

# Hip Replacement Surgery - Anterior Approach

Hip replacement surgery is a great operation providing relief of pain, stiffness and disability caused by hip arthritis. For milder symptoms, a lower risk approach is weight loss, paracetamol, anti-inflammatory tablets, activity modification and a walking stick or hiking pole.

## Why have a hip replacement?

Hip replacement surgery is performed to relieve pain, stiffness, and disability caused by hip arthritis. The most common reason is osteoarthritis. Osteoarthritis occurs from the hip wearing out – often there is an underlying “design fault” in the shape of the hip, or soft bone, or previous injury contributing to it wearing out. The pain is most commonly felt in the groin, but some people get the pain in the thigh, knee, buttock, or a combination.



Figure 1. Hip Osteoarthritis. This shows both hips, the one on the left of the page is normal. The one on the right shows the joint space to have gone, there are holes in the bone, and the ball no longer round.

## Design Basics

The hip is a ball and socket joint between the pelvis and the thigh bone (femur). A hip replacement removes the femoral head and replaces it with a new ball. That ball needs a way of connecting it to the femur – the surgeon puts a stem inside the relatively hollow femur. Between the ball and the socket is some sort of bearing surface. Traditionally plastic (polyethylene) was used. Now the plastic component is medical grade high molecular weight, and highly cross-linked. The wear rate is expected to be less than 0.04mm/year, an order of magnitude better than plastic of last century. Highly cross-linked polyethylene is backed by evidence in the Australian Registry.



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## Anterior approach

An incision 10-14cm on the front, upper thigh is used. It has advantages of a lower dislocation rate better pelvic floor strength, and possibly less restrictions after surgery. Most patients are walking with one crutch the day after surgery.

## Rapid Recovery Surgery

Local anaesthetic mixture infiltration into all layers of the wound, minimizing the pain, and usually allows you to start walking with the assistance of a physiotherapist two hours after surgery. One night in hospital is sufficient for 70% of our patients.

## The Taperloc Hip Replacement



Figure 2. Taperloc Microplasty Hip Replacement

The Taperloc Microplasty is a modification of 30-year-old design with a titanium stem and cup that bone "grows on to". The changes to the original design allows for greater variations in shape of patients. The socket is called the G7 and allows the surgeon additional stability options in small patients, and a ceramic liner if required.

## To Have a Hip Replacement

You need to read this brochure.

Your health needs to be good or at least medically stable, and no sources of infection.

You need some blood tests

You need to have a preadmission clinic at the hospital, and surgeon's rooms.

# Why is it better to have only one night in Hospital?

## Firstly – reflect on the old days

Two complications were particularly prominent: infections and blood clots. Antibiotics were added to the treatment, blood thinners also administered. Through the 1990's wound were more prone to bleed, and required more dressing changing. Drain tubes were a routine part of surgery. To control pain morphine pumps were used, more recently "patient controlled analgesic systems". These required a drip to be running and oxygen administered. Urinary catheters were required in 80% of our patients in 2003, so it became routine to insert at the start of the operation. Patients were effectively tied to the bed.

Immobility adds to blood clots, chest infections, even pressure sores. Urinary catheters add to urinary infections. Bleeding from the wounds required dressing changes, exposing patients potentially to other patients bacteria, even in wards where single beds are available.

## A new way of looking at it

If the surgery was not very painful, the patients could get up and move. We find the first time patients get up they get dizzy, whether it is day three after surgery, or two hours. The next time they are usually fine. If they can get up and walk, they are less likely to get blood clots – in fact in the absence of a history or family history of blood clots, we virtually never see them. If the patient is comfortable, and only needs tablets for pain, there is no need for a morphine machine. No morphine machine means the patient need not be "tied to the bed", and probably won't have nausea or vomiting. We find patients are almost always independent by after lunch the day after surgery. There are surgeons in the USA doing joint replacements as day surgery!

