St George

Hip & Knee Clinic

TOTAL KNEE REPLACEMENT

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Essential Information for Patients

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TOTAL KNEE REPLACEMENT

You are considering undergoing total knee replacement surgery.
To help you understand what is involved in this type of surgery, we ask that you carefully read the following information.

What is osteoarthritis? (OA)

You have been diagnosed with osteoarthritis of your knee joint (osteo means bone - arthritis means inflammation and stiffness of a joint). Osteoarthritis is the most common joint disorder encountered worldwide. The incidence of osteoarthritis increases with age. It is more common in females, people who have damaged their joints playing sports or in people whose work practices have involved prolonged stress on the joint.

Knee cartilage can be compared to the rubber tread on an automobile wheel, very durable but susceptible to wear over time. Osteoarthritis is a degenerative process which results in the wearing out of the articular cartilage (joint surface). Over time the joint surface slowly breaks down until the underlying bone is exposed. This exposed bone can be very painful when the joint moves and bears weight. Driving on bare rims makes the ride very uncomfortable!

The normal knee is a complex joint consisting of bone surfaces and soft tissue ligament structures that are designed to move and endure the forces of everyday activity. The forces of the knee are centralised in three areas or compartments. Two of the compartments are located at the junction of the tibia and femur (medial and lateral compartments) and the third compartment lies beneath the knee cap (patellofemoral compartment). Each compartment absorbs the stress of activity through cartilage, a rubbery tissue that protects the bone

Osteoarthritis of the knee often develops in one weight-bearing compartment of the knee while the other two compartments remain relatively healthy. Since osteoarthritis is a progressive disease, in the short term it can be managed non-operatively. Non-operative treatment includes anti-inflammatory drugs, cortisone injections, orthotics and exercises including weight and fitness programmes which can delay the need for surgery but eventually surgical reconstruction of the knee may be necessary to continue an active lifestyle. Surgical techniques and joint replacement technology are rapidly evolving, providing treatment to restore people to pain-free active living.

Treatment of Osteoarthritis of the Knee

As osteoarthritis is a progressive disease, in the short term it can be managed non-operatively. Non-operative treatment includes anti-inflammatory drugs, cortisone injections, orthotics and exercises including a weight and fitness program which can delay the need for surgery. However surgical reconstruction of the knee may be necessary to continue an active lifestyle. Surgical techniques and joint replacement technology are rapidly evolving, providing treatment to restore people to pain-free active living.

When You Would Benefit From Total Knee Replacement

- When osteoarthritis of the knee involves more than one compartment. This is best detected by special x-ray views not widely available. (Rosenberg views).
- When pain and restricted mobility interfere with lifestyle. It has been clearly shown that there is a deterioration in general health when walking ability is compromised.
- When there is an unsatisfactory response to non surgical treatment.
- When unicompartmental arthroplasty (replacing one compartment of the knee) is not an option.

Oxford Knee Score

The Oxford knee score is a questionnaire used to measure the degree of pain and disability in osteoarthritis of the knee. At your consultation you will be given a form with 12 short questions before surgery and the questionnaire will be repeated at six weeks after surgery, then three months, six months and 12 months thereafter.

Score ranges between 0 – 48. Zero would be almost no knee function and 48 full, pain free function. The average score for people before knee replacement surgery is around 21. The average score after surgery is 39 giving an 18 point improvement. *Please note this score may be unreliable in patients with co-existent hip, spinal or other knee pathology.*

Deciding to Undergo Total Knee Replacement Surgery

Before consenting to surgery you should be satisfied you understand the reason and nature of this procedure and that it is the appropriate treatment in your case. You should take your time to make the decision to proceed with surgery and, if you would feel more confident, seek a second opinion.

As this is elective surgery, it is very important for patients undergoing this operation to understand the reasons for the procedure and to have a major role in making the informed choice to proceed with surgery rather than non-surgical methods of management. In most cases the decision to proceed with surgery is made because the advantages of surgery outweigh the potential disadvantages.

It is important you have a realistic expectation of your surgical outcome and you should discuss this fully with your surgeon. *No surgery can fully restore a joint to pre disease/trauma status. However successful knee replacement surgery gives a pain free joint with reasonable mobility.*

We encourage our patients to be informed and invite your input so as to promote co-operation and a team approach in working together to restore your knee function to the best possible state.

In general, Dr Szomor in general prefers to use the mobile bearing ceramic coated (ACS) prosthesis. Long term studies have demonstrated this choice of implant to have excellent long term outcomes. Please refer to Dr Szomor's website for more information regarding this prosthesis.

