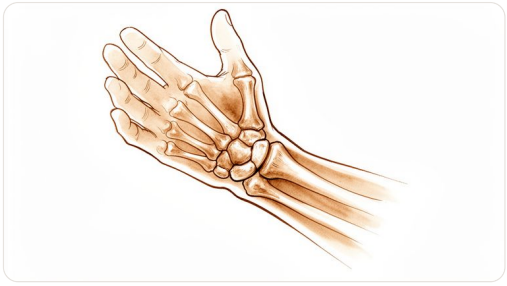
CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

REHABILITATION PROTOCOL

Wrist Fusion



A total wrist fusion joins the forearm to the hand with a dorsal plate so the worn-out wrist no longer moves; the fingers, thumb and forearm rotation are deliberately kept moving.

Kieran Hirpara 4.0

This protocol guides your recovery after a **total wrist fusion** (also called wrist arthrodesis) — an operation that permanently joins the worn-out wrist solid so it no longer moves — 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.

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

A total wrist fusion is done for a wrist that is worn out across all of its joints (end-stage, or "pancarpal", arthritis) and is painful with movement. Rather than trying to keep a worn joint moving, the operation **takes the movement away on purpose**: the forearm bone (the radius) is joined to the hand bones (the metacarpals) with a **dorsal plate** running along the back of the wrist, setting the wrist solid in a position of slight backward tilt (slight extension) that is best for gripping. Over the following weeks the bones knit together (unite) into one solid block.

The key idea of this recovery is the opposite of most operations: **the wrist is meant to stop moving — that is the cure, not a complication.** So there is no goal of regaining wrist movement, and no exercises to bend or straighten the wrist. Instead, the whole rehabilitation protects two things that the fusion does **not** touch and that matter enormously for hand function:

- **Your fingers and thumb must stay fully mobile.** Stiff fingers are the main thing that lets a wrist fusion down, so finger and thumb movement starts from day one.
- **Forearm rotation (turning your palm up and down) is preserved.** The fusion does not involve this movement, and it takes over a lot of what the wrist used to do — turning keys, taps and doorhandles — so it is kept supple from the start.

Because the dorsal plate holds the bones firmly (stable fixation), only a light splint or dressing is needed for comfort, and early finger and forearm movement is encouraged rather than held back. Once the bone has united — usually around six to eight weeks — grip strengthening begins. Many people function very well after a

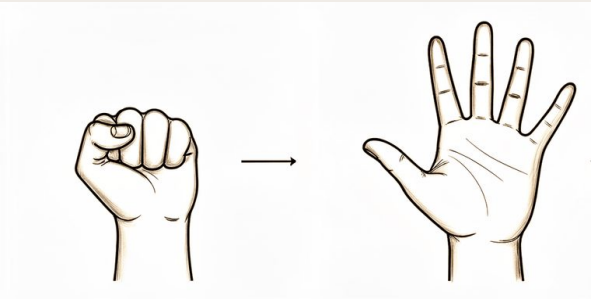
wrist fusion, and because gripping is no longer painful, **grip strength often improves** compared with the painful wrist before surgery.

Precautions and limitations

- Do **NOT** try to move the wrist itself — it is fused solid by design. There are no wrist-bending exercises, now or ever.
- Do **keep your fingers, thumb and forearm rotation moving fully from day one** — this is the single most important thing you can do for your hand.
- Wear your splint or dressing as directed for comfort and protection until the bone has united; keep it clean and dry.
- Do **NOT** load or grip hard, and avoid lifting more than a light cup, until the fusion has united and you are cleared (usually around six to eight weeks) — heavy loading before union risks the plate or the fusion failing.
- Do **NOT** drive while you are in a splint or cannot safely control the car; driving resumes once you are out of the splint and can manage the wheel, as confirmed at your review.