If the patient is moving well, pain well controlled, not nauseated, and safe, why not go home? By getting out of hospital, the risk of being exposed to other patients' bacteria is dramatically reduced, and our lower infection rate reflects this. We do have a scoring system RAPT score to check it is plausible to go home. Scores of more than 9 will probably go home the day after surgery; scores less than 5 probably need to go to rehabilitation.

Perversely, the funding systems discourage the hospitals from short stay. The hospital is paid less for short stays, and the patients and their family need to work harder. But it is in the interest of better results to go home. Some people feel that they are being "thrown out of hospital" – no one goes home if they don't pass the checklist. By going home – less infections, and less clots.

Going to the patients own home is usually best. At someone else's house, there is a lesser tendency for the patient to get up and do things. Getting up and doing things is what we need! It is hard to check the temporary and permanent house are both safe. Where people live alone, we'd like a friend or relative to stay the first night or two at home with the patient. Where family live next door, or within 15 minutes, even an empty house is often acceptable.

## Day surgery Total Hip Replacements are possible.

30% of joint replacement surgery in USA is performed as day surgery. The only reason this is not mainstream in Australia is the lack of support for this from the health insurance companies, who have an unrealistic hope the surgery will cost 1/2 of what it costs in an overnight facility. As each insurance company sees sense - we will increase the number of day cases being done.

## Alternate Designs & Approaches

### Bikini & Direct Anterior Incision

The incision we usually use is the one on the right of this image (blue), it is a hockey stick shape, it angles away from the nerve branches (in blue) that supply the outer aspect of the thigh. The bikini incision (green) and the "direct anterior" incisions have a higher risk of nerve injury, and it is difficult to lengthen the incision if any problem during the operation occurs. Both are cosmetically very good.

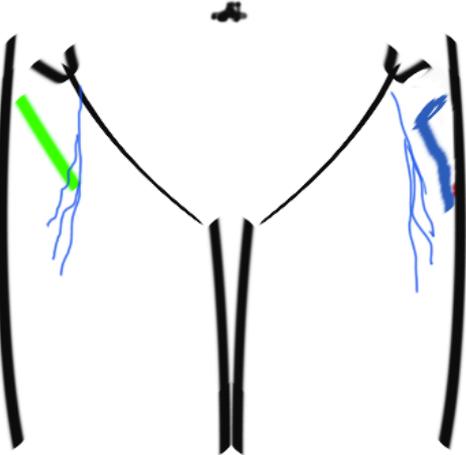


Figure 3. Bikini vs anterior incision. Standard "7" has less risk of numbness over the outer thigh after surgery

### Mini-posterior Hip Approach

Our standard approach for the last 15 years has been the mini-posterior approach, splitting the buttock muscle to get access, and is what our rapid recovery surgery is built on. It has a disadvantage of dislocations occurring in 1% of cases sometimes years after the surgery. "Hip precautions" are needed in the first three months after surgery. If a patient has weakness of the hip tendons that need repairing - it may be easier to do through the posterior approach.

### Ceramic Bearings

"Ceramic on Ceramic" designs are meant to make the hip replacement last longer. Rarely, the ceramic can squeak, break, or develop "stripe wear" requiring re-operation. Dislocation and other failures of all hip replacements may still occur. The Australian Joint Registry demonstrated no difference than modern polyethylene.

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### Cemented Hip Replacement

The first truly successful hip replacements in 1962 were cemented and whilst we no longer use Sir John Charnley's design, we do use its successor, the C-Stem, and competitors MS-30 and the Exeter. They do slightly reduce bleeding from the bone, and can be used if the bone is soft with osteoporosis. The skin incision may need to be a bit larger. Most often, the cup is still an uncemented design improving modularity, and decreasing intra-operative risks.

