risk of post-operative lung problems and improves healing.

8 **Lose weight** if recommended by your orthopaedic surgeon. If you are overweight, losing weight will help reduce stress on your new joint, which can be a contributing factor to possible wear of the new joint.

9 **Arrange for help.** If possible, plan for someone to be with you, especially for the first week or two at home. However if no-one is available, many patients go home alone after joint replacement. A post-op inpatient rehabilitation facility may also be recommended by your hospital.

10 **Consider home help services** as they may be useful when you are first at home. Patients can benefit from help for the first few weeks with bathing, cooking, cleaning and regaining independence.

11 **Plan what you will take to hospital.** Your hospital will advise you but they may suggest:

- > Comfortable day clothes such as a tracksuit / exercise clothes, comfortable rubber soled enclosed shoes or slippers
- > Toiletries
- > Nightwear
- > Long handled pick up stick, walking aids, frame, or crutches (if you already have them)

12 **Be conscious of infection.** If you have any sign of infection anywhere in your body (for example, a high temperature or fever; areas of skin that are red, swollen, painful or hot; cough or sore throat), contact your hospital or surgeon as this may affect your planned surgery.

13 **Prepare your skin.** It is very important that you do not have any scratches, cuts or signs of infection in your skin. If any of these are present, contact your orthopaedic surgeon for information on how to resolve this before surgery. Take special care to avoid gardening, major cleanups, cutting nails or any activity that runs the risk of damaging your skin in the week prior to your surgery.

14 **Eat well-balanced meals.** Be particularly health conscious during the weeks and months leading up to surgery, to promote better healing.

15 **Prioritise physiotherapy.** Your physiotherapy and post-op exercise regimen are critical for a successful outcome. Think of each exercise as a stepping-stone toward improved strength, range of motion and function.

16 **Adapt your environment.** Get ready before you go to the hospital by having a raised toilet seat, a stable shower bench or chair for bathing, firm pillows for your chairs, sofas and car, and 'reachers' that will allow you to grab objects without excessive bending. All necessary aids will be made available to you in hospital and available for loan or hire during the first weeks after surgery.

If you live alone:

- > Prepare your house before surgery so it's ready for your return
- > Put clean sheets on the bed
- > Prepare meals and freeze them in single serving containers
- > Minimise fall and trip hazards by picking up loose rugs, mats, and cables
- > Arrange to have someone collect your post and take care of pets if necessary
- > Make sure there is space to walk between rooms on crutches, without obstacles getting in your way
- > Ensure toiletries, towels, toilet paper and frequently worn clothes (such as socks and underwear) can be reached without bending or stretching too far
- > Consider using 'soap on a rope' to prevent you dropping soap in the shower (or use a stocking with soap in the toe end and tying the other end to a rail or tap)
- > Place slip-resistant mats inside and outside your shower or bath.

17 **Practise on crutches.** Even if you have spent time on crutches before, reacquaint yourself with them so the awkwardness won't be overwhelming after surgery.

18 **Actively participate.** Commit yourself to assume responsibility for your own care – follow precautions and do your exercises. The recovery process should never be seen as 'time lost'; it is the time you need to rest and recuperate.

19 **Talk with past patients.** Hearing about their experiences can help you gain perspective and ease your mind.

20 **Have a positive attitude** and visualise getting your life back. Be encouraged and focus on the high rate of success for joint procedures. The pain and deterioration of your joint have severely diminished your quality of life, so just think about how much your life can improve after surgery.

Recover and **regain mobility**

For the most successful recovery – and the fastest return to normal everyday life – here are some important considerations for your first few weeks after surgery.

Be aware of the movements to avoid after knee replacement

There are a few movements that you may be discouraged from doing in the first few months following knee replacement:

- > Kneeling
- > Twisting your body or your operated leg.

Check with your surgeon if and when you can resume these movements. It may be several months before you're able to start making these movements again, to ensure that the joint is fully healed.

