CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

REHABILITATION PROTOCOL

DIP Joint Fusion

A DIP joint fusion locks the small joint nearest the nail into one solid, pain-free unit in a slightly bent position; the bones grow together over the first weeks so the joint no longer moves.

Kieran Hirpara 4.0

This protocol guides your recovery after a **DIP joint fusion** (arthrodesis) — an operation that permanently joins the small joint at the very tip of your finger, nearest the nail — 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 DIP joint fusion is done when the small joint nearest the nail is worn out and painful — usually from arthritis (the bony lumps called Heberden's nodes), or to remove a troublesome mucous cyst together with the bone spur underneath it. Rather than trying to keep a painful, damaged joint moving, the operation **fuses it solid** in a slightly bent, functional position (up to about 35°). By design, **that joint never moves again** — and in exchange the pain goes and the fingertip becomes stable and strong to pinch with. The fixation is usually a small **buried headless screw** that stays in for good (no need to remove it), or sometimes a **K-wire** that is taken out at around six weeks. If a mucous cyst was removed, you will also have skin or nail-fold care to do as the area heals.

The whole of your rehabilitation is built around one simple idea: **protect the fusion until the bone has joined, but keep everything else moving.** The bone typically feels united by about **six to eight weeks**, with the X-ray catching up by around **ten weeks**. Until then:

- The **fused fingertip is splinted and protected** so the healing bone is not disturbed.
- **Every other joint keeps moving** — the middle joint of the finger, the knuckle, the thumb, the wrist, and all your other fingers — so the hand does not stiffen.
- **Swelling is controlled** and the **scar is managed** so the finger stays comfortable and supple.
- Once the bone has joined, **pinch and grip are rebuilt gradually** rather than all at once.

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Precautions and limitations

- **Wear your fingertip splint as directed.** Early on it is worn continually; later it is worn only for activity. It holds the fused joint still but leaves the **middle joint of the finger (the PIP) free to move**.
- Do **NOT** power-grip, pinch hard or lift heavily with the operated finger until the fusion has joined and you are cleared — keep to about **1 kg (≈ 2 lb)** in the first six weeks.
- **Keep every other joint moving** from the start — the middle and knuckle joints of the finger, the thumb, the wrist, and all your other fingers.
- **Keep the dressing dry and the hand elevated** in the first 10–14 days to settle swelling, and follow any nail-fold or cyst-site care if a mucous cyst was removed.
- If you have a **K-wire**, protect it and keep the area clean until it is removed at about **six weeks**; a buried screw needs no removal.
- Do **NOT** drive until you are out of the bulky splint and can safely grip and control the wheel — usually around **six weeks**, at your surgeon's discretion.

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

Your exercises

PIP and MCP movement (the joints either side of the fusion)

With your DIP splint on (it holds only the fingertip joint still), bend and straighten the MIDDLE joint of the finger and the big knuckle joint at its base, making a gentle fist and opening fully. The fused tip is not meant to move, but the joints either side of it must stay loose so the finger does not stiffen up. Move smoothly and within comfort.

10 times, 3–4 times a day

Move all your other fingers, thumb and wrist

Keep everything that was NOT operated on moving freely from day one: make a full fist and open right out, touch your thumb to each fingertip, and bend your wrist gently up and down. Only the fused fingertip is restricted — the rest of the hand should work as normally as comfort allows so it does not get stiff or weak.

10 of each, several times a day

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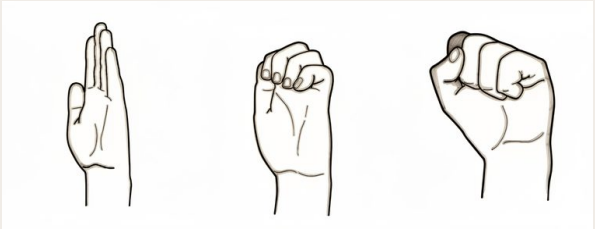

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Tendon glides (hook, fist, straight)

Move your fingers through three shapes — a hook (bend the tip and middle joints, knuckles straight), a full fist, then a flat straight hand — pausing briefly in each. This keeps the tendons gliding smoothly through the healing area so they do not stick down. Keep the splinted fingertip comfortable throughout; the glide is for the rest of the finger.

