CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

EVIDENCE SUMMARY

Medial Epicondylitis (Golfer's Elbow)

Medial Epicondylitis (Golfer's Elbow) — Flexor-Pronator Tendinosis: Conservative Loading & Post-operative Rehabilitation

Topic scope: (A) the loading-based non-operative rehabilitation of medial epicondylitis — a degenerative tendinopathy of the flexor-pronator origin (chiefly flexor carpi radialis and pronator teres) at the medial epicondyle — with mandatory ulnar-nerve screening; and (B) post-operative rehabilitation after open flexor-pronator debridement (± repair, ± concurrent ulnar nerve decompression/transposition), reserved for the minority failing ≥ 6 months of quality conservative care.

> *Defining principle: medial epicondylitis is* ***not an inflammatory condition*** *but a degenerative tendinosis, so the treatment is* ***graded tendon loading, not rest.*** *The protocol mirrors lateral elbow tendinopathy but with two practice-defining differences Dr Hirpara emphasises: (1) the loaded group is the wrist* ***flexors/pronators*** *(hence the eccentric* ***"reverse Tyler twist"*** *rather than the lateral Tyler twist), and (2) the* ***ulnar nerve*** *lies immediately behind the medial epicondyle, so concomitant ulnar neuritis (~50–60% of cases) is* ***screened at every visit*** *and is the leading reason conservative care fails. Surgery is a last resort after ≥ 6 months.*

Medial epicondylitis is **far less studied than its lateral counterpart** — it is ~5–10× less common (prevalence ~0.4% vs 1.3%; ~10–20% of all epicondylitis). Most evidence is extrapolated from lateral elbow tendinopathy and from older operative case series; dedicated medial RCTs are sparse. Phase timelines below come from institutional Standard-of-Care protocols (Mass General Brigham combined medial/lateral; UVA medial debridement; Campbell's / Nirschl) plus operative series.

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

A. NON-OPERATIVE REHABILITATION (phased)

First-line; the majority resolve without surgery. Largely the SAME phased structure as the lateral elbow (Mass General Brigham publishes ONE combined medial/lateral protocol), with the loading target shifted to the flexor-pronator mass. Expected resolution **6–18 months** (self-limited).

Phase I — Acute / pain control (~0–2 weeks). Relative rest + activity modification using pain as the limiter (avoid immobilisation). Aggravators to modify: golf, throwing (esp. late-cocking / acceleration valgus load), swimming, bowling, racquet sports, weightlifting, repetitive gripping. Optional counterforce brace over the common flexor mass; wrist splint if acutely painful. Pain-control adjuncts: ice, soft-tissue / IASTM, gentle pain-free AROM, dry needling, nerve glides. **Screen the ulnar nerve** (Tinel, subluxation). *Criterion to progress:* full unloaded AROM without pain; independent home program.

Phase II — Sub-acute / early loading (~2–4 weeks). Isometric wrist-flexor and pronator loading (minimal load). Progressive stretching of the wrist flexors at 90° elbow flexion. Proximal kinetic chain: scapular stabilisers and rotator cuff — critical in throwers, where medial elbow overload is valgus-driven. *Criteria to progress:* full ROM maintained; tolerates the 90° stretch; ~70% contralateral strength.

Phase III — Late / strengthening & return (~4–6+ weeks). Eccentric and concentric loading of wrist **flexion** and forearm **pronation** — the medial analogue of the Tyler twist is a **"reverse Tyler twist"** (eccentric wrist flexion on the FlexBar). Combined eccentric-concentric loading is favoured; isometrics for early analgesia. Mobilisation-with-movement; progress stretching to the elbow-extended position. Grip strengthening, then sport-specific loading; for throwers, an interval throwing program; plyometrics last. Wean counterforce brace as asymptomatic; equipment/technique modification. *Return-to-sport criteria:* ~90% contralateral strength, pain-free function, self-management.

B. POST-OPERATIVE REHABILITATION (flexor-pronator debridement ± repair, ± ulnar nerve procedure)

Surgery is for the minority failing ≥ 6 months of conservative care. The open Nirschl-type operation debrides the pathologic flexor-pronator origin (incision posterior to the medial epicondyle to spare the medial antebrachial cutaneous nerve), with repair/reattachment commonly by suture anchor. **The ulnar nerve must be assessed and protected:** ulnar neuritis is addressed concurrently (decompression or anterior transposition) in roughly 20–50% of operative series. The phase timeline blends the UVA "Golfer's Elbow Debridement (with tendon repair)" protocol and the Verma / Midwest-Orthopaedics-at-Rush medial/lateral debridement protocol.