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

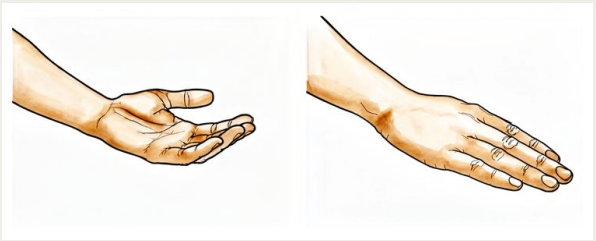
Your exercises



Finger and thumb movement

Keep your fingers and thumb moving fully from the very first days. Make a complete fist, then open the hand wide and stretch the fingers straight; then touch your thumb to the tip of each finger in turn. Your wrist does not move — that is normal and intended — but the fingers and thumb must stay loose and fully mobile, because stiffness here is the main thing that limits the hand after a wrist fusion.

10 times each, several times a day, from day one



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. The fusion does not involve these turning movements, so they stay free — keeping them supple is important, as turning the forearm does a lot of the work the wrist used to do (turning a key, a doorknob, a tap).

10 times each direction, 2–3 times a day

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Swelling control

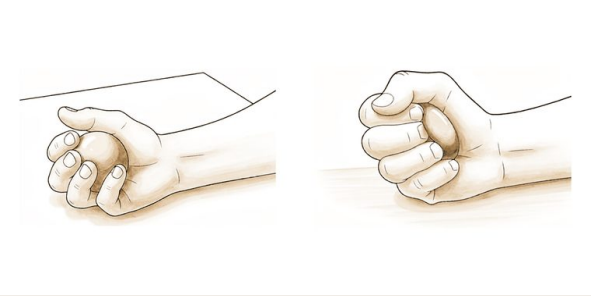
For the first couple of weeks, rest your hand raised up on pillows above the level of your heart whenever you sit or lie down, and pump your fingers gently open and closed. This drains the swelling that always follows hand surgery; less swelling means the fingers move more freely and the wound settles faster.

Elevate whenever resting; finger pumps 10 times, hourly while awake

Scar care

Once the wound has fully healed and there is no scab, massage the scar over the back of your wrist with a little moisturiser, using small firm circles. This keeps the scar soft and stops it sticking to the plate and tendons underneath. Your hand therapist will start this at the right time.

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



Grip strengthening after union

A LATER exercise — only once the fusion has united (usually around six to eight weeks) and you are cleared. Squeeze a soft ball or therapy putty in your palm and hold, then release. The fused wrist gives the hand a stable, pain-free base to grip from, so grip strength usually improves over the following months. Build it up gradually.

10–15 squeezes, 2–3 times a day, once cleared after union

These are the exercises from your handout. Start them only as guided by Dr Hirpara and your hand therapist. The early exercises all protect what the fusion leaves free — **finger and thumb movement, forearm rotation, and swelling control** — and none of them involve the wrist, which stays solid. **Grip strengthening belongs to a later phase** and should not be started until the fusion has united and you are specifically cleared. Stop anything that causes sharp pain over the back of the wrist.

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Your clinical protocol

The rest of this page is the staged clinical protocol for rehabilitation after total wrist arthrodesis. This section is to be provided to your hand therapist, and each phase opens with a plain-English explanation of what is happening. There is **no wrist-ROM goal** — the radiocarpal (and usually third carpometacarpal) joints are fused with a dorsal plate. The protocol exists to **preserve digital range, forearm rotation and oedema control while the fusion unites, then build grip on the stable construct.**

Prior to treatment, check the patient's operation report and past medical history, and liaise with the treating surgeon regarding the construct (dorsal arthrodesis plate; whether the third CMC joint is included or spared), the fused wrist position, any bone graft used, and the union status. Dr Hirpara fuses the wrist in slight extension with a dorsal plate; fixation is stable, so a light splint/dressing for comfort is used rather than prolonged rigid casting, and early digital and forearm motion is the priority.