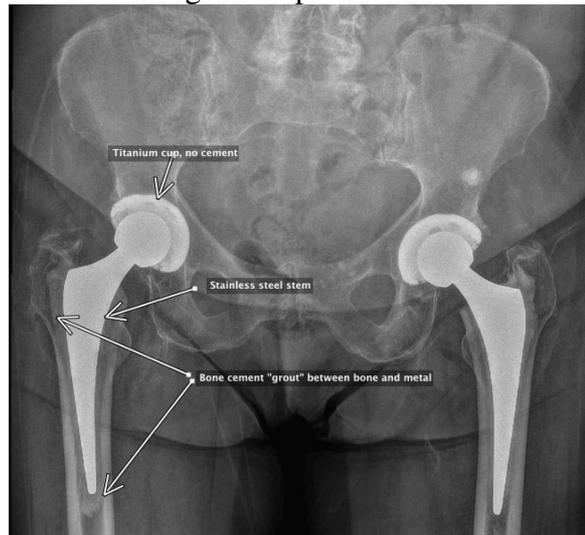


Figure 4. Hybrid C-Stem. The bone cement is seen as a white-grey cloud between the implant and the bone.

### The Corail implant

The Corail is a European uncemented implant that is commonly used in Ballarat. For some patients it fits the bone better, and it is available with a collar if the bone quality is doubtful.



# The Process of Having a Hip Replacement

## *Getting fit for surgery*

The greatest predictor of the recovery time is how fit you are before surgery. Walking or cycling for the weeks before surgery is a good idea. In the week prior to surgery – avoid gardening or other activities where you might get a cut or infection that could cause your surgery to be cancelled.

## *Pre-admission Clinic at St John of God*

St John of God run a pre-admission clinic at Hospital to perform an ECG & the nurse will ensure the required tests have been done and that you are familiar with the hospital and its layout. Sometimes this is arranged by telephone alone.

## *Preadmission clinic BallaratOSM*

Your next appointment at the rooms will be our own preadmission clinic. We need you to bring your support person to this appointment, preferably the one taking you home from hospital. At this appointment we will write your medication chart for surgery, discuss post-operative medications, and make changes to your current medications as required. We spend time discussing expectations, surgery, your discharge plan (which is usually the day after surgery), and go through any questions you may have. It is important to bring your current medications to this appointment. We provide a “pre-op pack” of compression stockings, Somac (an anti-acid tablet) and a bottle of Powerade to drink before coming to hospital.

## *Femoral Head Donation*

Hip replacement removes your existing femoral head, and replaces it with a new metal or ceramic one. The removed femoral head is usually incinerated. The Pre-op clinic at St Johns will discuss with you donating your femoral head to the Bone Bank, where it is processed for further use. By donating, you help someone else in need, from hip surgery, to children with cancer!

## *Physician Assessment*

Physicians are doctors specializing in adult internal medicine, like I specialize in orthopaedic surgery. Most patients having a hip replacement will not need a physician unless they have other serious health issues.

## *Stopping medications before surgery*

Potent anticoagulants like Plavix and Iscover are stopped 10 days prior to surgery. In most patients aspirin is stopped 5 days before surgery, warfarin also but some patients may need Clexane injections. Tablets used purely for blood pressure should NOT be taken on day of surgery. Ensure your surgeon knows what medications you normally take.

## *What to bring to hospital*

You will only be staying a night or so, **don't bring too much, "cabin baggage" size bag should suffice.** Wear to hospital the clothes you will wear home. Nightshirts and boxer shorts allow for easier access for dressings / bandages / having the wound attended to & topped up with local anaesthetic agents. A second set of night attire allows for any drama like needing to wash the first set. Bring some magazines, but don't bother with laptops. There are both positives & negatives to bringing your mobile phone. Minimize jewelry.

## *Admission to hospital*

Typically patients are admitted on the day of surgery to the hospital through the Surgical Admission Unit. Same day admission has successfully reduced the risk of post-operative infections. Prior to surgery, no solid food is permitted for six hours, and Gatorade or clear fluid 2 hours.

## *Spinal Anaesthetic, and General*

The best anaesthetic overall is a combined spinal and general anaesthetic. The spinal anaesthetic means you can have a very light general anaesthetic and wake easily ready to walk. The anaesthetist will meet you before you go to the operating theatre to discuss any concerns. If you are a high-risk patient, it may be appropriate to meet the anaesthetist some weeks prior to surgery.