Care for your wound and be aware of potential complications

It's important to care for your wound and avoid getting it wet until your surgeon advises you can. Following partial joint replacement, there are several things you need to look out for and manage as you recover. A certain amount of tenderness and swelling is normal immediately after surgery. However call your surgeon or hospital immediately if you notice any of the following symptoms:

- > Increased pain
- > Increased redness or swelling
- > Changes in the incision drainage (fluid coming from your wound)
- > Prolonged nausea or vomiting
- > Shortness of breath or chest pain
- > Chills or fever greater than 38 degrees celsius.

If you develop any signs of skin infection, urinary tract infection or abscessed teeth, contact your family doctor immediately. Treating these early can be crucial to protecting your new joint. Tell your dentist or family physician about your joint replacement before any procedure, such as dental work, a cardiac catheter, bladder exam, or any surgery. To learn more about potential complications, visit www.patients.stryker.com.au and login using the password **robotic**.

Don't forget to ask for help!

Although your ultimate goal is to do things for yourself, don't try to do too much too soon. Recuperation takes approximately 6 to 12 weeks, and you may feel weak during this time, as well as experiencing some discomfort and swelling. Post-operative swelling is normal but it is important to minimise it. If the joint swells, ice may be used. You can also reduce swelling by ensuring the leg is elevated some of the time.

Get comfortable and on top of your pain

It is expected that you will have some degree of pain in the weeks following surgery, however pain should not get in the way of your ability move your new joint, or complete your post-operative exercises. This means you are likely to need some form of pain medication. Make sure your surgeon, in conjunction with the hospital, arranges a pain management plan, including instructions for any pain medications before you go home.

If you have been sent home without a pain management plan or medication, and are experiencing pain, you should contact your surgeon's rooms. Take your pain medication according to your surgeon or hospital's advice. Your hospital may recommend you wear your elastic stockings for around 6 weeks after surgery. Following treatment, avoid tight clothes, including belts or tight underwear.

Household jobs

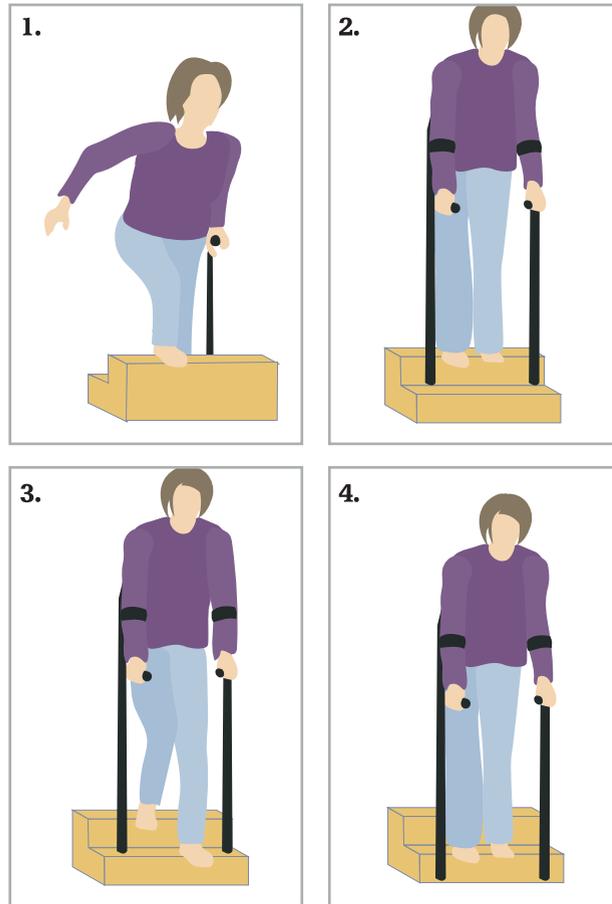
Avoid all strenuous and taxing jobs immediately after surgery. Only attempt small chores when you feel up to it, and even then, have somebody helping you if possible. Here are a few tips to help you recover:

