

# JOINT replacement



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## Joint replacement surgery – the broad picture

Joint replacement operations are among the most common and effective health care measures for people with arthritis.

In the year ending June 2002, 26,689 hip replacements and 26,089 knee replacements were performed in Australia. Joint replacements were once only offered to older people with end-stage arthritis of the hip or knee. Now they are increasingly performed on younger people if there is a need. The procedure is also available for shoulders, elbows, wrists, fingers, ankles, toes, and intervertebral discs.

Joint replacement operations differ according to the joint affected, the reason for the replacement, the kind of artificial joint used and many other factors. Nevertheless the principles of preparation and recovery from joint replacement operations are similar in many ways. More time spent in pre-operative preparation, both physically and mentally, has been shown to improve satisfaction with the final result.

This brochure is designed for people who are considering or have already decided to have joint replacement surgery. Since every person and every operation is unique, it will not answer all your questions and it is not a substitute for expert medical advice. However, it will help give you a better idea of what to expect and it might help you to come up with questions to ask your health practitioners as you weigh up whether joint replacement surgery might be a good option for you.

# The basics of healthy joints

Joints are where bones fit together and move against each other.

Where the ends touch and rub, bones are covered with cartilage. This is normally smooth and moist to reduce friction. Cartilage is tough enough to resist wear, but is also spongy to absorb pressure and cushion the bones. Bones and cartilage are living tissue, constantly being reformed to make up for normal wear and tear. A normal joint also contains a small amount of viscous natural fluid (synovial fluid), similar to egg white. This is a biological lubricant that further reduces friction.

Figures 1 and 2 show the main bony structures of the normal hip and knee joints, which are the joints most often replaced. Muscles, tendons and ligaments keep the joints stable and in correct alignment, as well as allowing us to move our limbs and trunk, but only the bony skeleton is clearly visible on X-rays.

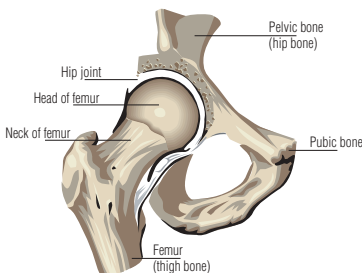


Figure 1. Cut away view of the hip joint

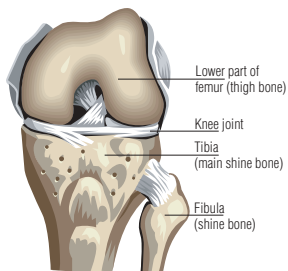


Figure 2. The Knee Joint



## Diseases of joints that may lead to joint replacement

Although various kinds of joint disease can lead to joint replacement surgery (box 1), most of these operations are done to relieve the effects of osteoarthritis.

Osteoarthritis is characterised by destruction of cartilage, leading to rough and uneven joint surfaces. This causes the joint to become painful, stiff and swollen, and limits its range of movement. The arthritic joint may click as it moves, it may lock or it may become unsteady. As all people with chronic arthritis know, not only are these symptoms unpleasant in themselves, they can also seriously impair the ability to undertake ordinary activities necessary for day-to-day living.

### 1. Conditions for which joint replacement may be a treatment option

#### Arthritis due to:

- Age-related wear and tear, known as osteoarthritis.
- Chronic inflammation, usually as a result of rheumatoid arthritis.
- Trauma or injury.
- Birth defects and growth disorders.
- Obesity and inactivity.

#### Conditions not necessarily involving arthritis, such as:

- Certain fractures that don't knit or heal properly – the most common is a fracture at the top end or 'neck' of the thigh bone (femur) near the hip.
- Interruption to the blood supply of a bone, leading to the death of bone tissue in the joint – called avascular necrosis.
- Severe infections of joints.
- Cancer in or near a joint.

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All the conditions shown in box 1, if severe enough to warrant joint replacement, are associated with characteristic changes on X-rays or other kinds of scans. Ask your doctor to show you these and explain them.



Typical knee prosthesis (left) and X-ray appearance following a total knee replacement (right).

## The jargon of joint replacement

Joint replacement surgery in which both parts of the joint are replaced is called a total arthroplasty.

When a doctor or other health professional uses expressions such as 'total hip' or 'total knee', they mean a joint replacement operation in which the complete hip or knee joint is replaced. An operation in which only one part of the joint is



replaced is called a hemi-arthroplasty. An artificial joint is called a prosthesis. There are many different kinds of prosthesis, but they are all made of non-living material such as metal, plastic or ceramic. Although artificial joints are tough and durable, they are not capable of remodelling or self-healing with wear, as living joints are. Research is very active in this area, and attempts are underway to find ways of replacing worn or damaged parts of joints with living tissue.