Preparing For Your Operation

Once you have made the decision to proceed with a total knee replacement, it is important to understand that a major factor in achieving a better recovery from this surgery is to regain your mobility as soon as possible following surgery.

It is highly beneficial to your recovery if you practice thigh strengthening exercises **PRIOR** to your operation. The quadriceps muscles are found on the front of your thigh and are sometimes called thigh muscles. For instructions please see diagrams on the last page of this brochure.

Where reduced fitness and muscle weakness complicates surgical outcome, your surgeon may advise referral to a sports physician or physiotherapist, for a pre-operative and/or post-operative fitness programme.

Hospital Admission Forms

Dr Szomor generally performs the knee replacements at St George Private Hospital, 1, South Street, Kogarah. Telephone: (02) 9598 5555 OR Waratah Private Hospital , 31 Dora Street, Hurstville. Telephone: (02) 9598 0000.

The paperwork for your admission including the consent will be organised in Dr Szomor's rooms. You will be provided with a folder which will include:

- Hospital Admission Booklet
- St George Hip & Knee Clinic Admission Protocol.
- Online booking information.
- Pre-Admission contact numbers.
- Referral form for blood tests including FBC, ESR and EUC.
- Referral for an MSU (urine).
- Referral for an ECG.
- Referral for a pre-operative assessment with an Anaesthetist or Cardiologist (if required).
- Referral for a group and hold (your blood group will be noted and a supply will be on hand to use if required. This is just precautionary. In the past some patients donated their own blood (autologous blood) several weeks before surgery and this was stored and used if required. This is an expensive service and there is a strict criteria for prospective donors. However it remains an option and you are asked to advise the Clinic if you wish to avail yourself of this facility, in order that the necessary arrangements can be made.

Pre Admission Clinic

Once the hospital has received your admission papers, a nursing sister will contact you by phone and arrange an appointment for you to attend the Pre-Admission Clinic (St George Private Hospital only). This is an educational session that will take about two hours and you will be given instructions about your procedure and the type of post-operative care you will require when discharged from hospital. The session is held at the hospital and a nurse will meet you in the main foyer on the Ground Floor. You may take a support person with you when you attend.

You have the option of having your pre-operative tests done at this Clinic.

Waratah Private Hospital will contact you and do a pre-admission assessment over the phone.

Anaesthetist

Dr Szomor's regular anaesthetists are from Alliance Anaesthetics (Tel: 9553 8902). Occasionally anaesthetists from another group may be used.

You should provide the Anaesthetist with a list of medications, advise them of any known allergies and discuss any previous anaesthetic problems. You will have the opportunity to discuss the effects and possible complication or any concerns you may have before proceeding with the procedure.

Day of Admission

All patients are asked to shower at home on the morning of surgery, using **PHISOHEX** (antibacterial solution) instead of soap. In particular, care should be taken to wash the relevant knee. Phisohex can be bought from a chemist without a prescription. ***DO NOT shave your legs.***

No nail polish or makeup should be worn. We advise patients not to take any jewellery or valuables with them to the hospital.

We strongly advise that you **stop smoking** for as long as possible before the surgery.

Please ensure you take all relevant **x-rays and MRI scans** to the hospital with you.

Please ensure you take **crutches** or a walking frame to hospital on admission. You will usually need them for the first 1-2 weeks following surgery and can discard them once you can fully weight bear.

Medications

Please take a list of your current medications and known allergies to the hospital on admission for your medical records. Hypertensive (blood pressure) and cardiac (heart) medications should be taken at the usual time with a small sip of water unless you have been advised otherwise by the anaesthetist or cardiac physician.

Aspirin and/or other anticoagulant and anti-inflammatory medications should have been ceased seven days before surgery unless in specially advised circumstances.

Take all your regular medications with you to the hospital. This includes vitamins and natural remedies. Most other regular medications can be deferred and taken after the surgery, unless advised otherwise by anaesthetist or cardiac physician.

Skin problems

If you develop any rashes, abrasions, cuts, pimples or sores on the leg you are having surgery on, please notify our office immediately. This sometimes means the operation will need to be deferred until the area has healed.

The Operation

Once you have been admitted to hospital, the anaesthetist will visit you prior to the surgery. You will also be fitted with compression stockings.

The operation is usually performed under a spinal or general anaesthetic. This is not to be confused with an epidural anaesthetic which is often used when a woman is having a baby. You will be fully sedated throughout the procedure. You will be in the Operating Theatre for approximately 2 to 2½ hours and in the Recovery Room for a further 2 hours.