- > Avoid heavy cleaning and household tasks (for example vacuuming, changing beds and cleaning showers). Ensure this is completed before the operation or ask family or friends to help in the first few weeks after surgery
- > Don't get down on your knees to scrub floors. Use a mop and long-handled brushes (or get someone else to do it!)
- > Plan ahead. For example, gather all your cooking supplies at one time, and sit down to prepare your meal, instead of standing. To provide a better working height, use a high stool, or put cushions on your chair when preparing meals
- > Place the cooking supplies and utensils you use more often where you can reach them without bending or stretching too much
- > Use a clothes horse instead of a washing line to avoid reaching. You won't be able to carry a washing basket when you're first discharged home, you may need to ask for help from family or friends.



Steps and stairs

While you're in hospital, your physiotherapist will show you the right way to manage steps and stairs.



1. Remember going up steps: good leg leads up first, then operated leg, then crutches or cane.

2,3,4. Down steps: crutches or cane first, then operated leg, then good leg.

Washing and bathing

Your occupational therapist may recommend that you stand to shower if your balance is good. However they may encourage you to sit down to attend to your legs and feet (such as during drying and dressing) to increase your safety.

It is a good idea to have more than one bar of soap in the shower as they can drop. Soap on a rope is helpful.

Make sure you follow any specific advice from occupational therapy staff, which may cover using specific equipment to help you maintain your independence.

Getting Dressed

Your occupational therapist will have advised you the safest method to get dressed. When you have returned home from hospital, you should continue following your therapist's advice when getting dressed for around 3 months.

- > When dressing, sit on the side of the bed or in a suitable chair. This will help your balance
- > Collect all the clothes you'll be wearing and put them on the bed next to you before you start. Avoid twisting and overstraining to reach them.
- > Do not wear tight garments over the wound – this can cause discomfort
- > Start wearing shoes as soon as you start to move around, using the shoehorn on the inside of the recently operated leg

Sleeping

Sleep in any position that is comfortable. Avoid putting a pillow under your new joint when sleeping on your back as this may prevent you regaining full extension of the knee joint.

Sexual activity

You can resume sexual intercourse as soon as you feel physically and mentally ready, taking care to protect your new joint. Many people resume sexual activity between 6 and 8 weeks after surgery, by which time the surgical incision should have healed, and the muscles and ligaments are healing properly. Avoid sexual positions that cause you pain in the recently operated knee area, and positions that may twist or strain the knee.

After knee replacement surgery, try to stick to sexual positions that involve lying on your unaffected side or your back at first.

Driving

You will need permission from your surgeon to start driving again. This is usually around 6 weeks after surgery, sometimes longer. It is important to follow your surgeon's advice, for your own safety and the safety of others. Driving too early may also have implications for your insurance should you have an accident. Also, avoid travelling long distances as a passenger, by car or by plane, for at least a month after your operation, as this can cause excessive swelling and discomfort.

Work and recreational activity

Your orthopaedic surgeon will recommend how much activity to attempt safely once you have fully recovered from joint replacement surgery. Depending on your job, you may also need to find ways to avoid the heavy demands of lifting, crawling and climbing.

Recreational activities such as cycling, golf and swimming, can usually be resumed around 3 months after surgery. Your surgeon may suggest avoiding certain activities altogether – including sports that require running, jumping, quick stopping or starting – that may place excessive stress your new joint. However, they will often encourage you to do lower impact exercises, such as cycling, swimming, golfing, bowling and level walking.

As successful as this procedure has become, results may vary from person to person, and it is important to have realistic expectations. Please ask your orthopaedic surgeon about the work or sporting activities that you would like to resume after surgery. It's important to remember that replacement joints do wear over time so discuss the timeframe you could expect your replacement hip to last and how you can ensure it lasts as long as possible.

For more information on what life will be like after recovery, ask your surgeon and visit www.patients.stryker.com.au

You can read about:

- > What to expect after recovery
- > Types of activities you can get back to enjoying
- > Adjusting to life with an implant
- > Frequently asked questions





Commit to your **exercise program**

To get the most benefit from your knee replacement surgery, rehabilitation will be very important. Starting an exercise program before surgery can build your strength and allow you to become familiar with the exercises, which you can confidently continue during your recovery. The exercises you'll see in this booklet are also demonstrated the www.patients.stryker.com.au website.

