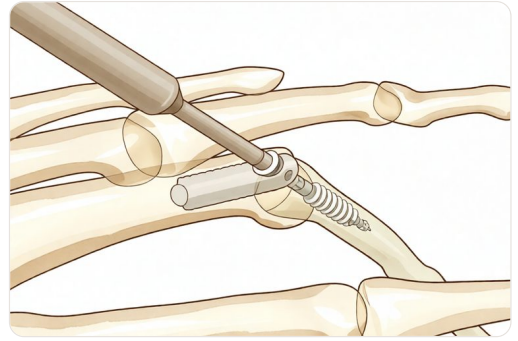


# PIP Joint Fusion

A PIP joint fusion locks the worn or unstable middle finger joint solid in a functional, slightly bent position; the knuckle and fingertip joints keep moving.

Kieran Hirpara 4.0



This protocol guides your recovery after **fusion (arthrodesis) of the PIP joint** – the middle joint of a finger – 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 hand 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 PIP joint fusion takes a worn-out or unstable middle finger joint and joins it solid, so it no longer moves. The joint is set in a **functional, slightly bent position** rather than dead straight – the bend is gentle in the index and middle fingers (about 15–20°) and increases towards the little-finger side of the hand (about 25–40° in the ring and little fingers), following the natural cascade your fingers make when you curl them. The fused joint is held in place with a small implant – a tension-band wire, a headless screw, K-wires, or a small plate – which holds that angle steady until the bone joins across the fusion.

This operation is often chosen for the **index and middle fingers**, where a stable joint for **pinch** matters more than movement at the middle joint. The PIP joint is meant to be stiff afterwards – that is the point of the operation. So unlike a tendon or ligament repair, recovery is not about regaining movement at that joint; it is about **protecting the fusion until the bone joins**, while keeping every other joint of the hand moving freely.

The plan is built around four ideas:

- **Protect the fusion until the bone unites.** Bony union usually takes about six weeks, and sometimes up to nine to twelve weeks. Until then the fused joint is supported in a splint.
- **Keep everything else moving from day one** – the fingertip joint, the knuckle, the neighbouring fingers, the thumb and the wrist – so the tendons do not stick down and the rest of the hand does not stiffen.
- **Manage swelling and the scar** in the early weeks.

- **Restore grip and pinch once the fusion has joined.** Don't smoke – smoking is known to slow bone healing and delay a fusion uniting.

## Precautions and limitations

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- **Do NOT load, grip or pinch hard through the operated finger** until the fusion has united (usually about six weeks, sometimes longer) – loading before the bone has joined risks the fusion not taking.
- **Keep the fused joint completely still** in its splint as directed; do not try to “test” or bend it.
- **Keep every other joint moving** from the first days – fingertip joint, knuckle, other fingers, thumb and wrist.
- Keep the splint **clean and dry**, wear it as directed, and look after the wound and any pin sites.
- Do **NOT** drive while you cannot safely control the wheel – usually until you are out of the splint at around six weeks.
- **Don't smoke** – it delays the bone joining.

For wound, swelling and scar management, see the practice's [wound care](#) guidance.

## Your exercises

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### DIP movement of the operated finger

With your hand therapist's go-ahead, gently bend and straighten the very last (fingertip) joint of the operated finger. Steady the middle of the finger with your other hand so only the fingertip moves. The fused joint must stay completely still – only the tip bends. Keeping this joint moving stops the tendons sticking down while the fusion heals.

**10 times, 3 times a day, fingertip joint only**

### MCP knuckle movement of the operated finger

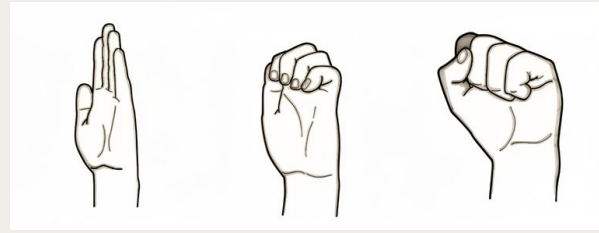
Gently bend and straighten the big knuckle (where the finger meets the hand) of the operated finger. The fused middle joint stays still throughout – only the knuckle moves. This keeps the knuckle supple and stops the finger stiffening up while the fusion settles.

**10 times, 3 times a day, knuckle joint only**

### Move all your other fingers, thumb and wrist

From the very first days, keep every joint that was NOT operated on moving freely — make a full fist and open right out with your other fingers, move your thumb in all directions, and bend, straighten and circle your wrist. This is the single most important thing you can do to keep your hand supple and prevent stiffness while the fused joint is protected.

