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SPECIALIST ORTHOPAEDIC SURGEON

EVIDENCE SUMMARY

de Quervain's Release

de Quervain's Release — Procedure Outcomes & Post-operative Rehabilitation (First Dorsal Compartment Release)

Topic scope: post-operative rehabilitation after **surgical release of the first dorsal compartment** of the wrist (abductor pollicis longus, APL, and extensor pollicis brevis, EPB) for **refractory de Quervain's tenosynovitis**. This is a *decompression*, not a reconstruction: the fibro-osseous tunnel is opened and is **meant to stay open**, so the rehabilitation is an **early-motion** pathway built around tendon gliding, oedema and scar control, and protection of the overlying radial sensory nerve — rather than months of protected healing.

> *Defining principle of the rehab here: de Quervain's release relieves a tendon entrapment and does not create a construct that needs protection. The divided extensor retinaculum is meant to stay divided. So (unlike a tendon or ligament repair) immediate, gentle active thumb and wrist motion is the default, and the only deliberate restraints are brief comfort support and a short window of heavy-grip/pinch/twist avoidance while the wound heals. The therapy programme exists to keep the APL/EPB tendons gliding through the healing surgical bed so they do not adhere, to settle the radial sensory nerve branches that cross the incision, and to rebuild grip and pinch — not to immobilise. The single branch points are (1) whether a separate EPB sub-sheath/septum was present and released (its retention is a classic cause of failed release) and (2) keeping the release dorsal so the tendons do not subluxate volarly.*

A. PROCEDURE OUTCOMES (open release; endoscopic and retinaculum-sparing variants)

Surgical release of the first dorsal compartment is a reliable operation for de Quervain's that has failed non-operative care: the great majority of patients obtain durable symptom relief, and the principal debates are over

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technique details (incision orientation, completeness of EPB sub-sheath release, whether to preserve/lengthen the retinaculum) rather than whether to decompress.

- **Open release gives durable, high-quality long-term outcomes.** A series of 80 cases with a **mean 9.5-year follow-up** reported sustained relief with a low complication profile, establishing the long-term reliability of open release [Garçon et al., *Orthop Traumatol Surg Res* 2018]. *Moderate (long-term cohort).*
- **Functional recovery is good and objectively measurable.** A series using **DASH scores** to evaluate first-extensor-compartment release for refractory disease documented good functional outcomes, and emphasised identifying and releasing a separate **EPB sub-compartment (septum)** when present [Lee et al., *Clin Orthop Surg* 2014]. DASH is a validated, widely used outcome instrument across hand and wrist conditions [Baltzer, Novak & McCabe, *J Hand Surg Am* 2014 — scoping review]. *Moderate (cohort) + instrument SR.*
- **Endoscopic and open release are broadly comparable.** A comparative study of **endoscopic versus open** release found favourable results for the endoscopic approach with attention to the radial sensory nerve, while open release remains the standard reference technique [Kang et al., *Bone Joint J* 2013]. *Moderate (comparative).*
- **The retinaculum can be partly resected, simply divided, or reconstructed.** Partial resection of the extensor retinaculum gives good short-term results [Altay et al., *Orthop Traumatol Surg Res* 2011]; **simple release and Z-plasty (retinaculum-lengthening) reconstruction give comparable outcomes**, with Z-plasty proposed to reduce subluxation risk at the cost of complexity [Kim, Baek & Lee, *J Hand Surg Eur* 2019]. A longitudinal-incision technique series likewise reports good functional outcomes [Mangukiya et al., *Musculoskelet Surg* 2019]. *Moderate (comparative/cohort).*
- **Dissatisfaction does occur and is worth counselling for.** A focused study of **dissatisfaction after first dorsal compartment release** found that a minority of patients remain dissatisfied, often linked to residual pain, nerve symptoms or incomplete relief — a reminder that outcomes are good but not universal [Rogozinski & Lourie, *J Hand Surg Am* 2016]. *Moderate (cohort).*

B. REHABILITATION / THERAPY EVIDENCE

The central rehab questions are (1) whether to immobilise the thumb/wrist afterwards and for how long, and (2) whether formal hand therapy changes the outcome. The published base specific to *post-de-Quervain-release* rehabilitation is **thin and consensus-driven**: there are no high-quality trials comparing immobilisation regimens or therapy protocols. Practice converges on **brief comfort support and early motion**, with hand therapy used selectively.

- **Early motion is the rationalised default; prolonged immobilisation is not supported.** Because the release is a decompression with no construct to protect, early active thumb and wrist motion is used to keep the APL/EPB tendons gliding and prevent adhesion. Immobilisation, where used, is a soft dressing or short thumb spica **for comfort only** for days to ~1–2 weeks. The supporting evidence is **mechanistic/consensus**, mirroring the well-established early-motion rationale after other upper-limb decompressions. *Weak–moderate (mechanism strong, outcome data sparse).*

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- **De Quervain's is not always an isolated problem — therapy assessment matters.** A hand-therapy review highlights that de Quervain's syndrome may coexist with other dorsoradial/wrist pathology, so post-operative therapy should reassess rather than assume a single diagnosis — relevant when symptoms persist after release [Redvers-Chubb, *Hand Therapy* 2015]. *Consensus (narrative/therapy review).*
- **Hand therapy focus is glide, scar and nerve, then strength.** The programme priorities are tendon gliding (adhesion prevention), oedema control, **scar management and radial sensory nerve desensitisation**, and graded grip/pinch strengthening. The benefit of formal supervised therapy over a home programme is **not established by trial data**; selective therapy is defensible. *Weak / consensus.*