When you wake up you will be in the Recovery Room and you may experience some soreness for which you will be kept comfortable with pain control medication. You will have an intravenous drip in your arm.

Standard Post-Operative Nursing Care Following Knee Replacement

In order to assist your recovery, Dr Szomor requires the following protocol to be implemented, after you have returned to the ward.

- You should be given regular pain medication. If this fails to control your pain to a tolerable level, please advise the nursing staff.
- Regular icing helps reduce swelling. The day after your surgery, an ice pack should be provided every 2-3 hours and left on for 20 minutes.
- The foot of your bed should be elevated during your hospital stay.
- It is important you begin the exercises shown on the last page of this brochure, as soon as the anaesthetic has worn off.
- You should be assisted in some mobilization/walking the morning following surgery, either by a physiotherapist or if unavailable that morning, by nursing staff.
- A physiotherapist should visit you some time each day following surgery and you should be instructed in appropriate exercises to help your recovery. By the time you leave hospital, you should be confident using your crutches or walking frame.
- The bandage on your leg should be removed the day after your surgery and you will be left with the dressing over the incision during your hospitalisation. This dressing **must be kept clean & dry at all times** and if by accident it becomes damp, it must be changed immediately.
- You will be given an anti-coagulant injection daily whilst you are in hospital.
- You should wear TED (compression stockings) for up to 4 week following your surgery, unless your surgeon tells you otherwise. If you think the stockings are too tight and uncomfortable due to swelling, please inform nursing staff. Failure to comply with this instruction will place you at increased risk of developing a DVT (blood clot).

Note: It is important to realise post-operative progress varies from patient to patient. Therefore some variation to this standard protocol may be authorised by your surgeon according to individual requirements.

Before Going Home From Hospital

- In most cases, dissolvable sutures are used for this surgery and therefore do not have to be removed.
- Please make sure you have procured the medication for pain control that has been prescribed for you when you leave hospital. Ensure you understand what to take and when to take it. Please make sure you have appropriate prescriptions and an adequate supply.
- As a precaution to minimize the risks of developing deep venous thrombosis (blood clots) it is recommended you take one tablet of low dose Aspirin once a day for four weeks following surgery.
- **Cartia** (ie Aspirin with a coating to protect the lining of your stomach) can be purchased without a prescription from your chemist. However this medication is not suitable for patients with a history of gastrointestinal problems and should be ceased immediately if you develop any gastrointestinal discomfort.

Rehabilitation Options:

As a general rule, Dr Szomor encourages patients to return to their homes and transference to a Rehabilitation Hospital is only indicated for people with special needs. Infection rates are lower for people who return to their homes.

At Home Following Surgery

- An appointment to see Dr Szomor about 12 days after surgery, has usually been made for you when your operation was booked. This is usually noted on the inside of your Knee Folder. However if you do not have an appointment, please make one when you return home.
- You can discard your crutches when you can fully weight bear without too much discomfort. A walking stick may give confidence when going out for the first 2-3 weeks.
- You will be unfit to drive a motor vehicle for approximately 6 weeks following total knee replacement. Research has shown there is a delayed response time in breaking for 1-4 weeks following knee surgery. You must only drive when you have regained full knee function.
- It is recommended you do not travel long distances by car or plane for four weeks following surgery owing to increased risk of developing DVT's (blood clots). If circumstances demand you must travel, speak with Dr Szomor about precautions that can be taken to minimise this risk.

Return to Work

You may return to normal duties as your knee function improves well enough for you to do your particular job. As a general guide you will be unfit for sedentary duties for eight weeks following surgery and unfit to resume manual duties for four months following surgery.

If your occupation requires particularly demanding knee function such as bending, lifting, squatting or climbing stairs you may be unfit to resume work for up to six months subject to assessment by Dr Szomor.

Signs To Be Aware Of After Knee Surgery

If you experience swelling and excessive pain and/or calf pain which does not respond to ice, elevation and rest you should contact our office during business hours.

If you require assistance outside of office hours, please contact St George Private Hospital on 02 9598 5555 or Waratah Private Hospital on 02 9598 0000 and speak with the Sister in Charge of the Orthopaedic Ward, or go to your GP or nearest public hospital.

Please also refer to Specific Complications Following Surgery.