### *Recovery room*

Typically you will wake up in the recovery room, located adjacent to the operating theatre. The nurses there closely monitor you. Ice packs may be applied to the wound. They may ask you “do you have any pain?” – you should answer “NO” or “minimal”. If you wish to speak to your surgeon – say so, rather than saying you have pain! The recovery nurses have a protocol allowing them to give you A LOT of drugs if you say you have pain. These drugs may make you feel sick or vomit.

### *Tubes*

The drip is usually disconnected once you're drinking & eating. Oxygen is rarely needed after the recovery room. A tiny tube into your joint is hidden in the dressing - be careful of it!!

### *Orthopaedic Ward*

It is important to start taking painkillers before the anaesthetic starts wearing off. It is essential to drink fluid and eat food as soon as possible after surgery. Avoid fruit juices to reduce nausea. Don't pick rich food off the menu!

### *Physiotherapy*

Both hospitals in Ballarat have their own physiotherapy service paid for by your insurance. Our intention is to have you out of bed on the day of surgery to minimize the risk of blood clots. The physiotherapist will be there probably the first time you get up, then just the nurses. 95% of people are independent the day after surgery.

Walking aids may start with a frame, and changes to using a single crutch as soon as possible. Most people are good enough to use only single elbow crutch at discharge from hospital.

### *Post operative aims for recovery*

First time up	1 hour (2-24)
Independent	4 hours (8-48)
Discharge home	1 day (1-7)
Inpatient rehabilitation	5%
Outpatient physiotherapy	2%

### *What will the leg be like?*

The wound will often be a bit tender and initially have a bulky dressing on it. Ice packs are used frequently to reduce pain and swelling. The swelling often gets worse over the first week. The bruise eventually may go to your ankle.

### *Support person & discharge*

The value of having a SINGLE family or other support person to deal with communications is impossible to value.

**IF YOUR FAMILY STRONGLY FEEL YOU ARE NOT SAFE TO GO HOME – IT IS ALMOST IMPOSSIBLE FOR US TO DISCHARGE YOU HOME! BRING THEM TO THE NEXT APPOINTMENT WITH YOUR SURGEON BEFORE SURGERY.**

### *Do I need to go to inpatient rehabilitation?*

The majority of people DO NOT need inpatient rehabilitation. We have found that even people at 80 years old are usually right by 5 days to go directly home – if there will be someone with them. Going to a friend's house is not always ideal, as it may need minor modifications – like have a rail in the shower to hang on to. Preferably the shower can be walked directly into rather than needing to step into a shower/bath.

## Weekly Progress

### First week:

- Walking
- **Getting to a single crutch or stick**
- **Avoid excessive bending at the hip**
- Panadol, Mobic, some Tramadol
- **OK to lie on the operated side in bed**

### Second week:

- Wound checked at about 10 days after surgery at the surgeon's rooms
- Most people using a walking stick
- Most people ready to drive.
- Take the Mobic

### Third week

- OK to lay in any position
- Continue the Mobic unless a problem
- It should be OK to sit on normal chairs for normal height patients
- It should be OK to drive a car - irrespective of which leg had surgery, and whether manual or automatic. Very low sports and very heavy clutches & trucks should wait a bit longer !!!

### Fourth Week

- Stop the Mobic
- Most people should be able to drive under certain circumstances.

### Sixth week:

- In a sitting position, start bending your hip so your knee comes up to your chest, **roll your knee OUTWARDS to put on a sock**
- **OK to kneel on operated side knee – keep hip fairly straight and only work directly in front of you.**

### Three months

- **OK to access your foot to put on shoes, tie shoelaces, socks and dry toes. However, some care is still required, it should be done in a seated position, with the knees apart, and the foot up on the opposite leg's knee.**

## Back up plan

A key part to going home is that you can call me if there is a problem. In hours you can call the surgeons rooms on **5332 2969 and speak with the nurse or your surgeon.** Out of hours you can call the St John's Orthopaedic Ward on **5320 2140**, or the Ballarat Base Hospital ward on 5320 4640. You will have your surgeon's mobile phone number - it is OK to ring your surgeon!!!

