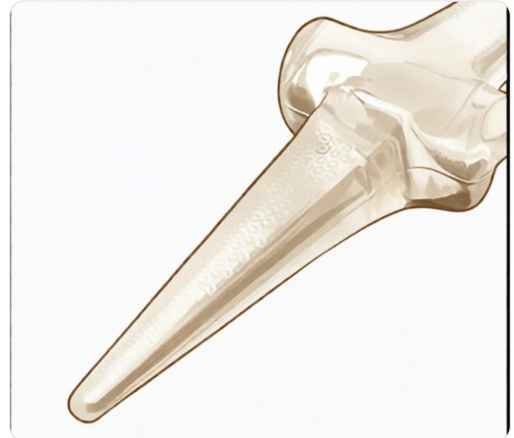
CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

REHABILITATION PROTOCOL

# PIP Joint Replacement

A worn PIP joint (the middle knuckle of the finger) is replaced with a flexible silicone spacer that works as a hinge, giving reliable pain relief and a useful arc of bending.

Kieran Hirpara 4.0



This protocol guides your recovery after **replacement of the worn middle joint of a finger** – the proximal interphalangeal (PIP) joint, the middle knuckle – with a flexible silicone spacer, performed by 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

The middle joint of your finger had worn out from arthritis, which is painful and stiff. In this operation the worn joint surfaces are removed and a **flexible silicone spacer** (a Swanson-type implant) is placed between the two bones. The spacer is not a rigid mechanical hinge – it is a bendy spacer that holds the bones apart, lets the finger bend, and lets your own scar tissue form a new supportive sleeve around it. The main and most reliable benefit is **pain relief**. You should also expect a **useful, modest arc of bending – usually around 40 to 60 degrees** – rather than a full, normal range. Most people are very satisfied because the pain is gone and the finger is comfortable to use.

**The single most important thing about your recovery is which way the surgeon went in**, because that decides how soon you can move:

- **From the front (the palm side – a volar approach):** the straightening tendon on the back of the finger is left fully intact. Because nothing on the back has to heal, you can usually **start moving the finger within a few days**.
- **From the back (a dorsal approach):** the straightening tendon (the central slip) has to be split or lifted to reach the joint, then repaired. That repair must be protected first, so the finger is **splinted straight early on and bending is introduced more gradually**, under your hand therapist's guidance.

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

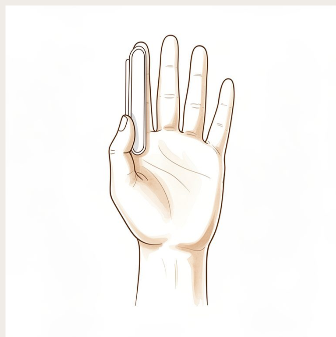
**Your hand therapist will follow the plan for your surgical approach** — Dr Hirpara will tell them which approach was used, and the timings below are tailored to it. Whichever approach you had, the new joint is a hinge: it likes bending and straightening in a straight line, but it does **not** like being pushed or twisted **sideways**. Protecting it from side-to-side stress is what keeps it stable for the long term.

## Precautions and limitations

- Move the finger only in a **straight line** — bending and straightening — and **avoid any sideways or twisting force** on the operated finger. The new joint is a hinge and side stress can loosen or deform it.
- Wear your **splint** as directed, and use **buddy strapping** for activity to keep the finger tracking straight.
- If your surgery was **from the back of the finger**, do **NOT** push your own straightening beyond the limit you are given early on — the straightening tendon is healing.
- Do **NOT** do firm gripping, hard pinching, or heavy or twisting tasks until your hand therapist clears strengthening (commonly from around six weeks).
- Keep the other finger joints, your wrist and your shoulder moving from the start, and use the hand for light everyday tasks within comfort.

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

## Your exercises

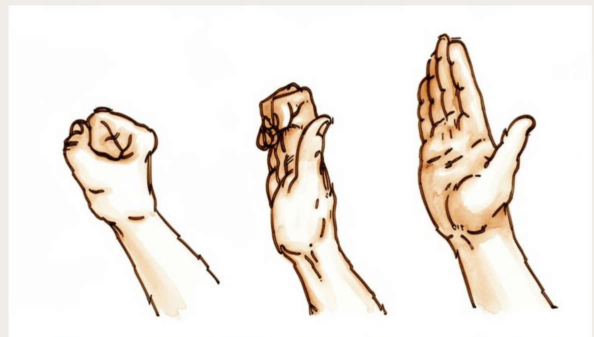


Kieran Hirpara 🅭🅯🄏 4.0

**Protected active bending (PIP joint)**

With your other fingers and the splint supporting the rest of the hand, gently bend and straighten the operated middle joint of the finger within the range your hand therapist has set. Keep it slow and straight — bend and straighten in a clean line, without letting the finger drift to one side. This keeps the new joint moving so it does not stiffen.