5–10 of each shape, 3 times a day

Swelling control (elevation and compression)

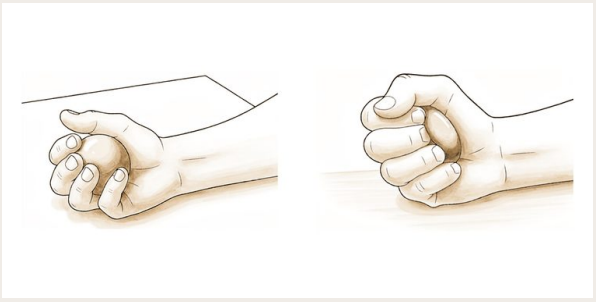
Keep your hand raised above the level of your heart as much as you can in the first couple of weeks — propped on a pillow or cushion. Once the wound allows, a light compression sleeve or self-adherent (Coban) wrap on the finger helps settle swelling. Less swelling means an easier, freer-moving hand.

Elevate often through the day; compression as fitted by your hand therapist

Scar massage

Once the wound is fully healed and your hand therapist gives the go-ahead, rub a little plain moisturiser into the scar with small, firm circles for a minute or two. If a mucous cyst was removed, your therapist will also guide care of the nail fold and surrounding skin. This keeps the scar soft and less sensitive.

1–2 minutes, 2–3 times a day, once the wound is healed



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Grip and pinch strengthening (after union)

A LATER exercise — only once the fusion has joined on X-ray and your hand therapist starts it (commonly from around 6–8 weeks). Begin gently squeezing therapy putty and doing light pinches between thumb and fingertip, then build up the effort slowly over the following weeks. Do not power-grip or pinch hard before you are cleared — loading the fingertip too early can disturb the healing bone.

As guided by your hand therapist, building gradually (from ~6–8 weeks)

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 rest of the hand moving freely **without disturbing the fused fingertip** — movement of the joints either side of the fusion, all your other fingers, thumb and wrist, tendon glides, and swelling control. **Grip and pinch strengthening belongs to a later phase** and should not be started until the fusion has joined on X-ray and you are specifically cleared. Stop anything that causes sharp pain at the fingertip.

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Your clinical protocol

The rest of this page is the staged clinical protocol for rehabilitation after DIP joint (distal interphalangeal) 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 principle is **protect the arthrodesis site until bony union while preserving full motion at every other joint** — the DIP is immobilised in a P2–P3 splint that leaves the PIP free, oedema and scar are managed, and pinch/grip are reloaded progressively 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 (headless compression screw — buried, no removal — vs K-wire, removed ~6 weeks), the fusion position (slight flexion, up to ~35°), and whether a mucous cyst with skin/nail-fold excision was performed. Clinical union is typically expected around 6–8 weeks with radiographic union around 10 weeks; the rehab timeline below is low-level expert consensus and is subject to surgeon discretion and X-ray confirmation of union before splint weaning and loading.

PHASE 1 — PROTECT AND SETTLE (WEEKS 0 TO 2)

The first fortnight protects the freshly fixed fusion and settles swelling and the wound, while keeping every uninvolved joint moving so nothing stiffens.