Phase 1 — Protect / immobilise (Weeks 0–2). Posterior long-arm splint (elbow + wrist) for 10–14 days; sling for community use. Elevation; oedema control; finger/tendon-glide AROM; unaffected-joint motion; active shoulder ROM; gentle cervical AROM. Precautions: NO lifting / pushing / pulling / forceful gripping; protect the repair.

Phase 2 — ROM restoration (Weeks 2–6). At the 2-wk visit: suture removal; transition to a **wrist orthosis in neutral** full-time (off for hygiene); Tubigrip at the elbow for swelling. Begin AROM elbow flexion/extension (2–

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

4 wk), then 4-way wrist AROM + forearm rotation, finger/thumb AROM (4–6 wk). **Ulnar nerve glides introduced ~weeks 4–6** (the explicit medial-specific addition). Scapular stabilisation (gravity-resisted). **No resistance strengthening until after 6 weeks.**

Phase 3 — Strengthening (Weeks 6–12). Wean the orthosis as tolerated (consider night use early). Progressive resistive strengthening of wrist and forearm; per Verma, **no resisted supination/pronation early**, lifting begun in supination/neutral, with **light pronated lifting from ~week 9**.

Phase 4 — Return to activity / sport (Weeks 12–16+). Progress lifting in **all forearm positions** as tolerated; full return to activity by ~12–16 weeks; sport-specific / interval throwing program for athletes. Full recovery commonly 3–6 months.

Ulnar nerve precautions: if an anterior transposition was performed, limit end-range elbow flexion early and progress nerve excursion gradually; persistent or worsening ulnar symptoms warrant surgeon review before advancing loading.

C. PHASED TIMELINE SUMMARY

Pathway	Phase	Window	Immobilisation	Loading / key actions	Criteria / milestone
Non-op	I — Pain control	0–2 wk	None (avoid casting); optional counterforce brace	Activity modification; pain-free AROM; nerve glides; **ulnar screen**	Full unloaded AROM, pain-free
Non-op	II — Early loading	2–4 wk	None	Isometric flexor/pronator load; 90° wrist-flexor stretch; scapular/cuff	~70% contralateral strength
Non-op	III — Strengthen / return	4–6+ wk	Wean brace	**Reverse Tyler twist** (eccentric); grip; sport-specific; throwers' interval program	~90% strength, pain-free → RTS
Post-op	1 — Protect	0–2 wk	Posterior long-arm splint 10–14 d + sling	Finger glides, shoulder ROM; oedema control	No resistance; repair protected
Post-op	2 — ROM restore	2–6 wk	Neutral wrist orthosis	Elbow AROM → 4-way wrist + forearm rotation; **ulnar glides wk 4–6**	No resistance until >6 wk
Post-op	3 — Strengthen	6–12 wk	Wean orthosis	Progressive resistance; supinated/neutral lifting → light pronated ~wk 9	Restored strength in safe positions

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

Pathway	Phase	Window	Immobilisation	Loading / key actions	Criteria / milestone
Post-op	4 – Return	12–16+ wk	None	Lifting all forearm positions; interval throwing	Full return ~12–16 wk; recovery 3–6 mo

D. KEY CONTROVERSIES / EVIDENCE QUALITY

1. **Sparse high-level evidence.** Almost no medial-specific RCTs; recommendations are extrapolated from lateral elbow and from retrospective operative series (Kurvers & Verhaar 1995 remains a cornerstone). Strength of evidence is materially weaker than for lateral epicondylitis.
2. **Ulnar nerve is the dominant modifier.** Concomitant ulnar neuropathy (reported 23–60%) worsens prognosis and is the leading reason conservative care fails; whether and how to address it surgically (decompression vs transposition vs medial epicondylectomy) is debated. Outcomes are reliably worse when ulnar symptoms coexist and are untreated.
3. **PRP may rival surgery for type-1 disease.** Bohlen et al (OJSM 2020) found 2 leukocyte-rich PRP injections matched surgery for recalcitrant type-1 medial epicondylitis (29/33 success each) with faster recovery (pain-free ~56 vs ~108 days; full ROM ~42 vs ~96 days) — the surgical delay partly attributed to post-op bracing. Small evidence base.
4. **Corticosteroid: short-term only.** As with the lateral elbow, steroid gives transient relief without durable benefit and risks recurrence; repeated injections show diminishing returns.
5. **Eccentric vs concentric.** Same unsettled debate as the lateral elbow; combined eccentric-concentric flexor-pronator loading is the pragmatic standard, but direct medial trial data are minimal.
6. **Surgical technique.** Open Nirschl debridement with repair is reliable in case series; arthroscopic medial debridement is emerging (claimed ulnar-nerve protection) but is technically demanding and under-evidenced. Debridement alone vs with repair remains unsettled.