You can also visit www.patients.stryker.com.au for resources to help you with your exercise program including:

- > A general guide to rehabilitation exercises
- > Images and short videos to demonstrate how they're done
- > A daily exercise reminder sheet that helps you track your recovery.

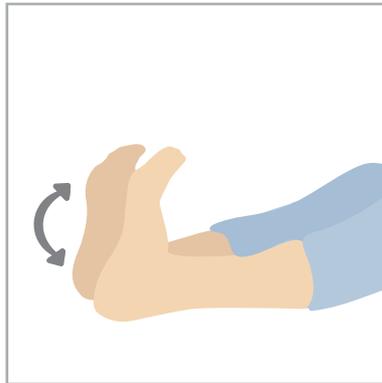
These exercises are a general guide to the type of exercises you may expect but *you should always follow the individual program your physiotherapist or surgeon has recommended for you*. Individual results may vary between patients. Each patient will experience a different post-operative activity level, depending on their own individual clinical factors.

Discuss with your doctor which exercises are most appropriate for you, how many you should do, and any movements you should avoid.

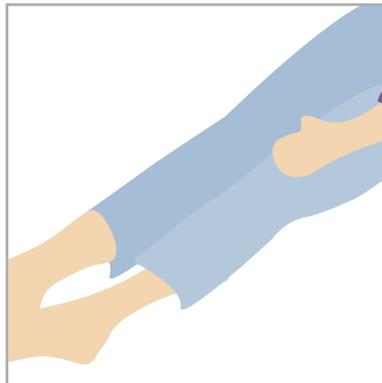
Your first group of exercises are designed to be done on your bed and can be started immediately after your surgery. Remember to start slowly and gently. If any of the exercises cause pain or discomfort stop immediately and ask your physiotherapist for advice.



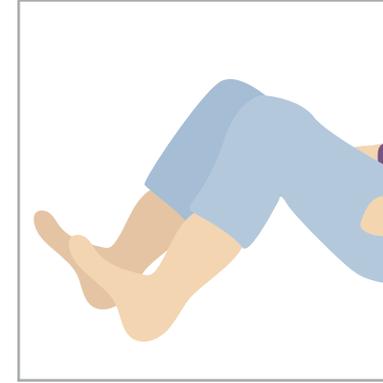
Deep breathing and coughing. Following a major operation it is very important to make sure you undertake regular, deep breathing and coughing exercises. This ensures you are getting air into the deepest part of your lungs and helps to prevent a chest infection. A deep breath followed by a strong cough should be done around 5 times each hour for the first week or so after your surgery.



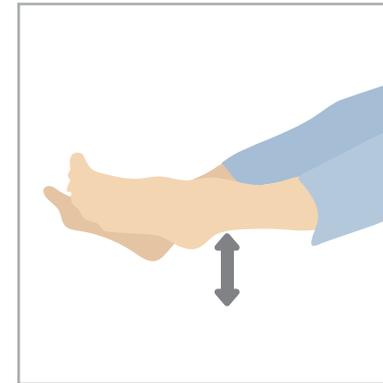
Ankle pumps. During normal day-to-day activity, the contraction of your leg muscles helps the blood in the lower part of your body to return to your heart. As you'll spend a significant amount of time in bed resting, it's very important that you do these exercises *very regularly* to keep the blood in your legs flowing normally and returning to your heart. Start with feet at right angles to your leg. Push your feet down towards the bed, then back to the right angle position. Repeat this 10 times.