Typical hip prosthesis (left) and X-ray appearance following a total hip replacement (right).

### **Are other operations available for bad joints?**

Operations other than joint replacement are sometimes more appropriate, and your surgeon will tell you if any of these are suitable for you.

Sometimes these are undertaken through a tiny incision, using a thin, telescope-like instrument called an arthroscope. The procedure is referred to as arthroscopy. It is primarily a diagnostic procedure of limited therapeutic value, but allows access to the joint for debridement or synovectomy. Debridement is an operation in which loose bone, cartilage or other matter of the joint is cleaned out. Synovectomy is the removal of the lining of the joint when it is very inflamed, but this is usually only carried out in the knee, elbow or hands. In an osteotomy, bones near the joint are cut and repositioned to correct a deformity. Occasionally, the end of a bone that forms one side of a joint is removed without replacement. Arthrodesis is an operation in which a joint is fused to make it solid and immovable, but this is usually not as desirable as joint replacement, which allows restoration of movement after the operation.

### **Why have a joint replaced?**

The aim of having a joint replaced is usually to relieve severe pain and restricted movement, especially when other non-surgical treatments no longer bring sufficient relief.



In most cases the operation will reduce pain, improve mobility, make day-to-day activities easier and improve your quality of life. As with all other treatments, joint replacement is not a miracle cure. The artificial joint will not restore things to the way they were when the joint was completely normal and healthy, or when your body was at its physical peak. To achieve maximum flexibility of the new joint(s), particularly in hip and knee replacement, you will need to follow an intensive program of physiotherapy in the weeks following the operation and, in most cases, especially if joints other than the one being replaced are affected, you will need to continue with other kinds of treatment such as exercise programs and medicines for arthritis. Every treatment has risks and benefits, including joint replacement. Some of these are summarised here, but you should discuss this issue carefully with your surgeon. It is also helpful to discuss the benefits and risks with any other health professionals involved in your care, such as your general practitioner (GP), physiotherapist or a nurse, as well as family and friends, before making the decision to have a joint replaced.

## **Who to see and what to find out**

If you think that joint replacement might be appropriate for you talk to your GP, who is able to recommend an orthopaedic surgeon skilled in joint replacement surgery.

An orthopaedic surgeon will first assess whether joint replacement is appropriate for you. The surgeon will

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ask detailed questions about the joint causing trouble, your other joints, and your health in general. You need to tell the surgeon everything about your health, even if you don't think it is important. The surgeon will also conduct a physical examination. X-rays, blood tests and other examinations may be arranged, if they haven't already been done. When the assessment is completed, the surgeon will tell you whether or not you are likely to benefit from joint replacement surgery. In some cases the surgeon may recommend that you don't proceed. There are several conditions, including smoking, that might make the operation too dangerous or prone to failure.

If the surgeon says you are likely to benefit from joint replacement surgery, the decision is yours as to whether to proceed. Be sure to ask your surgeon exactly what kind of operation is recommended, what it will involve and what the result is likely to be. Tell the surgeon what kind of result you expect. Surgeons are happy to discuss your concerns. Ask at least these four questions:

- What are the possible benefits from a joint replacement in my case?
- What are the general risks of surgery, and the specific risks related to the kind of joint replacement I would have?
- Are there any other options?
- Is there a waiting list and, if so, how long is the wait likely to be?

Once all your questions are addressed, consider the information you receive carefully before



coming to a decision. Surgeons are happy to arrange a second opinion if you want one. Not having surgery is always one of your options. However, if you decide to go ahead with the operation, don't put it off. Unnecessary delays can affect the final result. Also, there may be a waiting period before the surgery can be undertaken.

## **What is the long-term outcome?**

**In making the decision to have joint replacement surgery, one of the most important issues to consider is how long the new joint will last. It is not possible to predict the exact outcome for any one person.**

Most joint replacements have a very good outcome, but an artificial joint does not necessarily last for the rest of your life, although in some cases it might. More than 90 per cent of hip and/or knee replacements survive for 10 to 15 years. Some have lasted for up to 25 years. Results with other kinds of joint replacement have been less satisfactory than this.

Among the complications of joint replacement surgery is the possibility that the prosthesis either wears or becomes loose. In that event, another operation will be necessary to replace all or part of the prosthesis.