Most problems only require advice, but perhaps one person per year needs to go to the emergency department.

## What to ring us about...

Nausea/vomiting  
Black bowel motions  
Constipation not fixed by three days  
Feeling unwell  
Pain not controlled  
Bleeding through the dressing

## Bowels

Constipation is a problem best avoided by eating plenty of fruit and walking frequently. Avoid Panadeine Forte, a common painkiller, although all painkillers can do it. Prune or cloudy pear juice is a classic remedy and probably should be taken on day two (Saturday after a Thursday operation).

If your bowels haven't worked within three days of surgery please seek advice from your local Pharmacy. If they still haven't worked the next day – contact you surgeon.

## Driving after Hip Replacement

The Australian Arthroplasty Society has modified their requirements to being able to perform an emergency stop. Our research has demonstrated that patient's reaction times achieve government requirements to drive a car at two weeks for hip replacement, and most knees are ready at that time too. Being able to walk with only one crutch is a reliable test of this function. Concentration however may not be ideal with strong pain killers (eg Norspan patch) and one needs to be careful to avoid putting the hip into a dislocation position.

It may seem reasonable to drive sooner if:

- You are walking without crutches
- You are not using strong pain killers
- You drive an automatic and left hip had the surgery

When you start driving you should:

- Have mobile phone turned off
- Have radio/music turned off
- Start with short distances
- Avoid peak hour traffic
- Avoid tailgating – if your reaction times are off by 0.8sec this could translate to 50m more stopping distance.

• Anterior approach hips probably are safer getting in & out of the car, and under the steering wheel. They may be safer in a lower seat earlier than traditional approaches.

Special vehicles - commercial vehicles, low sport cars, and heavy clutch vehicles should not be driven until six weeks.

## THINGS TO REMEMBER FOREVER!!

### *Dislocation Risk*

**Dislocations whilst rare are serious.** The hip is a ball and socket joint, but the two are not “locked” together. In the native hip (before replacement) there is a ligament in the middle of the joint and a “locking ring” around the edge. Neither of these exists after a hip replacement procedure.

The biggest risk period is the first 3-4 months, but there is always a risk with “crazy movements” forever. Crossing your legs over whilst laying down or standing and rapidly twisting away from the hip replacement side are potentially dangerous. The expected dislocation rate is 0.2% following anterior approaches.

At **six weeks** it is safe to dry your toes sitting, knees apart, foot of the hip replacement side sitting on the knee of the opposite side.

**DO NOT EVER lurch down to the outer side of your leg with your knees together.**

### *Infection Risk & presentation*

Getting an infection in your joint replacement is serious. If you are sick, and the joint is sore - infection is the most likely diagnosis, and is serious. Go to an emergency department - usually St John of God for our private patient in Ballarat. The common sources we see are damage to the skin (rose thorn, cut foot), from the mouth (dental abscess) and urinary infections. Wear appropriate gloves / trousers / and possibly safety boots to garden. Get any infections treated quickly – antibiotics alone will NOT cure a joint replacement infection – further surgery AND antibiotics have only a 90% success.

### *Dental and invasive procedures\*\*\**

You should tell your dentist you have a hip replacement. Dental abscess, infected root canals and gingivitis carry a risk of spreading infection into your joint replacement. A large dose of antibiotics is required an hour before some dental treatment.

# Pain Management after Orthopaedic Surgery

Being comfortable after surgery allows early mobilisation, reduces complications and you go home sooner.

## Pain score

Nurses in recovery and the ward will ask you whether you have any pain, and to score it out of ten. It is important that you tell them if the pain you complain of is somewhere different than where the operation was. Most patients have a score of close to zero in recovery. If you report 2-3, usually tablets are given, at 5/10 injections of morphine. For comparison – 7/10 has visible signs of pain – teeth clenched, pale appearance, sweaty brow. 10/10 pain is rarely seen, but described as “screaming with pain”.

