CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

REHABILITATION PROTOCOL

# Radial Head Replacement

The radial head at the elbow is often shattered in a fall onto an outstretched hand; when it cannot be fixed it is replaced with a metal implant to keep the elbow stable and moving.

Kieran Hirpara 4.0

This protocol guides your recovery after **radial head replacement** at the elbow — where a shattered radial head is replaced with a small metal implant — with Dr Kieran Hirpara at Mater Private Hospital Rockhampton. It begins with your home exercise program, followed by the structured clinical protocol written **for your hand therapist** — bring this page or its PDF to your first therapy visit so your rehabilitation stays coordinated. Your therapist may adjust the plan depending on how your recovery progresses and on exactly what was repaired during your operation.

If you have any concerns about your wound after surgery, get in touch with the rooms. It is often helpful to take a photo of the wound and email it for review.

## What to expect

The radial head is the round top of one of the two forearm bones, where it meets the elbow. When it is broken into too many pieces to fix, it is replaced with a small **metal implant** that restores a stable, congruent elbow and a smooth forearm rotation axis. This is often done as part of repairing a more complex injury — a fracture-dislocation sometimes called a **"terrible triad"**, where the radial head, a piece of the coronoid, and the ligaments on the side of the elbow are all injured together.

Because the implant restores stability, the priority of your rehabilitation is **early protected movement to prevent stiffness** — elbows are very prone to going stiff after this kind of injury, and the best protection against that is to start moving early. Your elbow is rested in a **simple sling for comfort** between exercises — **not a hinged brace** — and the sling comes off for your exercises and for washing.

Two things shape how soon and how far you move:

- **Any ligaments that were repaired need protecting.** If the ligament on the outside of the elbow (the lateral collateral ligament) was repaired, the forearm is held and exercised **turned palm-down (pronated)** early on; if the ligament on the inside (the medial collateral ligament) was repaired, it is held **palm-up (supinated)**; if both, in a neutral mid-position. Your therapist will tell you which applies to you.

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- **The elbow must be protected from sideways (varus) stress and, early on, from full straightening** if the elbow was unstable. This is why movement is opened up in stages rather than all at once.

Movement is progressed steadily, with strengthening usually beginning from about six weeks and a return to full activity around three months. The implant and the healing keep settling for several months, which is why heavier loading is built back gradually.

## Precautions and limitations

- Wear your **simple sling for comfort** as directed — this is **not a hinged brace**, and it comes off for exercises and washing.
- Keep the forearm in the **position your therapist gives you** during early exercises (palm-down if the outside ligament was repaired, palm-up if the inside one was, neutral if both) — this protects the repair.
- Do **NOT** put sideways (varus) stress through the elbow — avoid leaning on the elbow or letting the arm hang unsupported across your body early on.
- Do **NOT** force full straightening early if you have been told the elbow was unstable — straighten only within your allowed range.
- Do **NOT** lift, push, pull or bear weight through the operated arm until cleared (commonly around six weeks) — keep early hand use light.
- Keep your **shoulder, wrist and fingers moving** from the start, and do **NOT** drive while your arm is in the sling or cannot safely control the wheel.

For wound, swelling and scar management, see the practice's wound care guidance.

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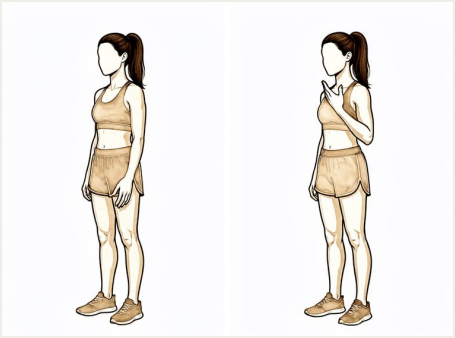
# Your exercises



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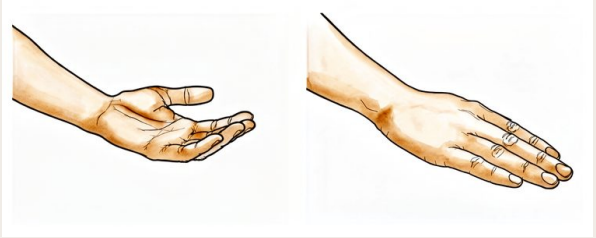
### Elbow bends and straightening (active-assisted)

Out of the sling, gently bend and straighten the operated elbow within the range you have been given, using your other hand to help guide it so the arm does not have to work hard. Early motion is the most important thing here — the metal implant has restored a stable elbow so it is safe to move, and moving early is what keeps the elbow from going stiff. Stay within any limit on full straightening if you have been given one.