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



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### Tendon glides (hook, fist, straight)

Move your hand slowly through three shapes to keep the tendons gliding: a hook (bend the tip and middle joints, knuckles straight), a full fist, then a flat straight hand. Do this with your unoperated fingers fully, and let the operated finger move only as far as the free (non-fused) joints allow. This keeps the tendons running smoothly and stops them sticking down near the surgery.

**5 of each shape, 3 times a day**

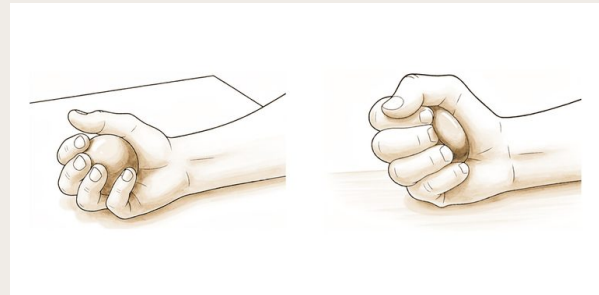


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### Scar massage

Once the wound is fully healed and your hand therapist has checked it, rub a little moisturiser into the scar using firm small circles for a couple of minutes. This softens the scar, settles the tenderness, and stops it tethering to the tissues underneath. Do not start this until the skin is fully closed.

**2–3 minutes, 2–3 times a day (after the wound has healed)**



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### Pinch and grip strengthening (after union)

A LATER exercise — only once the fusion has united and your hand therapist starts you on strengthening (usually after about six weeks). Squeeze a soft ball or putty for grip, and pinch a small object between your thumb and the operated finger to build the lateral pinch the fusion was done to make stable. Build the effort up gradually. Do NOT do any resisted gripping or pinching before you are cleared — it loads the fusion before the bone has joined.

**10 times, 2–3 times a day, as guided (after union only)**

These are the exercises from your handout. Start them only as guided by Dr Hirpara and your hand therapist, staying within whatever limits you have been given. The early exercises keep the **finger tip joint, the knuckle, and all your other fingers, thumb and wrist** moving — **without moving or loading the fused joint itself**, which stays still in its splint. Scar massage begins once the wound is healed. Pinch and 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 fused joint.

## CQ HAND + UPPER LIMB

Dr Kieran Hirpara — Specialist Orthopaedic Surgeon  
Suite 2, Level 1, Mater Private Hospital Rockhampton, 31 Ward Street, The Range, QLD 4700  
Phone 07 4863 6556 · office@cqupperlimb.com.au · cqupperlimb.com.au

# Your clinical protocol

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The rest of this page is the staged clinical protocol for rehabilitation after PIP joint arthrodesis. This section is to be provided to your hand therapist, and each phase opens with a plain-English explanation of what is happening. The fusion must be protected from load until **bony union** (typically ~6 weeks, up to 9–12 weeks); the governing principle is “**protect the fused joint, mobilise everything else**” – DIP, MCP, adjacent digits, thumb and wrist move from day one to prevent tendon adhesion and stiffness, with oedema and scar managed early and grip/pinch restored only after union.

*Prior to treatment, check the patient’s operation report and past medical history, and liaise with the treating surgeon regarding the fixation used (tension-band wire, headless intramedullary screw, K-wires, or plate), the set fusion angle, and whether K-wires are buried or to be removed. Dr Hirpara fuses the PIP in a functional flexed position that increases ulnar-ward across the hand (index/middle  $\approx 15\text{--}20^\circ$ , ring/little  $\approx 25\text{--}40^\circ$ ), most often for the index/middle finger where lateral pinch stability outweighs PIP motion. The fused joint is held in a splint until radiographic union; the evidence base is low-level (level-4 case series and expert consensus), so timings are individualised, not graded thresholds.*

## PHASE I – PROTECT AND SETTLE (WEEKS 0 TO 2)

The first two weeks protect the fusion and settle swelling and the wound, while every other joint of the hand starts moving immediately.