PHASE I — PROTECT THE CONSTRUCT, MOBILISE THE FREE JOINTS (WEEKS 0 TO 6)

The first six weeks protect the healing fusion while keeping everything that is *not* fused fully mobile. A light splint or dressing is worn for comfort. There is **no wrist motion** — the construct is rigid by design — and the focus is entirely on the fingers, thumb, forearm and swelling.

For your hand therapist:

Education and precautions - Splint/dressing for **comfort and protection** until clinical and radiographic union; no rigid prolonged casting required given stable plate fixation - **No wrist mobilisation** — the radiocarpal/CMC construct is fused; there is no ROM target - **No loaded grip or lifting beyond a light cup** until union confirmed - Watch for digital stiffness — the principal threat to outcome after wrist fusion

Management - Wound: surgical dressings as directed; sutures out and splint/X-ray review at around 10–14 days; monitor for infection - Oedema: elevation above heart level, gentle digital pumping, ice as needed - Exercises: full active **finger and thumb AROM** (composite fist → full extension, thumb opposition) from day one; active **forearm pronation/supination**; active shoulder and elbow ROM; **no wrist motion, no resisted grip**

Criteria to progress - Wound healed; full or near-full digital ROM maintained; early radiographic signs of union at around six weeks

PHASE II — CONFIRM UNION, BEGIN GRIP LOADING (WEEKS 6 TO 12)

From about six to eight weeks the fusion is usually uniting on X-ray, and once the surgeon confirms this the splint is discarded and grip strengthening begins. Forearm and finger work continues; the wrist remains fused and unloaded only until union is confirmed.

For your hand therapist:

Assessments - Confirm union status with the treating surgeon before loading; digital ROM; forearm rotation arc; grip baseline; wound/scar review

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Education and precautions - Begin grip and light loading **only after the surgeon confirms union** (commonly six to eight weeks) - Hardware over the dorsal wrist is subcutaneous — watch for prominence/irritation and report it - Continue to prioritise full digital ROM throughout

Management - Exercises: progressive **grip strengthening** (soft ball → putty → graded grippers) once union confirmed; commence **scar management** once wound healed; continue forearm rotation and full digital ROM; introduce light functional hand use - Educate that **forearm rotation now substitutes for lost wrist motion** in daily tasks (keys, taps, turning)

Criteria to progress - Confirmed union; pain-free light grip; full digital ROM; scar mobile

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

Once the fusion is solid, there are no movement restrictions to protect — the hand can be loaded as tolerated and built up. Grip and overall hand strength continue improving for several months, often to better than before surgery because gripping is now pain-free.

For your hand therapist:

Assessments - Grip strength versus the other side; functional and work-/task-specific testing; hardware tolerance

Education and precautions - No movement restrictions once united; progress load as tolerated - Heavy/manual loading built up gradually; full strength gains continue up to around twelve months

Management - Exercises: progressive resisted grip and forearm strengthening; graded return to functional and work tasks; continue any residual digital mobility work - Consider discharge once grip is functional and improving and daily tasks are managed; refer back to the treating doctor if digital stiffness, persistent hardware irritation, or a poor outcome develops

Criteria for return to load - Solid union; functional, improving grip; pain-free task-specific loading

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 you are not gripping hard or lifting more than a light cup before the fusion has united. Because you must not drive while in a splint or unable to safely control the car, plan for help with transport in the early weeks; driving resumes once you are out of the splint and can manage the wheel, as confirmed at your review.

Loaded gripping, lifting and pulling wait until the fusion has **united (usually around six to eight weeks)** and you are cleared, and are then built up gradually. Most people are back to office or light work by around **three months**, with heavier or manual work later, on a criterion-based progression judged by Dr Hirpara and your hand therapist rather than the calendar alone. Strength keeps improving for up to a year, and because the worn-out wrist is no longer painful, many people grip more strongly and use the hand more freely than they could before surgery.

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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 outcomes and rehabilitation guidance after total wrist arthrodesis, and your ongoing recovery is guided individually by Dr Hirpara and your hand therapist according to how your fusion and hand progress.

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