RECOVERY TRAJECTORY (EXPECTED, EVIDENCE-ANCHORED)

Phase	Window	Restraint	Hand use / therapy focus	Strength / load	Notes
I — Early motion, oedema & wound care	**Week 0–~2**	Comfort support only (soft dressing ± short thumb spica)	Immediate active thumb + wrist motion; **APL/EPB tendon glides**; elevation/ oedema control; screen radial sensory nerve + subluxation	Light functional use only	No construct to protect; motion *is* the treatment. Keep wound clean/dry
II — Restore motion & scar/ nerve care	**Week ~2–4**	Splint discarded once healed	Full thumb + wrist ROM; **scar massage once wound healed**; radial sensory nerve glides/desensitisation if irritable	Begin light grip/ pinch (putty, ball) from ~3–4 wk	Avoid forceful grip/pinch/ twist until ~3–4 wk
III — Strengthening & return	**Week ~4–6+**	Restrictions lifted, graded	Progressive grip/pinch and task-specific loading	Return to near-symmetrical grip/pinch; full activity as strength allows	Light/desk work days–1–2 wk; manual work ~4–6 wk, criterion-based

(Phase windows are typical clinical guides, not trial-derived deadlines. Driving resumes once the wound is comfortable, any comfort splint is off, and the patient can grip and steer confidently — commonly within 1–2 weeks.)

C. KEY CONTROVERSIES / EVIDENCE QUALITY

1. **The EPB sub-sheath (septum) must be sought and released.** A separate EPB sub-compartment is common and, if missed, is a classic cause of **persistent symptoms / failed release**. Series that emphasise identifying and releasing it report good outcomes [Lee 2014]. *Moderate — strong mechanistic consensus.*

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2. **Volar tendon subluxation if released too volar.** Dividing the retinaculum too far towards the palmar side can let the APL/EPB tendons subluxate volarly with thumb motion. Keeping the release **dorsal**, and retinaculum-lengthening (Z-plasty) reconstructions, are described specifically to mitigate this [Kim 2019; Altay 2011]. *Moderate (technique-comparative).*
3. **Radial sensory nerve injury is the signature complication.** The superficial radial nerve branches cross the operative field; injury or scar entrapment produces dorsoradial numbness, hypersensitivity or painful neuroma and is a leading driver of dissatisfaction [Ilyas et al., *J Am Acad Orthop Surg* 2007; Rogozinski 2016]. Careful exposure with nerve protection is emphasised across open and endoscopic techniques [Kang 2013]. *Moderate.*
4. **Immobilise or move early?** No trial settles the optimal post-operative regimen; consensus favours brief comfort support and early motion (decompression logic) over prolonged splinting. *Weak – consensus, not trial-derived.*
5. **Outcomes are good but not universal.** A measurable minority remain dissatisfied, usually from residual pain, nerve symptoms or incomplete release – worth explicit pre-operative counselling [Rogozinski 2016]. *Moderate.*

D. EVIDENCE STRENGTH FLAGS (summary)

- **MODERATE (cohort / comparative):** durable long-term relief from open release (9.5-yr cohort); good DASH-measured functional outcomes; comparability of endoscopic vs open and of simple release vs Z-plasty / partial retinaculum resection; radial sensory nerve injury as the signature complication; a real, defined dissatisfaction rate.
- **WEAK / CONSENSUS:** the **early-motion, glide-based rehabilitation programme** itself (mechanistically rationalised; no trial comparing immobilisation regimens or therapy protocols after de Quervain's release); the role of formal supervised therapy vs a home programme; exact phase timings and return-to-activity windows (typical guides, not trial-derived). **Outcomes and the two signature complications (radial sensory nerve injury; volar subluxation) are better studied than the rehabilitation protocol.**

CITATIONS

RAG CORPUS (180,000+ ORTHOPAEDIC ARTICLES)

- Garçon JJ, Charruau B, Marteau E, et al. Results of surgical treatment of De Quervain's tenosynovitis: 80 cases with a mean follow-up of 9.5 years. *Orthop Traumatol Surg Res*. 2018. DOI: 10.1016/j.otsr.2018.04.022 (PMID 29909297)

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- Baltzer H, Novak CB, McCabe SJ. A Scoping Review of Disabilities of the Arm, Shoulder, and Hand Scores for Hand and Wrist Conditions. *J Hand Surg Am*. 2014. DOI: 10.1016/j.jhsa.2014.07.050 (PMID 25227601)
- Redvers-Chubb K. De Quervain's syndrome: It may not be an isolated pathology. *Hand Therapy*. 2015. DOI: 10.1177/1758998315599796

DE QUERVAIN'S RELEASE LITERATURE (URLS)

- Lee HJ, et al. Surgical Release of the First Extensor Compartment for Refractory de Quervain's Tenosynovitis (DASH outcomes; EPB septum). *Clin Orthop Surg* 2014 (open access). https://doi.org/10.4055/cios.2014.6.4.405
- Garçon JJ, et al. Results of surgical treatment of De Quervain's tenosynovitis: 80 cases, mean 9.5-year follow-up. *Orthop Traumatol Surg Res* 2018. https://doi.org/10.1016/j.otsr.2018.04.022
- Ilyas AM, et al. de Quervain Tenosynovitis of the Wrist (review – radial sensory nerve, surgical technique, complications). *J Am Acad Orthop Surg* 2007. https://doi.org/10.5435/00124635-200712000-00009
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