We'd rather the nurses just asked "are you comfortable enough?"

## Local Infiltration Analgesia

During joint replacement operations, local anaesthetic is infiltrated around the wound by the surgeon. This is mixed with steroidal & non-steroidal anti-inflammatories and adrenaline. The surgeon leaves a wound catheter buried in the bandaging so extra drugs can be injected around the joint replacement the following morning. It has a filter on it to avoid any contamination.

## Pain Patch.

Norspan, a narcotic patch, is applied to the skin and gradually releases analgesia. If the patch is too hot, you may become nauseous or drowsy – typically in the shower. Try to keep the patch out of hot water. If your joint is sore you can warm up the patch by giving it a rub, or put on a jumper. The patch typically is changed six days after surgery then stays on 10 days. Some thinner and older patients may not require it.

## Background tablets

Mobic 7.5mg is used twice a day for three weeks. For those that have a history of stomach ulcer, we ask you take an extra

anti-ulcer tablet (eg Nexium/Somac) the night before and morning of surgery. Panadol is used for the first few weeks.

## Top up medications

Tramal is my preferred drug to top up. Typically the order is 1-2 tablets every 4 hours as required. Tramal is not perfect, it can cause nausea or hallucinations, and can't be used with many anti-depressants. Usually we have had an opportunity of trying them in hospital before you go home.

## Swelling control reduces pain

**RICE: Rest / Ice / Compression / Elevation**

**Rest** doesn't mean do nothing, but not do too much. Sitting is NOT good rest as the lower leg becomes swollen.

**Ice packs** are first applied in recovery, or as soon as possible after the surgery. Be a little careful with areas that have local anaesthetic that you may not be able to feel how cold it is. Do NOT apply ice directly to the skin, and apply it only 20 minutes at a time.

**Compression** is usually a bulky dressing. Venosan travel socks are worn and are worthwhile to minimise foot and leg swelling.

**Elevation.** In the first two weeks, put your leg up either on the bed, or lounge suite when you're not moving about. Do not sit for longer than 10-15 minutes at a time.

## Avoiding nausea and vomiting

Our aim is to have you drinking fluid as soon as possible after the surgery, and start eating food by six hours. Avoid orange juice for the first three days as these sweet & acidic drinks can make you nauseous. Gatorade is a sugar & salt drink – this can be used up to two hours before surgery, and when you are alert after surgery.

If you feel sick, tell the nursing staff. It can usually be fixed with anti-nausea medication, but it may be that if you're comfortable and nauseous – that you're over drugged and the pain patch should be removed. It is easier to control it early than to fix it once you start vomiting.

## Complications following hip replacement

A hip replacement is a major surgical procedure carrying substantial risks. This list cannot be complete, but does deal with more common problems. Accepting and minimizing these risks is a responsibility of both the patient and the surgeon. If the patient doesn't accept that a joint replacement occasionally goes wrong, then they should not submit themselves to surgery.

### *Neurovascular injury*

The anterior approach causes minor damage to the sensation over the side of the thigh. Everyone gets some numbness for a while, most often it is not noticeable at 3 years. Rarely large nerves or arteries to the leg can be injured, although the cause of nerve injury is only found 50% of the time. Injury to nerves or arteries, permanent loss of function, or viability of the limb is possible.

### *Fracture is more common after anterior approach - possibly 1%*

A fracture of the femoral shaft can occur at the time of surgery, or after injury. A cable around the femur and restricted weight bearing is the common treatment, some fractures can't be improved with additional surgery and crutches and time is required. Late post-operative fractures may require extensive surgery and a much slower recovery. Fracture on the pelvic side is reported in 0.4% of cases. This may require re-operation, prolonged time on walking aids, and a delay to good result by a year.

### *Urinary catheterisation*

Urinary catheters are not used routinely. Since using local anaesthetic and early mobilization, most patients have been able to use their bladder normally. However, a small number of patients may still require a urinary catheter hopefully only overnight. People who have previously had urological procedures and problems are more likely to have problems. Please tell us.