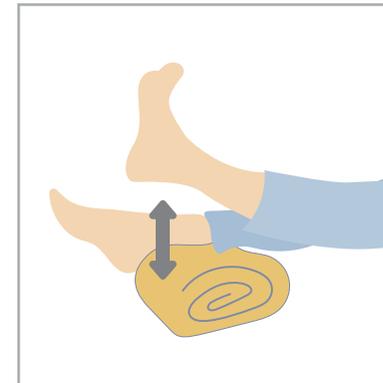
Static quads. This exercise works your quadriceps, the large muscle in the front of your thigh. This is a good way to get the muscle starting to work whilst limiting movement across the hip. Whilst sitting, with legs out straight, squeeze the quadriceps gently as you press the back of the knee against the bed. Then gradually increase the strength of the contraction. Once fully contracted, hold it for 5 seconds, release and repeat it 10 times.



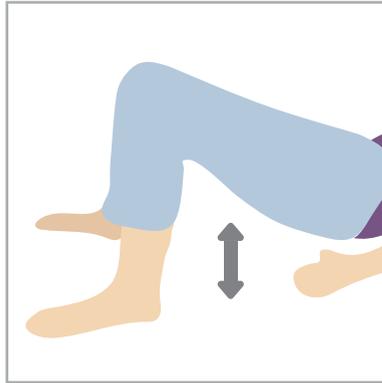
Static Gluts. This exercise contracts your gluteal (buttock) muscles. These are very important in walking and standing. First squeeze the muscle gently, then gradually make it tighter. Hold for 5 seconds and then release. Repeat this again 10 times.



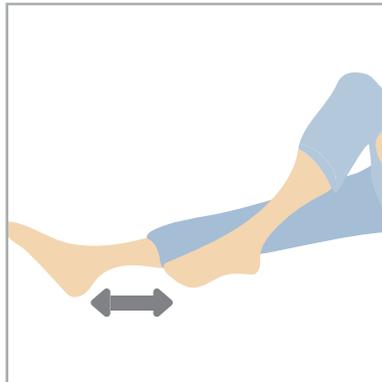
Inner range quads. Place a rolled up towel under your knee. Tighten your quadriceps – the large muscle at the front of your thigh – at the same time, push the back of your knee down into the towel and lift your heel off the bed. Hold the contraction for 5 seconds and slowly lower your leg. Repeat this 10 times. This is very important to have good control of your knee in a position that is nearly straight, as this assists you with using your knee correctly when standing and walking.



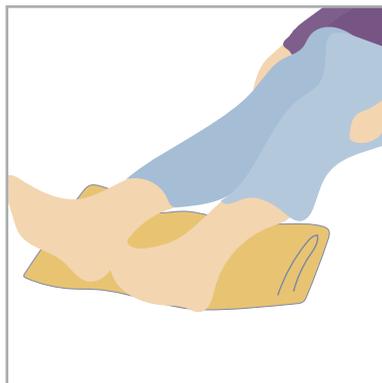
Straight leg raises. Place a rolled up towel under your heel, squeeze the quadriceps and push the back of the knee into the bed. Then lift your heel 10cm off the bed, this will lock your knee out straight without letting your knee bend. Hold this for several seconds if possible, then release gently. Repeat this 10 times. For this exercise you can add weight to your ankle if they become too easy. This can simply be done by placing a bag of rice into an old sock and tying that to your ankle.



Bridging. This is another exercise to work your gluteal muscles. Bend your knees up, squeeze your gluteal, or your buttock, muscles, and slightly lift your buttocks off the bed. Hold the contraction for 5 seconds, lower and repeat this 10 times. Be guided by your physiotherapist as to whether this exercise is appropriate for your type of hip replacement.



Knee flexion. This exercise strengthens the hamstrings at the back of your thigh that bend your knee and allow you to go up and down stairs. It also aims to improve the amount of bend in your knee. Put your hands under your thigh and assist your knee to bend so that your heel slides along the bed towards your buttocks. Hold for 10-15 seconds, or as long as you can, for the best stretch. Repeat this 10 times.



