

# Reverse Shoulder Arthroplasty

A reverse shoulder replacement puts the ball on the shoulder blade and the cup on the arm bone, the opposite of normal anatomy, which lets the deltoid muscle lift the arm when the rotator cuff is torn.

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At-a-glance recovery. Pooled from 80 published studies — your own pace will vary.

| LIGHT DUTIES                                                            | MOST EVERYDAY ACTIVITIES                                                        | FINAL OUTCOME PLATEAU                                                                                                |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| desk work, driving, daily tasks                                         | manual work, sport, gym                                                         | pain and strength                                                                                                    |
| <b>6-12 weeks</b>                                                       | <b>12 months</b>                                                                | <b>12 months</b>                                                                                                     |
| Return to driving is recommended between 6 to 12 weeks postoperatively. | Patients typically achieve maximum medical improvement at 1 postoperative year. | Chronic recovery is assessed via time spent above 90 degrees of elevation, with maximum improvement noted at 1 year. |

## Why this operation has been suggested

Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, starts with the least invasive options that suit your condition. Patients are generally referred to our clinic by their GP; if a physiotherapist has suggested you see us, you will still need a referral from your GP in order to be eligible for the Medicare rebate. We assess you by talking through your history, examining your shoulder, and arranging imaging where it is needed.

A reverse shoulder replacement is a joint replacement that swaps the usual ball-and-socket arrangement of the shoulder around, so the ball sits where the socket was and the socket sits where the ball was. We usually suggest it when the rotator cuff, the group of tendons that steadies the shoulder, is badly worn or torn, or when other shoulder problems have not settled with non-operative care such as activity change, physiotherapy, splinting or injections. For some injuries, surgery may be recommended straight away. The operation aims to relieve pain and improve how your shoulder moves and works. Clinical benefits are maintained out to 10 years. We will talk through the benefits and risks with you, and the decision is one you make together with us.

## Before the operation

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Once you and your surgeon have agreed on a reverse shoulder replacement, we will arrange the tests needed to plan your operation. This usually means X-rays of your shoulder, and sometimes a CT scan, which is a detailed scan that builds a three-dimensional picture of the bone. These images help us plan the position of the new joint parts and measure your shoulder carefully before the day of surgery. You will also be asked about your general health, including any past operations on your shoulder, medicines such as steroids, and conditions like osteoporosis, which is thinning of the bones. Please bring a list of your current medications to your appointment. If you take certain medicines, your surgeon may ask you to stop them briefly before surgery. You will need to fast for seven hours beforehand; we ask for a little longer than usual so you can be brought forward if the theatre list runs early. Arrange for someone to drive you home afterwards, and wear loose, comfortable clothing. If you have other medical conditions, you may need blood tests or a review with the anaesthetist, the doctor who gives the anaesthetic.

## On the day

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On the day of surgery you come to the hospital's surgical admissions unit. You are checked in there and prepared for theatre. You do not go to a ward first.

This operation is done under general anaesthetic combined with a regional nerve block. The anaesthetist will meet you before the operation and talk you through both parts.

You are then taken into the operating theatre, where the operation is performed. When it is finished, you wake up in the recovery area. Nurses watch you there while the anaesthetic wears off. Once you are stable, you move to a ward.

## What the operation involves

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Your surgeon makes a single cut over the area being operated on to reach the shoulder joint. The worn-out joint surfaces are removed and replaced with new metal and plastic parts. The usual ball-and-socket arrangement is swapped around, so the ball sits where the socket was and the socket sits where the ball was. This is what makes it a "reverse" replacement. The new parts are designed so the strong muscle that caps your shoulder, the deltoid, can lift the arm instead of the worn or torn rotator cuff tendons.

During the operation, your surgeon works carefully around the tendons and other soft tissues of the shoulder. If some of these tissues are in good condition, they are stitched back onto the new implant once it is in place. The new parts are positioned and sized using the plan made from your X-rays and scans before the day of surgery.

When the new joint is in place, the wound is closed. A fine self-adhesive mesh is laid over the closed wound first, holding the skin edges together. A liquid skin adhesive is then painted over the mesh, where it sets to seal the whole thing. This stays on for roughly one to two weeks and then lifts and peels away by itself, so there is nothing to be taken out.

## After the operation

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You will wake up in the recovery area, and once you are stable you move to a ward. Nurses check on you there and give you medicine to keep you comfortable. Your arm rests in a simple sling for support; it comes off for exercises and washing. Most patients stay one or two nights in hospital after this operation. We leave the dressing on for about 10 days; please do not take it off before then unless we tell you to. We change or remove it when we see you. A physiotherapist will usually see you before you go home to start gentle movements. Please arrange for someone to stay with you for the first 24 hours after you get home.