E. EVIDENCE STRENGTH FLAGS (summary)

- **MODERATE (non-operative rehab):** the phased loading program — extrapolated largely from lateral elbow tendinopathy and combined medial/lateral institutional protocols; combined eccentric-concentric flexor-pronator loading is the pragmatic standard.
- **LOW–MODERATE (post-operative rehab):** phase timelines from institutional debridement protocols (UVA; Verma/Rush) and operative case series; no defining post-op rehab RCT.
- **MODERATE (PRP for type-1 disease):** single comparative study (Bohlen OJSM 2020) matching surgery with faster recovery; small sample.

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

- **CONSENSUS / EXPERT:** ulnar-nerve screening at every visit, ulnar-glide timing (wk 4–6 post-op), and the forearm-position lifting progression — drawn from surgeon-guidance protocols and operative practice rather than trial data.

CITATIONS

RAG CORPUS (180,000+ ORTHOPAEDIC ARTICLES)

- Kurvers H, Verhaar J. The results of operative treatment of medial epicondylitis. *J Bone Joint Surg Am*. 1995. (ulnar neuritis coexistence 23–50%)
- Bohlen HL, et al. Platelet-rich plasma is an equal alternative to surgery in the treatment of type 1 medial epicondylitis. *Orthop J Sports Med*. 2020. DOI: 10.1177/2325967120908952
- Platelet-rich plasma versus Tenex in the treatment of medial and lateral epicondylitis. *J Shoulder Elbow Surg*. 2019.
- Ellenbecker TS, Nirschl R, Renstrom P. Current concepts in examination and treatment of elbow tendon injury. *Sports Health*. 2012.
- Rehabilitation of the thrower's elbow. *Clin Sports Med*. 2004.
- Nirschl surgical technique for concomitant lateral and medial elbow tendinosis. *Am J Sports Med*. 2011.
- Imaging of the elbow in the overhead throwing athlete. *Am J Sports Med*. 2003. (ulnar neuritis in ~60% of throwers with medial epicondylitis)
- Outcome of partial medial epicondylectomy for cubital tunnel syndrome. *Clin Orthop Relat Res*. 2006.
- Coonrad RW, Hooper WR. Tennis elbow: its course, natural history, conservative and surgical management (includes medial). *J Bone Joint Surg Am*. 1973.
- Green's Operative Hand Surgery. 2021. (medial vs lateral prevalence; combined treatment chapter; Nirschl technique)
- Campbell's Operative Orthopaedics. 2020. (Box 46.3 Rehabilitation Protocol for Epicondylitis [Wilk/Arrigo/Andrews]; Nirschl medial technique, posterior incision sparing the MABC nerve)

PUBLISHED PROTOCOLS (URLS)

- University of Virginia Orthopaedics — Medial Epicondyle (Golfer's Elbow) Debridement (with tendon repair), Rehabilitation Guidelines. https://med.virginia.edu/orthopaedic-surgery/wp-content/uploads/sites/242/2024/09/Medial-Epicondyle-Golfers-Elbow-Debridement-with-tendon-repair.pdf
- Midwest Orthopaedics at Rush (Nikhil Verma, MD) — Post-Operative Rehabilitation Guidelines for Medial/Lateral Epicondyle Debridement. https://www.sportssurgerychicago.com/patient-resources/rehab-manuals/mediallateral-epicondyle-debridement/

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

- Mass General Brigham Sports Medicine – Rehabilitation Protocol for Medial/Lateral Epicondylalgia (non-operative), rev. April 2021. https://www.massgeneral.org/assets/MGH/pdf/orthopaedics/sports-medicine/physical-therapy/rehabilitation-protocol-for-medial-lateral-epicondylitis.pdf

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