**10 times, 3–4 times a day, within your allowed range**



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### Forearm rotation (palm up / palm down)

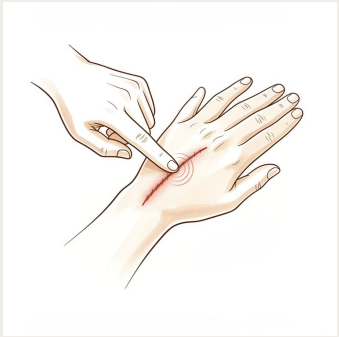
With your elbow tucked at your side and bent to a right angle, gently turn your palm up towards the ceiling, then down towards the floor. Keep the elbow still and let only the forearm rotate. Early on you may be asked to favour one direction (palm down, or palm up) to protect a repaired ligament — follow the direction your therapist gives you. This keeps the forearm supple, which is one of the first movements to stiffen after this injury.

**10 times each allowed direction, 3–4 times a day**

### Shoulder and hand movement

Keep your shoulder, wrist and fingers moving freely from day one so they do not stiffen while the elbow recovers. Make a full fist and stretch the fingers out, circle the wrist, and move the shoulder gently. Use the hand for light everyday tasks within comfort. None of this loads the elbow repair.

**10 times each, several times a day**



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### Scar care

Once the wound is fully healed and the surgeon or therapist has cleared it, massage the scar with a little moisturiser using small circles for a few minutes. This keeps the scar supple and less sensitive. Do not start until the wound is completely closed.

**A few minutes, 2–3 times a day, once healed**

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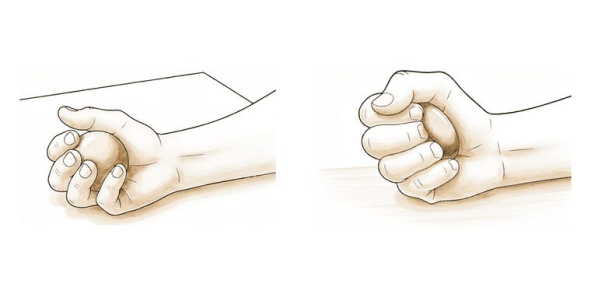

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**Strengthening from 6 weeks**

A LATER exercise — only once cleared, commonly from around six weeks. Begin gentle strengthening of the elbow, forearm and grip — for example squeezing a soft ball, then light resisted bending and straightening — and build the effort up gradually over the following weeks. Do not rush heavier loading; the elbow is still maturing for several months.

**As guided by your hand therapist (from ~6 weeks only)**

These are the exercises from your handout. Start them only as guided by Dr Hirpara and your hand therapist, staying within whatever range and forearm position you have been given. The early exercises keep the elbow and forearm moving **to prevent stiffness without straining any repair** — active-assisted elbow bending and straightening, gentle forearm rotation in your allowed direction, and keeping the shoulder and hand free. Strengthening and scar care belong to **later phases** and should not be started until you are specifically cleared. Stop anything that causes sharp pain or a feeling that the elbow is giving way.

# Your clinical protocol

The rest of this page is the staged clinical protocol for rehabilitation after radial head replacement (radial head arthroplasty), most commonly performed for an unreconstructable comminuted radial head fracture, often as part of a terrible-triad fracture-dislocation. This section is to be provided to the hand therapist, and each phase opens with a plain-English explanation of what is happening. The implant restores a stable, congruent radiocapitellar articulation, so the guiding principle is **early protected motion to prevent the stiffness these elbows are prone to** — with the arc and forearm rotation **gated by the integrity of any collateral-ligament and coronoid repairs**.

*Prior to treatment, check the patient's operation report and the examination-under-anaesthesia stability assessment, and liaise with the treating surgeon regarding: which collateral ligaments and/or coronoid were repaired, the stable arc demonstrated intra-operatively, and the protective forearm rotation. Dr Hirpara rests the elbow in a simple sling for comfort (no hinged brace) and favours an accelerated, early-motion approach where stability allows. Forearm-position rule: LCL repair → exercise/rest in pronation; MCL repair → supination; both → neutral mid-position; avoid varus stress and, where the elbow was unstable, terminal extension early.*

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## PHASE I — EARLY PROTECTED MOTION (WEEKS 0 TO 2)

The first two weeks start gentle protected motion as soon as wound stability allows — often within the first week — to get ahead of stiffness. The arm rests in a simple sling for comfort, off for exercises and hygiene. The elbow moves through its safe arc with the forearm held in the protective rotation for whichever ligament was repaired.