### For your hand therapist:

**Immobilisation** - Acute **volar finger splint or cast** spanning the **MCP and PIP**, but **leaving the DIP free** - Fused PIP held still; elevation for oedema

**Education and precautions** - **No grip, pinch or loading** through the operated finger - Keep the splint clean and dry; protect the wound and any pin sites

**Management** - Wound: surgical dressings as directed; monitor for infection and pin sites if K-wires used - Oedema: elevation, gentle pumping of the free joints, ice as needed - Exercises: from **day one**, active motion of all **non-fused** joints – adjacent fingers (full fist/extension), thumb, wrist; begin **DIP** active motion of the operated finger **within days**; tendon glides of the adjacent digits; **no movement or loading of the fused PIP**

**Criteria to progress** - Wound settling; swelling controlled; ready for a definitive custom splint at around 1–2 weeks

## PHASE II – CUSTOM THERMOPLASTIC SPLINT AND ACTIVE MOTION OF THE FREE JOINTS (WEEKS 2 TO 6)

From about two weeks a custom thermoplastic splint supports the fused joint while freeing the adjacent joints for active motion. The operated finger’s **DIP and MCP** are exercised out of the splint; the fused PIP remains protected. No resisted grip, pinch or loading yet.

### For your hand therapist:

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Phone 07 4863 6556 · office@cqupperlimb.com.au · cqupperlimb.com.au

**Assessments** - Adjacent-joint ROM, oedema, wound/scar review; confirm fixation stable on clinical grounds and per surgeon

**Immobilisation** - Transition to a **custom thermoplastic splint** supporting the fused PIP while freeing adjacent joints; **continuous protective splinting to ~6 weeks**

**Education and precautions** - **No resisted grip, pinch or loading** of the operated finger until union - Out of the splint for exercises only

**Management** - Exercises: **active DIP and MCP motion of the operated finger out of the splint** (DIP started within days, MCP added here); tendon glides of adjacent digits; continued thumb/wrist/adjacent-finger motion; commence **scar and oedema management** once the wound is healed - **No resisted grip/pinch/loading**

**Criteria to progress** - **Radiographic union** (typically around 6 weeks, up to 9–12); fused joint clinically and radiologically stable before any loading

### PHASE III – WEAN THE SPLINT AND PROGRESS LIGHT USE (FROM ~6 WEEKS, ONCE UNITED)

Once the fusion has united (usually around six weeks), the splint is weaned and progressively cut down, light functional use is introduced, and pinch, opposition and gripping are gradually rebuilt. K-wires, if used, are typically removed around six weeks.

#### For your hand therapist:

**Assessments** - Confirm radiographic union with the surgeon; grip/pinch strength versus the other hand; ROM of the free joints; scar

**Education and precautions** - Wean and **cut down the splint** once union is confirmed; remove K-wire ~6 weeks if used - Progress loading gradually – light use first, then graded pinch/grip

**Management** - Exercises: progress **light functional use** → **pinch, opposition and gripping**; commence **grip/pinch strengthening** (ball/putty, lateral pinch) and build gradually; continue scar work - Splint weaned after radiographic union

**Criteria to progress** - United fusion tolerating light load pain-free; splint discontinued; ready for progressive strengthening

### PHASE IV – PROGRESSIVE STRENGTHENING AND RETURN (FROM ~8–12 WEEKS)

With the fusion united and light use restored, strengthening and loading are progressed, and return to sport, heavy or manual activity is built up. The final settled result is reached at around nine to twelve months.

#### For your hand therapist:

**Assessments** - Grip and pinch strength versus the other side; functional and work-/sport-specific testing as appropriate

**Education and precautions** - Build resisted loading up gradually; the fused joint is permanently stiff by design – focus strength on grip and lateral pinch

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#### CQ HAND + UPPER LIMB

**Management** - Exercises: **progressive strengthening and loading** of grip and pinch; graded return to **sport, heavy and manual tasks** - Consider discharge once strength is functional and near-symmetrical; refer back to the treating doctor if recovery plateaus

**Criteria for return** - Pain-free, stable fused joint under load; adequate grip/pinch strength for the task – judged clinically, not by the calendar; **final settled result at 9–12 months**

## Getting back to work and activity

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Light everyday hand use with the rest of the hand is encouraged from the start, within comfort – the key restriction is **no gripping, pinching or loading through the operated finger until the fusion has joined**. Because you must not drive while you cannot safely control the wheel, plan for help with transport in the early weeks; **driving usually resumes at around six weeks**, once you are out of the splint and can safely control the car.

After union (around six weeks) you can begin **light use and gentle gripping. Lifting, gripping and pinch** build up from about **eight weeks**, and **full activity or sport** from about **twelve weeks**. The fusion keeps settling for several months, so the **final, fully settled result is at around nine to twelve months**. These timings are **expert-consensus single-clinic guides** – typical and individualised, not graded thresholds – and your progress is judged by Dr Hirpara and your hand therapist according to how the fusion heals, not by the calendar alone.

## After your protocol

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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 guidance on rehabilitation after PIP joint arthrodesis, and your ongoing recovery is guided individually by Dr Hirpara and your hand therapist according to how your finger heals.