How To Improve Your Recovery Process

Rapid recovery from this operation revolves around reducing pain, reducing swelling and muscle strengthening. Failure to address these goals will slow down your recovery considerably. Remember if pain, swelling and thigh weakness persists for more than a few weeks your recovery will be considerably prolonged.

- **Reduce Pain**

It is normal for the knee to be sore and swollen for a few weeks following surgery. You should ensure your pain medication is taken as prescribed as a means to prevent significant pain rather than waiting until pain is severe and impacting on your ability to do appropriate exercises.

Activities should be increased gradually. You should avoid prolonged walking or standing. You should avoid trying to bend your leg beyond 90 degrees as this will cause pain and swelling. Most uncontrolled pain is due to excessive swelling.

Excessive pain can be due to spending too much time on your feet before the thigh muscles have been adequately strengthened or inadequate or non-compliance to pain medication.

- **Reduce Swelling**

Initially elevation, regular quadriceps contractions, cold packs for 20 minutes every two hours and anti-inflammatory medication (optional) should diminish swelling rapidly. If swelling persists it is likely you are spending too much time on your feet. However if swelling does not gradually decrease after the first few days despite these measures, contact our office.

- **Muscle Strengthening**

You will have been seen by a physiotherapist whilst in hospital. They will have supervised your exercise programme. The thigh strengthening exercises you practiced before your surgery should also be continued until your muscle strength has returned to normal (see last page).

When you have seen Dr Szomor at your post-operative appointment, he will be able to advise you whether you require ongoing supervised physiotherapy or if you are suitable to continue with a self supervised, home based exercise programme.

Specific Complications Following Knee Surgery

All surgeries carry potential risks and the possibility of complications. Despite the advances in surgical technique and the experience of the surgeon, problems and complications can still occur and it is our duty to inform you and your right to be made aware of the possibility of complications. We have therefore outlined some specific complications of total knee replacement surgery, some complications of general surgery and anaesthesia.

This list of complications is not exhaustive. Rare and unusual problems can occur, although most of these are treatable and do not affect the end result. The success rate of this procedure in restoring pain free function to the knee is very good although there can be some deterioration over time.

- **Infection**: The infection rate is very low. Antibiotics are given at the time of surgery to reduce the risk of infection. The operation is performed in a sterile environment. However despite these precautions infection can still occur and cause prolonged disability. Although unlikely, chronic bone infection and/or distant organ infection eg the lungs and urinary system is a possibility. Other consequences of infection include joint stiffness, joint surface destruction and implant failure. Treatment involves antibiotics and often further surgery.
- **Respiratory tract infections**: This includes the development of pneumonia which can follow anaesthesia for surgical procedures. It is more common in the aged and very uncommon in the young and healthy. Treatment involves antibiotics, physiotherapy and respiratory support. Treatment is not always effective. In emergencies, special precautions are taken. Treatment of this condition usually involves anti-coagulant (medication to prevent the blood from clotting) administered either by intravenous drip and follow up medication or by oral anti-coagulant

therapy. Therapy for this condition is not always successful. If clots form in the arterial system then a stroke may occur.

- **Joint Stiffness:** Scar tissue can form in the knee after surgery. This can limit joint movement. Modern implant techniques combined with adequate rehabilitation keep this likelihood to a minimum. Treatment depends on the degree of joint stiffness. A slight loss in the ability to straighten the knee can usually be tolerated. Treatment for lack of motion can involve physiotherapy which may be extensive and occasionally further surgical procedures to remove the scar tissue. These procedures are not always successful in restoring full motion to the knee.

- **Bleeding:** Bleeding into the knee can occur following surgery. A small amount of bleeding inside the joint after the surgery can be considered normal and needs no treatment. It will resolve in time. Larger amounts of bleeding can occur in patients who have blood clotting abnormalities or who have been taking Aspirin or anti-inflammatory medications prior to surgery. Aspirin or anti-inflammatory medication should be ceased two weeks prior to surgery. You must ensure your surgeon is aware of all medications you are taking or have recently taken, including non-prescribed medications, prior to surgery.
  Excessive bleeding into the knee can require aspiration of the blood with a needle under local anaesthesia and occasionally an arthroscopy.

- **Damage to Associated Structures:** Total knee replacement carries a very small risk of damage to blood vessels and nerves of the leg. Damage to these structures could cause further disability and require further surgery.

- **Numbness** in part of the leg below the knee can occur due to interruption of skin nerves. This is often unavoidable and can be permanent. The numbness often reduces in time. The function of the knee joint is not affected.