### *Thrombosis & pulmonary embolism.*

Clots can occur within the veins of the leg and pelvis before, during or after surgery. They carry a risk of dislodging and moving up to the lung. It can be fatal. A "post phlebotic syndrome" where the leg remains swollen can occur, and may develop ulcers. Since using "local infiltration" and early

mobilization we have only seen blood clots in people who have previously had blood clots. We use Aspirin (Cartia), early mobilisation and stockings to help minimise the risk. People that have had blood clots, or family members with clots, need more treatment. PLEASE TELL US!

### *Infection.*

Infections can occur directly after an operation, or out of the blue years later. The infection rate is about 1 in 600. Most infection patients carry additional risk factors such as diabetes, poorly controlled diabetes, obesity, malnutrition or cigarette smoking. To minimize the risk of infection, we prepare the operation site with antiseptics, use antiseptic impregnated drapes, and use intravenous antibiotics at the time of surgery. At St John's & BDPC we have clean air operating theatres and "space-suits". You are at particular risk for the first six months following surgery. Any dental extractions, urethral catheterisations, or colonoscopy are usually "covered" with prophylactic antibiotics. Any cuts to your skin should be taken seriously.

### *Dislocation*

Our dislocation rate is expected to be one in 500, about 0.2% for anterior hip replacements. Most of these will have a single dislocation. Others may go on to recurrent dislocations. Ways to dislocate your hip could be is with walking and turning abruptly away from the side of the hip replacement, or laying on you back with your legs crossed over and rolled outwards. Some patients dislocate their hip falling over – tripping over rugs, hoses, dogs, or doing forceful things in the garden.

**Currently, hip precautions are recommended - avoiding low seats, keep out of the bathtub for three months, avoid lurching down to the outer aspect of the leg. Avoiding dislocation is best - often an ambulance needs to be called to take you to hospital.**

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### *Leg length discrepancy*

The intention after hip replacement surgery is for the leg to match the other one, but stability of the hip joint is more important. If the leg length is right, but the hip keeps popping out requiring an ambulance trip to the hospital, little has been achieved! The leg may seem long for 6-12 weeks after the surgery because the muscles over the side of the hip (glutei) may be tight. As the muscles stretch, the leg returns to a more normal position. Leg length discrepancy more than 10mm is rare with current pre-operative templating techniques.

### *Death and severe complications*

Death is said to occur in 0.3% of patients within 90 days of the surgery. In those under 70 years, the rate is lower, vs over 80 years, perhaps 2.5%. Mainly heart attacks, strokes and blood clots are to blame. Informing us of your health problems, and your family health problems help us reduce this risk. Hip replacement is regarded as an effective improvement in patient's quality of life, but the various risks need care.

### *Bowel obstruction*

Narcotics such as morphine can slow the gut action. On occasions the gut gets worse, becomes distended and may require surgical treatment! This is usually a "pseudo-obstruction" and occurs in 0.5% of cases.

### *Loosening*

For a variety of reasons, the fixation between the hip replacement and the bone may fail. This loosening may cause pain and require re-operation. Infection is a cause of loosening, but other causes exist.

### *Stroke*

A stroke occurs in 0.2% of patients, causing possibly permanent weakness, and one in four die as a result. The blood thinners we use reduce the risk.

### *Wear & Osteolysis*

All hip replacements can wear out. The plastic component is most at risk, but should be able to be replaced fairly easily. This can

cause "osteolysis" which implies that bone (osteo...) develops holes (..lysis). This can cause a fracture or loosening around the hip replacement. It was a problem with early polyethylenes - but the modern highly crosslinked, and possibly the addition of anti-oxidants, have seen a substantial reduction in wear rate. Without much wear of the plastic component, osteolysis is uncommon.

### *Renal (kidney) failure*

Many patient's have kidney's not quite functioning normally. Being elderly on powerful anti-hypertensives, anti-inflammatory medications and being a bit dry might push you over the edge and dialysis required. If you've had dialysis previously – tell us. Otherwise the risk-benefit ratio means we use a reduced dose of anti-inflammatories but still use them.

