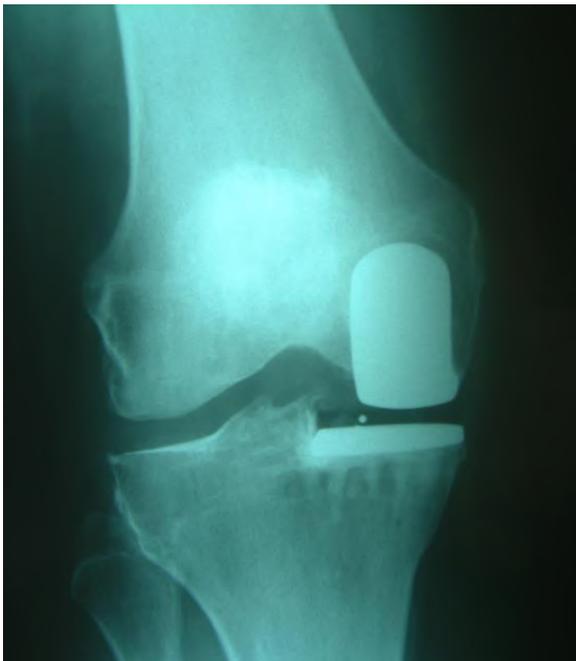


Associate Professor Craig Waller

PARTIAL KNEE REPLACEMENT

If part of your knee is severely damaged by osteoarthritis causing pain and limitation of lifestyle and activities, that has not responded to conservative treatments including analgesic and anti-inflammatory medications and a change in activity level then you may be a candidate for a *partial knee replacement*, also called unicompartmental knee replacement or hemiarthroplasty.



Oxford mobile bearing unicompartmental knee replacement

THE NORMAL KNEE

The knee is one of the largest and most complex joints in the body it joins the femur (thighbone) to the tibia (shinbone). It is a hinge type synovial joint with 2 articulating surfaces and is able to extend, flex and rotate. It has ligaments for stability and menisci which act as shock absorbers and to help protect the ends of the long bones along with articular cartilage which allow for frictionless movement in the joint.

The knee joint is vulnerable to acute injury and the development of osteoarthritis.

Osteoarthritis is condition whereby the joint surface lining or articular cartilage wears out. It is usually a progressive condition starting with mild damage to the articular cartilage and progressing to complete loss of articular cartilage, leaving exposed bare, raw bone at the joint

Osteoarthritis of the knee may occur in any one or more of the *three* compartments that make up the knee joint. These are the articulating surfaces where the lower end of the femur and the highest part of the tibia form the inner or *medial compartment* and the outer or *lateral compartment*, and the *patellofemoral* compartment which is formed by the kneecap (patella) and the front part of the femur.

The *medial compartment* is the most common site for osteoarthritis to occur in the knee.



Arthritic knee demonstrating loss of medial joint space



Normal knee

The symptoms of osteoarthritis are pain, limitation of movement, swelling, locking and loss of function.

The cause can be a result of injury or part of a disease process such as Rheumatoid arthritis. It can be caused the aging process, family history and normal wear and tear.

Surgical treatments include arthroscopic surgery, upper tibial osteotomy, total knee replacement and *partial knee replacement*

PARTIAL KNEE REPLACEMENT was first discussed in the 1950's, and has been performed for well over 30 years.

I recommend partial *knee replacement* as an option for some patients where their arthritis is confined to a single part or one compartment of the knee. It is a tissue preserving procedure with little blood loss and a shorter recovery than total knee replacement. Patients usually experience less postoperative pain, less swelling, and have easier rehabilitation than patients undergoing total knee replacement. In most cases, patients go home 1 to 3 days after the operation

Modern partial knee replacement using a smaller incision and a fully mobile bearing knee system, is a less invasive procedure where only the damaged bone and cartilage at the ends of the bone is removed and replaced with high quality metal and plastic components. The ligaments and undamaged parts of the knee are preserved.

Partial knee replacement allows patients a decrease in pain, a more natural feeling knee and an improved range of motion resulting in a return to normal activities and sports, including tennis and skiing.

Studies show that modern partial knee replacement performs very well in the majority of patients who are appropriate candidates. Since the implant preserves more tissue, a total knee replacement can be more easily performed if it is necessary due to arthritis developing in other parts of the joint.

Preparing for surgery

Medical evaluation

I will organise routine blood tests and ECG, prior to your surgery (sometimes on the day of surgery) at the Pre Admission Centre in the hospital. The pre admission nurse will also discuss issues related to your hospital stay. Occasionally I will ask you to see a consultant physician to check your medical health prior to surgery. If you are under the care of a cardiologist a consultation to confirm your suitability for surgery is advised.

Dental evaluation

Although the incidence of infection following partial knee replacement is rare. I recommend treatment of significant dental disease (including tooth extractions and periodontal work) be considered **before** your knee surgery.

Medications

Anticoagulant medication such as Plavix, Cartia or Aspirin should be ceased 7 days prior to surgery. Some other anticoagulants including Warfarin medication should be ceased with advice from your treating physician. All Vitamins and supplements should be ceased 10 days prior to surgery. All regular prescribed medications should be continued.