Knee extension. It is very important to regain full extension of your knee as quickly as possible. The following exercise may be uncomfortable and create an ache as it stretches your knee into a straightened position. Place a towel under your ankle, allow time for your leg to relax and stretch slowly into the straightened position. Then slowly and gently push down on the knee to help add pressure to increase the stretch. Hold for at least 30 seconds, or longer, if you can tolerate the stretch. The idea is to try and slowly increase this time with each attempt. Once finishing the stretch, bending your knee will be difficult, so take it slowly and start with small movements. This stretch should be done at least 5 times a day but the more frequently you stretch, the faster your leg will straighten.

The rest of the exercises can be done in your own lounge room once you have left the hospital. All you will need is a chair, and if possible, a mirror.



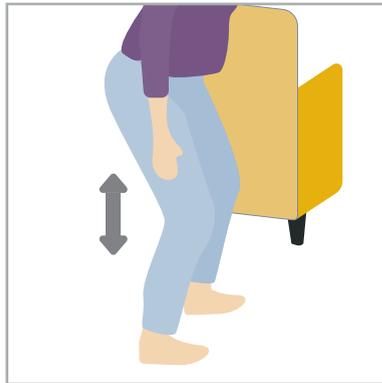
Advanced knee flexion. Sitting on the edge of a chair, with your thighs parallel to the floor, bend your knee and take your foot back as far as possible under the chair. You may like to use your good leg to help push your foot further back. Hold for at least 30 seconds, or as long as you can. Repeat 10 times.



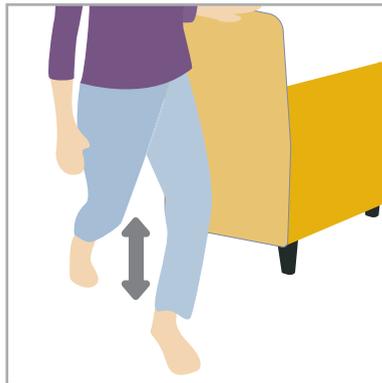
Calf stretching. Stand holding a chair for support and place your operated leg slightly behind you. With your feet facing straight ahead and keeping your heel down and your knee straight, lunge forward on your good leg. This will stretch the calf on the back of your operated leg. It is important to maintain the flexibility of your knee so that you can regain your full range of movement. Hold this stretch for 30 seconds.



Balance practice. The next exercise works the muscles around your pelvis to give you stability, better balance and safer walking. It is important that you do these on both legs as the moving leg works to create movement while the other leg also works hard to stand upright and stabilise your pelvis. Stand upright and use the support of a chair. A mirror will give you some visual clues as to how you are doing with this exercise. Gently swing your leg forward and backwards but at the same time, making sure the rest of your body stays very still. With increasing confidence, rely less on the chair for support, and more on your balance. Take care to swing your leg in a slow and controlled manner. Repeat this 20 times. Repeat this exercise but this time move your leg outwards to the side and then back to the centre. Again, make sure you keep your body still and focus on your balance. Repeat this 20 times.



Half squats. Standing alongside a chair, keeping your back straight and upright, gently bend at the knees and hips, slowly lowering yourself down. Go only as far as comfortable and use the chair for balance only and not to take your weight. Keep looking forward and resist the temptation to bend your back. Repeat the squat 10 times.



Lunges. Standing alongside a chair, place one leg in front of the other. You'll need to exercise both legs, so it doesn't matter which one you do first. Keep your back straight and look forward. Make sure both feet are pointing straight ahead and are parallel. Go only as far as comfortable and use the chair for balance only, and not to take your weight. Keep the movements slow and controlled. Repeat this 10 times for each leg.

My Exercise Reminder Sheet

Week Commencing _____

Track how many exercises you do each week. Consult with your physiotherapist or surgeon on which exercises and how many repetitions you should do.

Exercise	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Deep breathing and coughing							
Ankle pumps							
Static quads							
Static gluts							
Inner range quads							
Straight leg raises							
Bridging							
Knee Flexion							
Knee Extension							
Avanced Knee Flexion							
Calf Stretching							
Balance practice							
Half squats							
Lunges							

Visit patients.stryker.com.au to print more exercise reminder sheets.