**For your hand therapist:**

**Education and precautions** - Immobilise in a **simple sling for comfort** (no hinged brace); off for exercises and washing - Begin active-assisted/active elbow flexion–extension within the **intra-operatively demonstrated stable arc**; avoid terminal extension if the elbow was unstable - **Forearm rotation in the protective position**: pronation if LCL repaired, supination if MCL repaired, neutral mid-range if both - **No varus stress** at any time; perform overhead exercises supine where unstable to neutralise varus and use gravity to coapt the joint - No weight-bearing or pushing through the operated arm

**Management** - Wound: surgical dressings as directed; confirm wound stability before commencing motion - Oedema: elevation, gentle hand pump, ice as needed - Exercises: AAROM/active elbow flexion–extension within the stable arc; forearm pro/sup in the protected direction with the elbow at 90°; full active shoulder, wrist, hand and grip ROM

**Criteria to progress** - Wound settling; comfortable controlled motion within the protected arc

## PHASE II — PROGRESSING THE ARC AND FOREARM ROTATION (WEEKS 2 TO 6)

From around two to six weeks the protected arc is gradually widened towards full extension and forearm rotation is opened up in both directions, with the aim of **full pronation/supination by about eight weeks**. Strengthening and loading are still withheld.

**For your hand therapist:**

**Assessments** - Active and passive elbow flexion–extension and forearm rotation; pain and swelling; wound/scar review; stability symptoms

**Education and precautions** - Progress towards **full extension** as stability allows (release any early extension block gradually) - Progress **forearm rotation in both directions** towards full, still mindful of the repaired ligament early in this phase - Continue to avoid varus stress and any loading through the arm

**Management** - Exercises: widen elbow flexion–extension arc to full; progress pro/sup towards full ROM (target full by ~8 weeks); commence scar management once the wound is healed; continue shoulder/wrist/hand ROM - An overhead (supine) motion programme remains useful where residual instability is a concern

**Criteria to progress** - Approaching full painless ROM; no instability symptoms; pain ≤ 3/10

## PHASE III — STRENGTHENING AND RETURN (WEEKS 6 TO 12 AND BEYOND)

Once movement is restored and the repairs are deemed secure (commonly around six weeks), strengthening begins and is built up gradually — grip, then resisted elbow and forearm work — progressing through the following weeks. Return to heavier activity is criterion-based, typically around three months.

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**For your hand therapist:**

**Assessments** - Elbow and forearm strength versus the other side; pain/swelling response to loading; functional and work-/sport-specific testing as appropriate

**Education and precautions** - Begin **gentle resisted strengthening** (grip → resisted elbow flexion–extension and pro/sup) from around six weeks; build load gradually - Progress to functional and work-specific loading as tolerated; avoid sudden heavy or impact loading early

**Management** - Exercises: progressive resisted elbow/forearm strengthening (band → light weights); grip strengthening; graded functional loading; continue any residual mobility work - Watch for and report persistent or worsening pain, mechanical symptoms or loss of motion (possible implant overstuffing/loosening or capitellar wear), and refer back to the treating doctor if recovery plateaus or there is a poor outcome - Consider discharge once motion is functional and strength is near-symmetrical

**Criteria for return to full activity** - Functional pain-free ROM; near-symmetrical strength; confident, stable elbow under load

## Getting back to work and activity

Light everyday hand use — eating, writing, light self-care — is encouraged from the start, within comfort, as long as it does not involve pushing, lifting or bearing weight through the elbow. Because you must not drive while the arm is in the sling or unable to safely control the wheel, plan for help with transport in the early weeks; driving resumes once you are out of the sling and can control the car, as confirmed at your review.

Strengthening usually begins from about **six weeks** and is built up gradually. **Return to heavier work, lifting and sport is typically around three months**, and is based on regaining full pain-free movement and adequate, symmetrical strength with a stable elbow — judged by Dr Hirpara and your hand therapist, not by the calendar alone. Heavier manual work and contact sport follow the same criterion-based progression.

## After your protocol

This protocol works alongside the practice's general recovery advice — see managing post-operative pain, wound care and scar management. The phased plan above reflects published rehabilitation guidance after radial head arthroplasty and terrible-triad reconstruction, and your ongoing recovery is guided individually by Dr Hirpara and your hand therapist according to how your elbow progresses and exactly what was repaired.

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