**10 times, several times a day, within your set range**

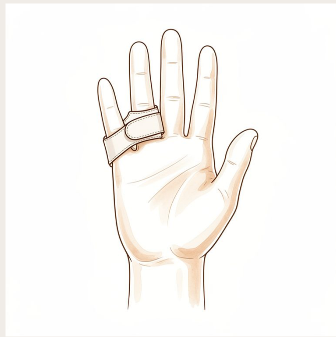


Kieran Hirpara 🅭🅯🄏 4.0

**Active straightening (extension)**

Gently straighten the operated finger out as fully and as straight as you can, then relax. If your surgery was from the back of the finger, this is the movement to protect early — your hand therapist will guide exactly how much to do and when, because the straightening tendon needs to heal first. Never force it.

**10 times, several times a day, as guided**

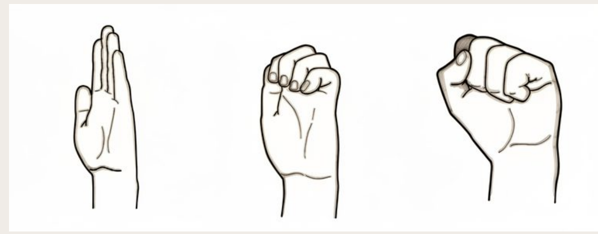


Kieran Hirpara 🅭🅯🄏 4.0

### Buddy strapping

Tape the operated finger gently to the finger next to it (above and below the middle joint, not over it). The neighbouring finger acts as a splint that guides yours to bend and straighten in a straight line and stops it tipping sideways onto the new joint. Wear it for activity as advised.

**Worn during light activity, as guided by your hand therapist**

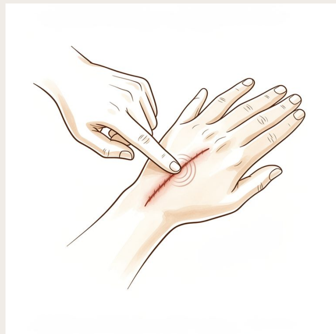


Kieran Hirpara 🅭🅯🄏 4.0

### Tendon glides

Move your hand through three shapes: fingers straight (flat hand), then bend only the end two joints into a hook, then curl into a gentle full fist, then straighten out again. This glides the tendons so they do not stick down as the finger heals. Stay within any bending limit you have been given.

**5–10 times through the sequence, several times a day**

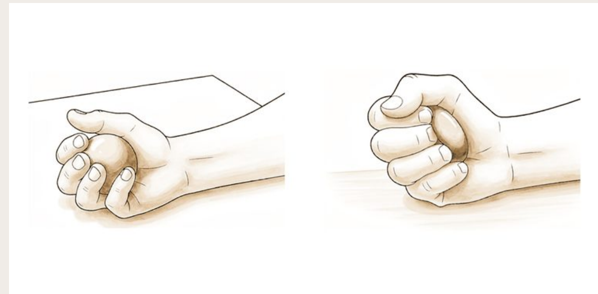


Kieran Hirpara 🅭🅯🄏 4.0

### Scar massage

Once the wound is fully healed, massage the scar with a little plain cream, using small firm circles for a few minutes. This keeps the scar soft and stops it tethering to the tendon and joint underneath. Do not start until your hand therapist confirms the wound has healed.

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



Kieran Hirpara 🅭🅯🄏 4.0

### Grip strengthening

A LATER exercise — only once your hand therapist clears strengthening (commonly from around six to eight weeks). Gently squeeze a soft ball or putty, building up slowly. Avoid hard pinching or any twisting that puts side-to-side force on the new joint until you are told it is safe.

**As guided by your hand therapist (later phase 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 limits you have been given. The early work keeps the finger **moving in a straight line without side stress** — protected bending, gentle straightening, buddy strapping and tendon glides. If your surgery was from the back of the finger, the **active straightening** exercise is the one to protect early and build up slowly. Grip strengthening belongs to a **later phase** and should not be started until you are specifically cleared. Stop anything that causes sharp pain or makes the finger feel unstable.

# Your clinical protocol

The rest of this page is the staged clinical protocol for rehabilitation after silicone PIP joint arthroplasty. This section is to be provided to your hand therapist, and each phase opens with a plain-English explanation of what is happening. **The protocol is approach-dependent**, and this is the central branch point: a **volar (palmar) approach** leaves the extensor mechanism intact and permits early active motion within days; a **dorsal approach** divides or splits the central slip, so extensor healing must be protected first with extension orthotics and graded flexion. Throughout, the silicone implant is a flexible spacer whose long-term stability depends on the peri-implant capsule — so **coronal (lateral) stress is avoided and motion is kept in a pure sagittal arc**.

*Prior to treatment, confirm with the treating surgeon the surgical approach (volar vs dorsal), the integrity/repair of the central slip and collateral ligaments, and any intra-operative arc. Dr Hirpara will specify the approach; select the volar (early-active-motion) or dorsal (extension-protected) pathway accordingly. The expected functional target is a pain-free arc of roughly 40–60°, not full range.*

### PHASE I — PROTECT AND INITIATE MOTION (WEEKS 0 TO 3)

The first weeks protect the soft tissues while preventing stiffness, with the pace set entirely by the approach. The implant is stable in flexion–extension but vulnerable to side load, so all motion is kept in a clean sagittal plane and the finger is supported by buddy strapping and a splint.