Anaesthetic

Partial knee replacement surgery is performed under general anaesthetic, often in combination with nerve blocks to assist with post-operative pain relief. A decision regarding anaesthetic choices will be made by you and the anaesthetist prior to your operation.

Skin preparation

Your knee and leg should be free of any skin infection or irritation. Contact my nurse (02 83826199) if you have any cuts or sores on your knee or leg or anywhere else on your body. Use an antibacterial wash such as PhisoHex to wash the body from the waist down to the foot, daily for the week prior to surgery.

Your surgery

The hospital will call you a day prior to your surgery to give you an arrival time and your fasting details. Please bring your x-rays if you still have them.

You will be admitted on the day of your surgery by the nursing staff who will complete your medical records. You will be showered and have the knee prepared and changed into a hospital gown. Your anaesthetist will meet you and you will be transferred to the operating theatre

The operation usually begins with an arthroscopy, during which I check all compartments of the knee to confirm that the damage is limited one compartment of the knee and that the ligaments are intact. Special saws and burrs are used to remove damaged cartilage and prepare the ends of the bones for your specifically size implants. The implants are usually inserted without bone cement as they are biologically coated for bony ingrowth. The knee is fully tested to check fit, alignment and range of movement and the wound carefully closed.

It will be covered with a waterproof dressing.

After your surgery you will be taken to the recovery ward where you will be monitored for 1-2 hours before being transferred to the ward.

Your hospital stay

Your hospital stay is usually 1-3 days. If you opt for inpatient rehabilitation it will be arranged by the hospital and you will be transferred directly from the hospital to the rehab facility.

You will have some discomfort but medication will be given to you to make you as comfortable as possible. Pain control is very important and you are encouraged to request and take pain medication as often as you need it. Medication to help prevent the formation of blood clots will be given.

On the day following surgery the physiotherapist will give you some breathing exercises, leg exercises and sit you out of bed and encourage you to weight bear and walk with a frame support.

Your dressing and sutures remain intact for 14 days' post operation. This will be removed at rehab or in my office if you go home. Arrangements for a follow up appointment can be made with my staff.

Risks and complications

Complications following partial knee replacement surgery are unusual, but surgical and medical complications can occur and may prolong or limit your recovery. The decision to proceed with surgery is made because the advantages outweigh the disadvantages.

Complications can include

- Allergic reactions to medications
- Blood loss requiring transfusion with its low risk of disease transmission
- Infection superficial or deep requiring antibiotics. Infection is rare. I try to keep hospital stays to a minimum.
- Blood Clots (DVT) My blood clot prevention program includes, early mobilisation, anticoagulant medication and TED stockings. Doppler ultrasound may be done if required.

- Damage to nerves or blood vessels. This is also rare but can lead to weakness and loss of sensation in part of the leg.
 - Wound or scar irritation. Some sensitivity or small areas of numbness may occur at the wound site. This usually decreases over time and will not affect the function of your new knee.
 - Muscle weakness. This is usually addressed over time with physiotherapy and exercise.
- Please feel free to discuss any queries with me or my nurse.

Advice following partial knee replacement surgery

Stay mobile. *Use aids and rails until you feel strong and your balance and strength has returned. You may sleep in any position you find comfortable and sit in any chair you find suitable.*

Preventing infection. If you have surgery, invasive dental procedures or large skin cuts I recommend antibiotic cover.

Diet. A balanced diet is important following your surgery.

Driving. You may drive when you are walking comfortably and not taking strong analgesics for pain.

Activity. Enjoy your new knee and stay active. Return to sport and activities as you feel comfortable.

Frequently asked questions

How long will my new partial knee replacement last? Research has shown that the newer types of implants I use have lower wear rates giving them longer life expectancies. In younger patients' implants may not last a lifetime requiring revision if arthritis progresses or implants show signs of wear.

Will I have pain after my partial knee replacement?

You can expect to take pain medication for 2-3 weeks and occasional simple analgesics for up to 6 weeks following surgery.

How long will I be "out of action" following partial knee replacement

You will be in hospital approximately 1-3 days and then home or rehab (if you choose) for approx. 7 days. You may require a stick for a couple of weeks. Depending on your type of work you may return in 4 – 6 weeks. Light duties may be undertaken sooner as comfort allows. Heavier work may mean a delay in return for up to 3 months.

What about exercise?

Daily activities as tolerated and return to active pursuits as comfort allows. Walking, pool based exercises and cycling are acceptable. You may return to sport as advised by me. Golf usually at 6 weeks. Return to other sports as strength and endurance returns.

What are my restrictions?

The partial knee replacement implants that I use are 'high performance implants' that allow patients to resume unrestricted activities, some impact sports. You should not feel limited by your partial knee replacement.

So please increase your activity level and active and "go for it!"

In summary partial knee replacement is an extremely successful procedure that allows patients to resume an active lifestyle in comfort.

Associate Professor Craig Waller