

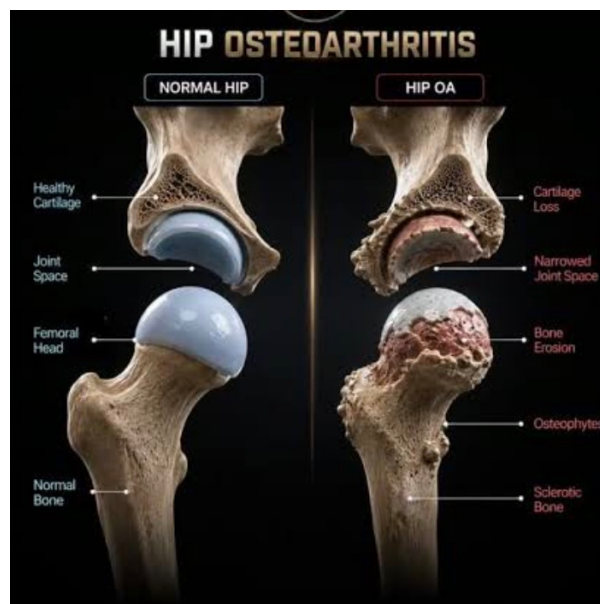
# Total Hip Replacement

## Patient Information Sheet

### What is Osteoarthritis?

Osteoarthritis is the most common form of arthritis. It occurs when the smooth cartilage that cushions the ball (femoral head) and socket (acetabulum) of the hip joint gradually wears down, so bone begins to rub on bone — leading to pain, stiffness and reduced movement.

- A slow, progressive ‘wear and tear’ condition
- Also commonly affects the knees and spine



*A normal hip joint compared with a hip affected by osteoarthritis, showing cartilage loss, narrowed joint space, bone erosion, osteophyte formation and sclerotic bone.*

### What Are the Causes?

Osteoarthritis of the hip usually develops from a combination of factors, including:

- Age — risk increases with age as cartilage naturally wears over time
- Genetics — a family history of osteoarthritis increases risk
- Hip dysplasia or childhood hip conditions — an abnormally shaped or shallow socket increases wear over time
- Previous hip injury or fracture — involving the joint surface
- Excess body weight — increases load through the hip joint
- Femoroacetabular impingement (FAI) — abnormal contact between the ball and socket that can accelerate cartilage wear
- Repetitive heavy loading — certain occupations or sports involving repeated heavy lifting or high-impact activity
- Inflammatory conditions — such as rheumatoid arthritis, which can accelerate joint damage

### Non-Operative Treatments

Surgery is usually considered only after non-surgical options have been tried. These include:

- Weight management — reducing load through the joint
- Activity modification — reducing high-impact or aggravating activities

- Physiotherapy — strengthening the muscles around the hip and improving flexibility
- Simple and anti-inflammatory pain relief — as advised by your doctor
- Walking aids — such as a stick, to offload the joint and improve stability
- Corticosteroid or other joint injections — may provide temporary symptom relief for some patients

These measures do not reverse osteoarthritis but can meaningfully improve pain and function, and may delay the need for surgery.

## Role of Physiotherapy in Preparation for Surgery

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‘Prehabilitation’ (physiotherapy before surgery) helps optimise your hip and general fitness ahead of a total hip replacement. Benefits include:

- Strengthening the gluteal, core and surrounding muscles, which supports a faster post-operative recovery
- Improving pre-operative flexibility and gait pattern
- Teaching exercises, hip precautions and movement patterns you will use immediately after surgery, so rehabilitation feels familiar
- Practising the use of walking aids (frame, crutches) before you need them
- Addressing general fitness, balance and any other lower-limb issues that could affect recovery

Patients who are stronger and fitter before surgery generally recover more quickly and with fewer complications afterwards.

## Indications for Surgery

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Total hip replacement is generally considered when:

- There is significant, ongoing hip or groin pain that limits daily activities, walking, sleep or quality of life
- Imaging (X-ray or MRI) confirms significant cartilage loss / advanced osteoarthritis
- Non-operative treatments (weight loss, physiotherapy, medication, injections) have failed to provide adequate relief
- There is significant stiffness, deformity or shortening related to the hip
- The patient is medically fit for surgery and anaesthesia, and understands the expected recovery process

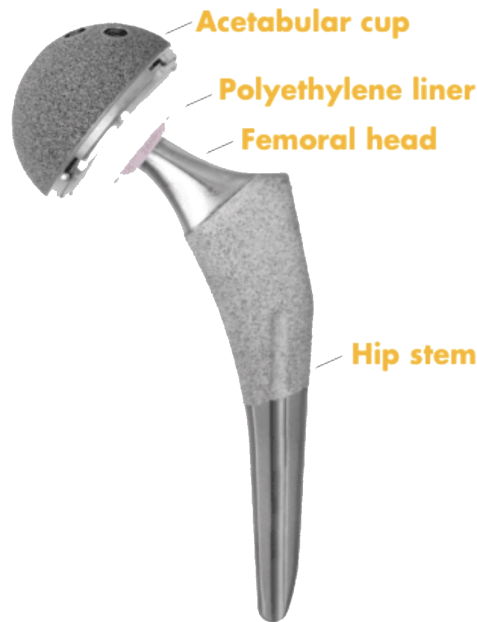
The decision to proceed with surgery is individual and is made jointly between you and your surgeon, weighing the severity of your symptoms against the risks of the operation.