## Recovery

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The first days at home are about rest and comfort. Your shoulder will be sore and swollen, and the sling is there to support the arm between exercise times. Simple pain medicine, taken as directed, usually keeps this manageable. The discomfort tends to ease steadily as the weeks pass, and most people find the swelling settles before the stiffness does.

Your physiotherapist will guide your exercises, starting with gentle movements and building up as your shoulder allows. The sling comes off for these sessions and for washing. You will be able to do light tasks around the house with your other hand while the operated arm recovers. Sleep can be awkward at first; many people find it easier resting propped up in a chair or with pillows until lying down feels comfortable again.

Milestones come as events rather than dates. Once your surgeon clears you to drive, typically at the six-week review, you can get back on the road; our separate guide covers [driving after upper-limb surgery](#). As movement returns, everyday tasks like dressing and reaching become easier. When your physiotherapist is happy with your strength, you can return to the activities you enjoyed before, and most people who were active before this operation get back to those activities afterwards.

Recovery varies from person to person. Your timeline may differ, and your surgeon and physiotherapist will guide you along the way.

## What can go wrong

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Most patients do well, but problems can occasionally happen. Your surgeon and the team monitor you closely to spot any issue early.

Sometimes the new joint can slip out of place. You might feel a sudden clunk, followed by pain and a shoulder that will not move normally. If this happens, contact the clinic straight away or go to the emergency department.

Infection can develop around the new joint. Watch for a deep, throbbing pain that does not ease with simple painkillers, redness spreading out from the wound, or fevers. Tell the clinic promptly if you notice any of these signs. Infection is treated in stages, and most infections around a shoulder replacement can be cleared with this approach.

The new parts can work loose over time. This usually shows up as pain that returns or worsens, sometimes with a clicking or grinding feeling. Bring this up at your next review so it can be checked with X-rays.

Nerves run close to the shoulder, and they can be bruised or irritated during surgery. You might notice numbness, tingling or weakness in the arm. Often this settles on its own, but mention it at your review so it can be tracked.

Small breaks in the bone around the new joint, or in the bony point at the top of the shoulder, can happen. You would feel a sharp pain, often after a fall or a heavy push. Contact the clinic if this occurs.

A blood clot can occasionally form after shoulder surgery, typically causing sudden swelling and tenderness in the calf. If you notice this, seek medical attention promptly.

Some things raise the chance of problems. Men have a higher chance of complications after this operation for a broken upper arm. Having had a previous rotator cuff repair also raises the chance of infection around the new joint. A steroid injection into the shoulder means waiting at least 4 weeks before surgery, and we will plan around that.

The complications table on this page lists typical rates if you want the specifics.

## When to call us

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Most problems after this operation show up with warning signs you can spot at home. Call us if you notice fever, increasing redness or discharge around the wound, or pain that keeps getting worse instead of easing. Go to emergency if you have sudden severe pain, your shoulder looks out of shape, or you cannot move the arm. Calf swelling with tenderness, or shortness of breath, needs emergency care straight away. Call us too if you lose feeling in the arm or hand, or notice new numbness and tingling that does not settle.

## In more depth

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This section goes further than you need for your own treatment decisions. Reverse shoulder replacement is worth the extra reading because it is the operation that solved a problem previously thought unsolvable, a shoulder with no working rotator cuff, and because its characteristic complication is one most patients have never heard of.

### WHY REVERSING THE JOINT WORKS

A normal shoulder is a ball on the arm and a socket on the shoulder blade, and it depends on the rotator cuff to hold the ball centred while the deltoid lifts. Where the cuff is gone, a conventional replacement has nothing to stabilise it and the ball simply rides upwards.

The reverse design swaps them: the ball is fixed to the shoulder blade and the socket to the arm. That moves the centre of rotation inwards and downwards, which lengthens the deltoid's lever arm and lets it lift the arm on its own. It is a mechanical solution rather than a biological one: it does not repair anything, but makes the remaining muscle sufficient.

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### CQ HAND + UPPER LIMB

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That also explains the pattern of what it restores. Overhead elevation usually returns well. Rotation depends on muscles the operation does not replace, so reaching behind the back often remains limited, and that should be part of the expectation set before surgery rather than a disappointment after it.

### WHERE IT HAS DISPLACED OLDER OPERATIONS

For fractures, the shift has been decisive. Pooling **228,523** patients, reverse total shoulder arthroplasty gave better functional outcomes and complication rates than hemiarthroplasty, and a more favourable revision profile than plate fixation, in elderly patients with proximal humerus fractures [1].

An implant detail worth knowing, because it is often raised: comparing standard components with fracture-specific components in reverse replacement for these fractures across **436** patients found **no significant differences** in clinical outcomes or complication rates [2].

### THE COMPLICATION TO KNOW ABOUT

The one that matters here is the **acromial or scapular stress fracture**, the bone above the joint cracking under the increased deltoid tension the design deliberately creates. It is the direct consequence of the mechanism that makes the operation work.