**For your hand therapist:**

**Education and precautions** - Identify the **surgical approach** and follow the matching pathway: - **Volar approach:** extensor mechanism intact → begin **active PIP/DIP motion at 3–5 days**. Fit a volar extension-block / template splint permitting a **short flexion arc (commonly ~30° initially)**, increased progressively. - **Dorsal approach (central slip split/repaired):** protect extension. **PIP splinted near full extension full-time**; introduce active flexion in a **limited short arc** under supervision, respecting the central-slip repair. (A relative-motion / dynamic-extension scheme may be used per surgeon preference.) - **Strict avoidance of coronal (lateral/radial–ulnar) stress** on the operated joint — buddy strap to the adjacent digit to guide pure sagittal tracking. - No gripping, pinching or resisted/loaded use.

**Management** - Wound: surgical dressings as directed; monitor for infection - Oedema: elevation, gentle retrograde massage, light compressive wrap - Exercises: protected active PIP/DIP flexion–extension within the set arc; **tendon glides**; active motion of uninvolved joints (DIP, MCP, wrist, thumb); commence buddy strapping for activity - Splint worn full-time between exercise sessions

**Criteria to progress** - Wound healing satisfactorily; no extensor lag developing (dorsal pathway); comfortable, controlled motion within the current arc

### PHASE II — ADVANCE MOTION (WEEKS 3 TO 6)

The flexion arc is opened up and, for dorsal-approach fingers, the extension protection is progressively relaxed as the central slip consolidates. The goal of this window is to bank the useful arc ( ≈ 40–60°) before scar maturation fixes the range.

**For your hand therapist:**

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

**Assessments** - Active and passive PIP arc; **extensor lag** (dorsal pathway); coronal stability; pain and oedema; wound/scar review

**Education and precautions** - Progressively **increase the permitted flexion arc** toward the functional target ( ≈ 40–60°) - **Volar:** advance active flexion as tolerated; add gentle passive flexion if extension is full and stable - **Dorsal:** wean extension splinting per central-slip healing (commonly weaning daytime support across weeks 4–6); guard against extensor lag — do not chase flexion at the cost of active extension - Continue **strict avoidance of lateral/torsional load**; no resisted strengthening yet

**Management** - Exercises: graded active and active-assisted PIP flexion–extension; blocking exercises to focus PIP motion; continue tendon glides and buddy strapping; commence **scar massage once the wound is healed** - Maintain full motion of adjacent joints

**Criteria to progress** - Healed wound; stable joint in the coronal plane; functional pain-free arc established; minimal extensor lag (dorsal)

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

Once motion is established and the soft tissues are sound (around six weeks), light strengthening begins and is built up gradually. Strengthening is kept axial — grip and straight-line loading — while lateral/torsional stress on the implant is still respected long-term.

**For your hand therapist:**

**Assessments** - Grip and pinch versus the other side; final PIP arc; coronal stability; functional and task-specific testing

**Education and precautions** - Begin **light grip strengthening** from around six weeks, building gradually - Introduce **pinch loading cautiously** and continue to **avoid forceful lateral/twisting loads** on the operated joint indefinitely (implant longevity) - Set realistic expectations: durable **pain relief** is the primary gain; the final arc is **modest ( ≈ 40–60°)** and largely set by ~3 months

**Management** - Exercises: progressive grip/putty work; graded functional and work-specific loading; continue any residual mobility and scar work - Consider discharge once a stable, comfortable, functional finger with a useful pain-free arc is achieved - Refer back to the treating doctor if recovery plateaus, the joint becomes unstable/deviates, or implant failure is suspected

**Criteria for discharge / return** - Comfortable, pain-free, coronally stable joint with a functional arc; adequate grip; able to meet daily and work demands

## 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 stays in a straight line and avoids side-to-side or twisting force on the operated finger. Driving is usually possible once you can grip the wheel comfortably and control the car safely, you are out of any restrictive splint,

and you are no longer taking strong pain medication — typically a couple of weeks, and confirmed at your review.

Firmer gripping and loaded tasks wait until about **six weeks**, and are then built up gradually. **Heavier manual or twisting work is the last thing to return**, and is based on regaining a comfortable, stable finger with adequate grip — judged by Dr Hirpara and your hand therapist, not by the calendar alone. Remember the lasting deal with this operation: reliable **pain relief** and a **useful arc of around 40 to 60 degrees**, with side-to-side stress on the joint avoided for the long term to protect the implant.

## 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 silicone PIP joint arthroplasty, and your ongoing recovery is guided individually by Dr Hirpara and your hand therapist according to which surgical approach was used and how your finger progresses.

**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