- **Deep Venous Thrombosis:** This term refers to the formation of blood clots within the blood vessels. If they form in the veins they are known as deep venous thrombosis (DVT) which can cause swelling and pain in the legs and restriction of blood flow. These clots can travel to the lungs and cause a pulmonary embolus. This complication is more likely to happen in overweight people, women taking oral contraception and smokers. For this reason patients are advised to stop smoking. Long aeroplane flights also increase the chance of blood clots forming and therefore patients should not fly and have surgery in the same 4 -6 week period.

- **Implant Failure:** It is likely that your implant will last indefinitely. However, it is possible to have wearing, loosening, dislocation or breakage of the implant (up to 5% by ten years).

General Complications of Surgery and Anaesthesia

General anaesthesia in Australia is extremely safe. Australia has one of the best records for anaesthetic safety. However anaesthesia itself entails a degree of risk, some of which has been outlined. Rare and unusual problems can occur as a result of surgery and anaesthesia. Your anaesthetist will visit you in hospital before the procedure and you will have the opportunity to discuss the effects, possible complication, and any concerns you may have concerning your anaesthetic before proceeding with the procedure.

If you are concerned about the potential for complications or the advantages and disadvantages of a decision to proceed with surgery, from an anaesthetic view point, you should discuss these issues when you visit the anaesthetist for a pre-operative medical assessment before admission to hospital. If there is any doubt in your mind concerning the anaesthetic, we would strongly recommend that you seek an independent second opinion.

Future infections

An artificial implant can become infected in the future if there is infection elsewhere in the body. For this reason you are advised to see your general practitioner promptly for antibiotic cover if you develop any infection such as a urinary tract infection.

Dental Work

Following surgery you will **always** need to advise your dentist when having invasive dental work that you have undergone joint replacement surgery. As a general rule your dentist will need to administer 2 grams Ampicillin one hour before undertaking any invasive dental work.

For people who are allergic to Penicillin, it is recommended that you take 600mg Clindamycin orally, one hour before proceeding with dental work.

Long Term Outcome Studies

Following surgery it is **essential** you have regular reviews to assess your progress and check implant wear. This will necessitate you returning for review with updated x-rays one year after your operation, five years after your operation and then every two years thereafter.

However, once you have had your operation your assistance in compiling our data base would be greatly appreciated and it is an ideal time to collect relevant information when you return for your standard assessment visits. If you are willing to participate, you will be asked to complete the Oxford Knee score and your updated x-rays will be photographed when you return for your post-operative assessments.

You will also receive an Oxford Knee score in the post six months after your surgery which you are asked to complete and return to my office.

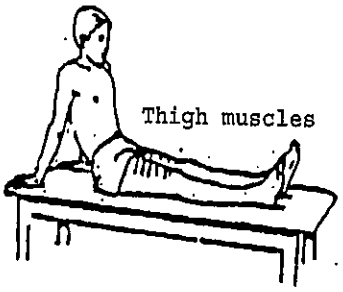
If data is used for statistical purposes it will be in de-identified forms, ie no names or personal information can be recognised.

Exercise Programme

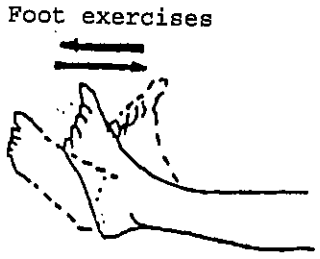
It is recommended you commence thigh strengthening exercises:

- Before your surgery.
- In the Recovery Room immediately following surgery.
- For the week following surgery until your post-operative visit.
- Following your post operative assessment – as directed by your surgeon.

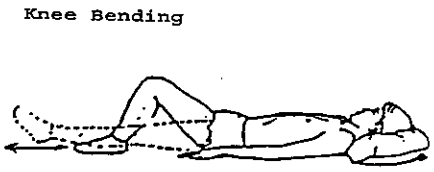
All exercises should be done gently. Exercising to the point of mild discomfort is most beneficial. It is very unlikely you will harm the knee with any routine post operative exercise programme.



1) With your leg completely straight, contract your thigh muscles strongly and hold for three seconds. Rest for three seconds in between contractions. Repeat the muscle contractions ten times per session. This set of exercises should be undertaken at least ten times per day.



2) From a lying position, move your foot backwards and forwards as far as it will go. Repeat this exercise five times in a session. Do this set of exercises at least ten times per day.



3) Knee bending and straightening. From a lying position bend your leg to 45 degrees. Repeat this exercise five times in a session. Do this set of exercises at least 10 times per day.