Ask your surgeon to give you the details of your prosthesis and keep this information in a safe place just in case you need to seek medical attention relating to the replacement in the future.

### Financial planning

Ask your surgeon for an estimate of the cost, which will include the costs of the operation, the prosthesis, hospital and anaesthetic fees, and about the likely rebate from Medicare or private health cover, if this applies.

The surgeon can only give an estimate, as the final treatment may differ from the planned treatment.

You can choose to have joint replacement surgery as a public patient, in which case you are treated by a doctor appointed by the hospital at no charge under Medicare. Alternatively, you can elect to be treated as a private patient, either in the public system or in a private hospital. As a private patient, part or all of the fee may be covered by Medicare, plus your private health fund. Any part not covered by these is called the 'gap'. Check with your health fund.

### You have decided to go ahead with the operation. What next?

#### Planning for recovery

If you decide to have the operation, you will need to plan ahead for the recovery period after discharge from hospital. It may take several months before the full benefits of the operation are felt. During this time you may need help with day-to-day chores such as cooking, cleaning, laundry and shopping. It might be necessary to consider a short



stay at a rehabilitation unit after leaving hospital. If you live alone, consider organising for someone you trust to either move in or visit daily to help with daily-living activities. Well before the operation, think about ways to better organise your home for the recovery phase, such as:

- Putting things you use often within easy reach.
- Re-arranging things to avoid bending down or reaching up.
- Removing any loose rugs or carpets.
- Covering cords or cables that can't be removed.

## **Other things you can do beforehand for a better result**

**Your chances of a better outcome will be improved if you can do the following:**

- Lose weight if you are overweight (but don't go on a crash diet immediately before an operation).
- Start an exercise or hydrotherapy program (this helps recovery whether or not you are overweight).
- Stop smoking if you are a smoker.
- Attend to any health problems that might increase the risk of infection including dental problems and skin ulcers especially on the legs.
- Tell your doctor about any other illness and all medications you are taking, or have taken recently, including medicines available over the counter. Medicines for joint pain and inflammation, in particular, can cause prolonged bleeding during and after surgery. These include medicines such as aspirin, Nurofen, Voltaren, or

any others belonging to the group called the non-steroidal anti-inflammatory drugs (NSAIDs). Sometimes your surgeon may suggest other medications should be stopped before your operation. If in doubt check with your rheumatologist. Even some natural remedies, such as garlic, ginger and ginseng, can interfere with blood clotting. These medicines may need to be stopped one to two weeks before surgery. Your surgeon may also recommend that you 'donate' some of your own blood several weeks before the operation, to be given back to you if you need a transfusion at the time of surgery.

### **Before admission to hospital**

**Orthopaedic Pre-Admission Clinics operate at most hospitals. Attending the clinic usually occurs a week to 10 days before the operation.**

This service is designed to ensure a relaxed, informed admission process, and includes:

- Assisting you and your family with admission paperwork.
- Discussing your estimated length of stay in hospital.
- Assessing your discharge needs and assisting you to plan for your management at home, including referral to the appropriate community support agencies, if required.
- Discussing with a hospital physiotherapist the exercises you will need to do before and after the operation, and walking aids and other equipment you may need, such as handrails and elevated toilet seats.



## At hospital, before the operation

You may be required to fast (usually for a minimum of six hours) before your operation.

On admission to hospital more tests may be needed to assess your general health, such as a chest X-ray and an electrocardiogram (ECG).

You will be seen by an anaesthetist. General anaesthesia, which involves putting the patient to sleep during the procedure, is not always necessary or appropriate for every type of joint replacement operation. Spinal anaesthesia, a process in which the anaesthetic is delivered by needle into the spine, rather than the bloodstream is sometimes used. All kinds of anaesthesia carry some risk of side effects. Ask your anaesthetist about these.

You also will be seen by the hospital physiotherapist, who will devise and explain a physio program that best suits your needs.

There may be more changes to your medicines – new medicines may be started to help prevent clots or infections in the recovery period. Painkillers you have bought over the counter may be replaced by prescription painkillers that do not cause prolonged bleeding.

It is not always possible to see your surgeon in the 24 hours before the operation, so be sure to discuss all your concerns in the last visit before hospital admission.

You will need to sign a consent form giving your permission for the operation to go ahead. Read this carefully before you sign it. Some hospitals also may

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ask for permission to include information about your operation on the National Joint Replacement Registry. This program is designed to improve our understanding about which procedures are best long-term. More information about joint replacement and the National Joint Replacement Registry can be found on the Australian Orthopaedic Association's website, [www.aoa.org.au](http://www.aoa.org.au)

### The operation

Generally, joint replacement operations take about one to three hours.