A meta-analysis identified the risk factors: patients who sustained these fractures were **older with lower BMI**, and other risks included **osteoporosis, inflammatory arthritis, female sex and previous rotator cuff repair** [3]. A separate review found the literature reports these fractures inconsistently, significant discrepancies in how they are defined, diagnosed and counted [4], so quoted rates should be read with caution.

Set against that, the short-term picture is reassuring: overall rates of mortality and medical and surgical complications are low in the first 90 days, with only **6%** of patients requiring readmission [5].

### TWO THINGS THE EVIDENCE DOES NOT SUPPORT

**That the subscapularis must be repaired.** Across **267** patients, there were **no differences** in abduction, internal rotation or external rotation strength after reverse replacement with or without subscapularis repair, though the authors note the literature on strength outcomes is limited [6].

**That the indication does not affect the result.** It does. At two or more years, Constant scores were significantly higher in patients having reverse replacement for primary osteoarthritis with an **intact** cuff than for primary osteoarthritis with cuff tears or for secondary osteoarthritis [7]. The same operation gives different results depending on why you needed it, which is worth knowing when you are quoted an average.

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# Reverse Shoulder Arthroplasty

## Complication rates from published literature

Pooled from 80 published studies. These are population-level rates, not your individual risk — your surgeon will discuss what applies to you.

| COMPLICATION                        | REPORTED RATE | NOTES                                                                                                                                                                                                            |
|-------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heterotopic ossification            | <b>27.0%</b>  | Rate reported 2-3 years after rTSA, reaching up to 75% at 10 years.                                                                                                                                              |
| Scapular notching                   | <b>10.8%</b>  | Inferior contact between the polyethylene humeral component and scapular neck is very common; while usually asymptomatic, severe notching may lead to glenoid loosening or implant failure over time.            |
| Loss of motion                      | <b>5%</b>     | Some loss of external rotation is common particularly with medialised designs; approximately 5% develop significant stiffness requiring manipulation or revision.                                                |
| Nerve compression syndromes         | <b>5%</b>     | Approximately 5% develop carpal or cubital tunnel syndrome; the majority improve once the arm is out of the sling.                                                                                               |
| Persistent pain or dissatisfaction  | <b>3-5%</b>   | Pain requiring intervention reported at 0.2% in a large registry (n=10,797); painful stiffness at 2.6%. Residual discomfort including difficulty lying on the operated shoulder is more common but usually mild. |
| Acromial or scapular spine fracture | <b>2.0%</b>   | Stress fractures from increased deltoid tension and arm lengthening at average 9.4 months postoperatively; risk higher in females (male:female 1:5.4) and thin acromion.                                         |
| Component complications             | <b>2-5%</b>   | Glenoid baseplate loosening (5%), component disassembly (2.2%), humeral loosening (1.9%), or screw breakage may require revision surgery.                                                                        |
| Revision rate                       | <b>1.5%</b>   | Approximately 5-10% may require revision surgery within 10 years for infection, instability, loosening, fracture, or component failure.                                                                          |
| Infection                           | <b>1.2%</b>   | Deep infection requiring multiple washouts, prolonged antibiotics, and potentially component removal with staged revision; risk is higher in revision surgery, diabetes, and immunocompromised states.           |

| COMPLICATION                   | REPORTED RATE | NOTES                                                                                                                                                                                                |
|--------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dislocation or instability     | <b>0.9%</b>   | Risk factors include revision surgery, neurological conditions, subscapularis insufficiency, and improper positioning; treatment may require closed reduction or revision to constrained components. |
| Periprosthetic fracture        | <b>0.8%</b>   | Intraoperative fractures in 1.4% overall increasing to 13.6% in revision cases; humeral fractures most common during stem insertion or in osteoporotic bone.                                         |
| Neurological complications     | <b>0.7%</b>   | The axillary nerve is most at risk; medialised implants show 2.9% nerve injury versus 0.5% for lateralised designs; most are neurapraxias recovering within 3-6 months.                              |
| Hematoma                       | <b>0.3%</b>   | This figure comes from a single-centre study of 299 cases.                                                                                                                                           |
| Complex regional pain syndrome | <b>0.3%</b>   | This figure comes from a single-centre study of 299 cases.                                                                                                                                           |
| Medical complications          | <b>0.2%</b>   | Systemic complications including pulmonary embolism, pneumothorax, myocardial infarction, or stroke are rare.                                                                                        |
| Wound complications            | <b>Rare</b>   | Wound healing problems are rare; risk elevated in patients on therapeutic anticoagulation.                                                                                                           |

I have read this information and have had the opportunity to ask Dr Hirpara questions about the procedure, its expected recovery, and the complications listed above.

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PATIENT – PRINT NAME

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SIGNATURE

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DATE