## What is a Total Hip Replacement?

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A total hip replacement (THR), also called total hip arthroplasty, is an operation to resurface a hip joint damaged by arthritis. The worn femoral head (ball) is removed and replaced with a metal or ceramic ball on a stem fixed into the femur, and the worn socket (acetabulum) is resurfaced and fitted with a metal cup, usually lined with a high-grade plastic (polyethylene), ceramic or metal liner — together recreating a smooth, pain-free ball-and-socket joint.

The hip can be accessed through several different surgical approaches (most commonly posterior, antero-lateral or direct anterior).



*The main components of a total hip replacement: the acetabular cup and polyethylene liner (socket side), and the femoral head and hip stem (ball side).*

### Dr Calligeros' Surgical Approach: Why Posterior?

Dr Calligeros performs total hip replacement using the posterior approach — a well-established, extensively studied technique used for the majority of hip replacements in Australia. The choice of posterior over direct anterior or antero-lateral is based on the current evidence:

- No difference in long-term outcomes: multiple meta-analyses of RCTs found no significant difference in hip function, revision rates or satisfaction from around 3 months onward — any early functional advantage of the anterior approach does not persist.
- Comparable dislocation risk: with modern posterior soft-tissue (capsule and short external rotator) repair techniques, dislocation rates are now equivalent to the direct anterior approach — the higher historical rates reflect older surgical techniques, not the approach itself.
- No increased risk of infection: large comparative studies and meta-analyses show equivalent infection rates between the two approaches.
- Lower risk of nerve injury: the direct anterior approach carries a significantly higher risk of injury to the lateral femoral cutaneous nerve (numbness/altered sensation on the outer thigh), substantially lower with the posterior approach.
- Lower risk of early femoral loosening, fracture and early revision: a multicentre study of 478 early revision hip replacements found the direct anterior approach was disproportionately associated with early femoral failure — predominantly aseptic loosening related to the technical difficulty of femoral exposure through this approach (Meneghini RM, Elston AS, Chen AF, Kheir MM, Fehring TK, Springer BD. 'Direct Anterior Approach: Risk Factor for Early Femoral Failure of Cementless Total Hip Arthroplasty: A Multicenter Study.' J Bone Joint Surg Am. 2017;99(2):99–105). A separate series similarly found direct anterior hips referred for revision had failed significantly earlier than non-anterior hips, with early periprosthetic fracture and femoral loosening as the leading causes (Eto S, Hwang K, Huddleston JI, Amanatullah DF, Maloney WJ, Goodman SB. 'The Direct Anterior Approach is Associated With Early Revision Total Hip Arthroplasty.' J Arthroplasty. 2017;32(3):1001–1005).
- Better exposure and versatility: excellent visualisation across a wide range of anatomy and body types, more easily extended if needed, and the standard approach for most revision hip surgery.
- No wound-healing disadvantage related to body habitus: the anterior incision sits close to the groin skin crease, increasing wound complication risk in higher-BMI patients — the posterior incision avoids this.

The direct anterior approach does offer a modest reduction in pain and faster early functional recovery in the first few weeks in some studies, but this early difference has not been shown to persist, and some evidence points to a

higher risk of early fracture and early revision with the anterior approach. Dr Calligeros' view, supported by this evidence, is that the posterior approach offers the most reliable and versatile option for an excellent long-term outcome, while minimising nerve injury, early fracture and wound-related risk.

## What is the Recovery?

Recovery is a gradual process and varies between individuals. The following is a general guide:

| Timeframe   | What to expect                                                                                                                                                                                                                                                          |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1–2 weeks   | Hospital stay (typically 1–3 nights) or early days at home. Walking with a frame or crutches under physiotherapy guidance, wound care, swelling and pain control, and following your hip precautions (movements to avoid, specific to your surgical approach).          |
| 2–4 weeks   | Progressing from a frame towards a stick/cane. Wound review and suture/staple check. Increasing walking distance and improving gait pattern. Hip precautions generally continue during this period.                                                                     |
| 4–6 weeks   | Many patients are walking independently without a stick around this time. Return to light daily activities and, for many, driving once reaction time and hip control are adequate (surgeon clearance required).                                                         |
| 6–12 weeks  | Hip precautions are usually relaxed around this time (as advised by your surgeon). Continued strengthening and gait normalisation. Many patients return to light or sedentary work.                                                                                     |
| 3–12 months | Ongoing improvement in strength, endurance and confidence. Most of the final recovery in muscle strength and stamina occurs over this period — it can take up to 12 months to feel the full benefit of surgery, including return to sport or more demanding activities. |