Before being returned to the ward you will be closely monitored in a recovery room.

### What to expect after the operation

Depending on the operation, you may find an intravenous tube leading to a vein in your arm, a drainage tube from the site of the operation and a urinary catheter, which empties urine directly from the bladder, to make sure your kidneys are functioning well.

There is always some pain and discomfort after any operation. You will be given medicines to reduce this to a minimum. Activity is encouraged early after most joint replacement operations to prevent stiffness, muscle wasting and blood clots. If you are having a hip or knee joint replaced, you will need some form of assistance with walking in



the early phase of recovery. A walking frame, crutches or a cane will be necessary for at least the first six weeks. Recovery is gradual and full recovery takes months. The recovery time will vary from person to person, and the full benefits of the new joint may not be felt for six to 12 months. Eventually you should be able to undertake activities such as walking, swimming and gardening, but high-impact activities and sports that involve running, jumping and twisting should be avoided. Your surgeon, together with the allied health team, will describe in detail what you should be able to do, and what you should avoid, according to the specific type of joint replacement you undergo.

## Complications of joint replacement surgery

**All surgery carries some risk, but serious complications occur only in about one in every 100 people undergoing joint replacement surgery.**

It is very important to know about possible complications before surgery, but it is equally important not to assume that you will get any of these. Complications arise in a minority of patients, and most are treatable. The list in box 2 does not cover all possible complications of joint replacement surgery, but it does give you a starting point for discussing this important issue with your surgeon. The best time to discuss these and other concerns is before the operation. Surgeons expect to discuss them with you.

### 2. Some complications of joint replacement surgery are:

- Pain, bleeding or heavy scarring at the site of surgery.
- Failure of the edges of the wound to knit.
- Allergies to medicines used at the time of surgery, dressings or stitches.
- Injury to nerves and blood vessels.
- Infection at the site of the operation, or spreading to other parts of the body.
- Blood clots in the deep veins of the legs, which can travel to the lungs.
- The prosthesis may become loose, break or undergo wear.
- Persistent pain or stiffness in the joint after the operation.
- A build up of fluid in the joint.
- Chest infection.
- General anaesthesia is never without risk.

After discharge, contact either your GP or your surgeon in the event of any of the following:

- Fever higher than 38.5° C or chills.
- Persistent pain or swelling in the operated joint.
- Bleeding from the wound.
- The wound becomes red or hot.
- Nausea or vomiting.
- Chest pain or trouble breathing.
- Pain swelling or redness in the calves.



- Decreasing rather than increasing range of movement.
- Trauma to the site of the operation.
- The operation wound opens.
- Any concerns about your operation.

## Sources of information

**Arthritis Australia produces a range of brochures and provides support services for people with arthritis.**

Contact your nearest State or Territory Arthritis Office or visit Arthritis Australia at [www.arthritisaustralia.com.au](http://www.arthritisaustralia.com.au)

The Australian Orthopaedic Association also produces detailed information leaflets about specific kinds of joint replacement operations and other surgical procedures on joints. Ask your orthopaedic surgeon about these.



## Arthritis Australia

1st Floor  
52 Parramatta Road  
Forest Lodge NSW 2037

**Mail:** GPO Box 121  
Sydney NSW 2001

**Phone:** (02) 9552 6085

**Fax:** (02) 9552 6078

For all arthritis information:

**Freecall:** 1800 011 041

**Website:** [www.arthritisaustralia.com.au](http://www.arthritisaustralia.com.au)

**Email:** [info@arthritisaustralia.com.au](mailto:info@arthritisaustralia.com.au)

## State & Territory Offices

### Arthritis ACT

Level 2B Grant Cameron Community Centre  
27 Mulley Street  
Holder ACT 2611

### Arthritis New South Wales

13 Harold Street  
North Parramatta NSW 2151

### Arthritis NT

6 Caryota Court  
Coconut Grove NT 0810

### Arthritis Queensland

1 Cartwright Street  
Windsor QLD 4030

### Arthritis South Australia

Unit 1 202-208 Glen Osmond Road  
Fullarton SA 5063

### Arthritis Tasmania

McDougall Building 30/9 Ellerslie Road  
Battery Point TAS 7004

### Arthritis Victoria

263-265 Kooyong Road  
Elsternwick VIC 3185

### Arthritis WA

17 Lemnos Street  
Shenton Park WA 6008