For your hand therapist:

Education and precautions - Bulky surgical dressing/splint with **elevation** for the first **10–14 days**; keep the dressing dry - Protect the arthrodesis site; **no loading** of the operated fingertip - If a K-wire is present, protect the pin site; review nail-fold/cyst-excision wound where applicable

Management - Wound: surgical dressings as directed; monitor for infection - Oedema: elevation, gentle hand pumping, ice as appropriate - Exercises: **AROM of all uninvolved joints** — PIP and MCP of the operated finger, thumb, wrist, and all other digits; commence tendon glides as comfort allows

Criteria to progress - Wound settling; swelling controlled; ready to transition into a custom removable DIP-blocking splint at around two weeks

PHASE 2 — DIP-BLOCKING SPLINT WITH ACTIVITY (WEEKS 2 TO 6)

From about two weeks the bulky dressing is replaced by a **custom removable DIP-blocking splint** (a Stax/mallet-type orthosis spanning **P2–P3**) that immobilises only the fingertip joint and **leaves the PIP free**. It is worn continually through this phase. Full active motion is encouraged everywhere else, swelling and scar are managed, and the fingertip stays unloaded.

For your hand therapist:

Education and precautions - **Custom removable DIP-blocking splint (P2–P3, PIP free)** worn **continually** through this phase - **No power grasp or pinch**; functional load limit ~**2 lb (≈ 1 kg)**

Management - Exercises: active **PIP, MCP, thumb and wrist** motion plus **all-other-digit** motion; **tendon glides** (hook, full fist, straight) - Oedema: continue elevation and add **compression** (Coban/light sleeve) as

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tolerated - Scar: commence **scar massage** once the wound is fully healed; nail-fold care where a mucous cyst was excised

Criteria to progress - Maintained PIP/MCP motion; controlled swelling; healed wound; **clinical union emerging at around six weeks** (proceed to weaning only with X-ray confirmation of union)

PHASE 3 — WEAN THE SPLINT AND BEGIN GENTLE STRENGTHENING (WEEKS 6 TO 8)

Once the fusion is **united on X-ray** (clinically ~6–8 weeks), the splint is weaned — worn for activity/protection only — and a K-wire, if used, is removed at about six weeks. Gentle strengthening of pinch and grip begins.

For your hand therapist:

Education and precautions - **Wean the DIP splint once union is confirmed** — continued protective/activity-only wear as needed; **K-wire removed ~6 weeks** - Progress loading gradually; functional limit ~**5 lb (≈ 2 kg)** from around **8 weeks**

Management - Exercises: begin **gentle grip and pinch strengthening** — therapy putty, light pinch and grip work; continue full motion at all other joints; continue scar management - Reassess any residual swelling or PIP/MCP stiffness and address as needed

Criteria to progress - Radiographic union confirmed; comfortable fingertip; tolerating gentle loading without pain at the fusion site

PHASE 4 — PROGRESSIVE STRENGTHENING AND DISCHARGE (WEEKS 8 TO 12)

With the fusion solid, strengthening is progressed towards normal hand function, and restrictions are lifted by around twelve weeks.

For your hand therapist:

Education and precautions - **Progressive grip and pinch strengthening**; functional limit ~**10 lb (≈ 4.5 kg)** at around **10 weeks** - **No restriction from around 12 weeks**, subject to surgeon review

Management - Exercises: graded resistive grip and pinch (putty → grippers → task-specific loading); restore full functional hand use - Consider **discharge** once a stable, pain-free fingertip with near-normal hand function and strength is achieved - Refer back to the treating surgeon if there is pain over the fusion, concern about union, or a poor functional outcome

Criteria for discharge - United, pain-free fusion; full motion at all non-fused joints; functional pinch and grip restored

Getting back to work and activity

Light everyday use of your **other fingers and the rest of the hand** is encouraged from the start, within comfort — only the fused fingertip is held back. **Driving** usually resumes at around **six weeks**, once you are out of the bulky splint and can grip and control the wheel safely; this is at Dr Hirpara's discretion at your review, so

plan for help with transport in the early weeks. Gentle **pinch and light grip** typically begin around six weeks and build up from about eight weeks, once the bone has joined. **Full, heavy or sporting use** of the hand is generally reached by around **twelve weeks**. These timelines are **expert-consensus guidelines rather than fixed deadlines** — your surgeon's discretion and your X-ray (confirming the bone has joined) come first.

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 DIP joint arthrodesis, and your ongoing recovery is guided individually by Dr Hirpara and your hand therapist according to how your finger heals.

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