## Inpatient vs Outpatient Rehabilitation

After the initial hospital stay, ongoing rehabilitation can take place either as an inpatient (in a rehabilitation hospital/ward) or as an outpatient (attending physiotherapy sessions while living at home). The right pathway depends on your individual circumstances:

- **Outpatient rehabilitation:** suitable for most patients, particularly those with good home support, reasonable mobility before surgery, and no significant other medical issues. Patients return home a few days after surgery and attend physiotherapy sessions (in clinic or via home visits) to progress strength and mobility.
- **Inpatient rehabilitation:** may be recommended for patients who live alone with limited support, have significant comorbidities, had a more complex procedure, or are not yet safe to mobilise independently at home. This involves a short stay (typically 1–2 weeks, occasionally longer) in a dedicated rehabilitation facility with daily supervised therapy.

Outcomes at 12 months are generally comparable between the two pathways for most patients; the choice is primarily about safety and support during the early recovery period, and will be discussed with you before surgery.

## Risks of Surgery

As with any major surgery, total hip replacement carries risks. Your surgeon will discuss these with you in detail, and they include (but are not limited to):

- Infection (superficial or deep)
- Blood clots (deep vein thrombosis or pulmonary embolism)
- Dislocation of the hip, particularly in the early recovery period

- Ongoing pain of uncertain cause
- Nerve or blood vessel injury (including sciatic or femoral nerve irritation)
- Implant loosening, wear or instability over time
- Leg length difference
- Fracture around the implant, during or after surgery
- Risks of anaesthesia, and medical complications such as cardiac or respiratory events
- The possible need for further (revision) surgery

### Expected Outcomes

Total hip replacement is one of the most consistently successful operations in modern surgery. Published evidence indicates satisfaction after hip replacement is generally higher than after knee replacement — long-term dissatisfaction around 4–7% vs roughly 8–10% for knee replacement. Still, it is important to have realistic expectations:

| Proportion | Outcome           | What this means                                                                        |
|------------|-------------------|----------------------------------------------------------------------------------------|
| ~90–93%    | Excellent outcome | Substantial pain relief, restored function, and high satisfaction with the new hip     |
| ~5–7%      | Moderate outcome  | Meaningful improvement but with some residual stiffness, ache or functional limitation |
| ~2–3%      | Poor outcome      | Feel little better — or occasionally worse — than before surgery                       |

**A note on the ‘poor outcome’ group:** within this small group of patients, some have ongoing pain or stiffness with no identifiable surgical cause — the implant is well-positioned, well-fixed and shows no sign of infection or mechanical problem on assessment. Unexplained pain of this kind is less common after hip replacement than after knee replacement, but when no clear cause can be found, there is usually no further surgical procedure that reliably fixes the problem: without an identifiable, treatable cause, surgery is unlikely to succeed and further intervention may carry more risk than benefit. Management in this situation focuses on pain and function optimisation (physiotherapy, pain management input) rather than repeat surgery.

### Longevity of Hip Replacements — Australian Joint Registry Data

The Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR) collects data on almost all joint replacements performed in Australia, and is one of the largest and most detailed registries in the world. It provides the most reliable long-term data available on how long hip replacements last.

| Measure                                  | Registry data                                                                                                                                                                                     |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Average age at primary hip replacement   | Around 68 years, though surgery is performed across a wide age range depending on symptoms and joint damage                                                                                       |
| 10-year risk of needing revision surgery | Approximately 3–5 in every 100 patients (around 95–97% of hip replacements are still functioning well at 10 years)                                                                                |
| 15-year risk of needing revision surgery | Approximately 6–8 in every 100 patients                                                                                                                                                           |
| Main reasons for revision                | Dislocation/instability, infection, loosening of the implant, and fracture around the implant                                                                                                     |
| Effect of age                            | Younger patients (especially under 55–60) have a higher lifetime chance of eventually needing a revision, mainly because the implant is subjected to more years of use and higher activity levels |

In practical terms, the great majority of hip replacements are still functioning well 10–15 years after surgery. Revision, when required, is most commonly related to dislocation/instability, infection or loosening rather than simple 'wearing out' of the implant. Younger, more active patients place more cumulative load on the implant over their lifetime and therefore have a somewhat higher chance of eventually needing revision surgery than older patients.

*Figures above are approximate, rounded values based on published AOANJRR data and may vary slightly between annual reports; your surgeon can discuss the most current figures relevant to your specific implant and circumstances.*