### *Surgical team*

There might be 150 steps to getting an operation just right, some in, some out of the operating theatre. The surgeon is responsible for every step. Some steps are delegated to nurses, administrative staff and the orthopaedic fellow. The fellow is a fully trained orthopaedic surgeon in his own right, but chooses to work with your surgeon to learn and copy his technique. All critical steps are performed under direct supervision by the surgeon, or performed by the surgeon. Whilst possible to request your surgeon to do every intra-operative step, this might have a larger out of pocket expense. Your surgeon's reputation is based not only on his own skill, but that of the whole team.

### *Other*

It is not possible to provide a full list of complications. Extremely rare occurrences eventually happen to somebody. In short, having a hip replacement involves taking on an element of risk. Ask your surgeon to clarify any specific questions you may have.

17th September, 2021  
THR Anterior 13.8

## What is included in the cost of Joint Replacement?

Insurance generally pays for the “spare parts” and most of the hospital expense, but only covers a fraction of the doctors’ fees. This is because Medicare hasn't adjusted their schedule to match CPI since 1983, or at all since 2014, Medicare is now worth less than one third of the real value of 1983. So there will be out of pocket expenses for doctors.

Doctors involved in the operation are: the surgeon, anaesthetist, surgical assistant, and if any medical problems occur, or are anticipated, a physician. The surgical assistant is a skilled nurse, doctor, or surgeon or a combination of these working alongside your main surgeon. The surgical assistant's billing will occur through Ballarat OSM. Typically there will be an out of pocket expense which contributes to paying the salaries of our nurses and our fellow. If a physician is required, please discuss his fees with him. The anaesthetist will arrange his/her own financial consent. Typical out of pocket expense after Medicare & private health insurance rebates (estimates) are \$500 for hospital, \$400 for anaesthetist, and \$400 for surgical assistant.

Included in the **surgeon’s fee** is performing the surgery, follow-up in the hospital and consulting rooms for twelve months is usually bulk billed - ie no additional charge to you. The surgeon takes responsibility for the whole process, and to solve whatever problems occur. The surgeon takes personal responsibility for the post-operative pain control –including extensive local anaesthetic infiltration around the wounds. For patients off track, the surgeon intervenes, or supervises interventions. The surgeon takes personal responsibility for achieving a low infection rate. If an infection does occur, aggressive surgical and antibiotic treatment is required.

The AMA calculates annually the change in cost of medical practice, covering practice staff, insurance, rent etc, which roughly follows the CPI. Following the AMA fee suggestion, the surgeon’s fee for major joint replacements & the re-injection technique is **\$4387** (item number 49318 & 18222). Insurers are only required by law to pay \$344 towards the surgeon, Medicare pays \$1032, thus you're \$2667 out of pocket. Insurers require us to discount by 25-48% to allow "Gapcover" arrangements, even with moderate out of pocket expenses.

ESTIMATED COST	Insured patients	Medicare only	No Medicare
Surgeon	\$ 2,667	\$ 3,355	\$ 4,387
Total	\$ 4,440	\$ 18,700	\$ 21,000

Included in the package of estimated fees are:

- Hospital, surgeon, assistants, anaesthetist, prosthetic implants
- post operative ward rounds, usual blood tests and XRs
- followup phone call(s) after discharge, access to Ballarat OSM nurses for advice
- 2 & 6 week appointment at rooms, and any other visits to the consulting rooms required.
- 12 months followup appointment related to the hip
- Long term surveillance of joint replacement by XR & phone calls for younger patients

Excluded:

- Physician involvement
- Other orthopaedic or surgical problems

If you are experiencing personal financial hardship, please discuss this well prior to the surgery so an amicable arrangement can be made. Note that most our joint replacements patients are elderly and many have a part pension. The out of pocket expenses will be required to be paid two weeks prior to surgery to avoid cancellation.

