

# Wrist Ganglion Excision

## Wrist Ganglion Excision – Procedure Outcomes & Post-operative Rehabilitation (Dorsal / Volar, Open or Arthroscopic)

**Topic scope:** post-operative rehabilitation after **surgical excision of a wrist ganglion** – removal of the cyst together with its capsular **stalk** down to the wrist joint, performed **open** or **arthroscopically**, for a **dorsal** (scapholunate-origin) or **volar** (radiocarpal/scaphotrapezial) ganglion. This is an *excision*, not a reconstruction: nothing is repaired or tightened, so the rehab is an **early-motion** pathway built around minimal immobilisation, prompt wrist movement in all planes, and scar care – not months of protected healing.

*Defining principle of the rehab here: ganglion excision removes a cyst and its stalk; it does not create a construct that needs protecting. The most frequent adverse outcome is therefore not failure of any repair but wrist stiffness / loss of motion, which prolonged immobilisation makes worse. So the deliberate stance is minimal immobilisation (soft dressing ± brief comfort splint, ≤ 2 weeks) followed by early active wrist motion in every plane, with the only restraint a short window of heavy-grip/load avoidance while the soft tissues settle. The principal branch points are (1) dorsal vs volar (volar ganglia sit adjacent to the radial artery and carry a higher neurovascular-complication profile) and (2) open vs arthroscopic access (similar recurrence; arthroscopic may have a gentler early course). Importantly, the recurrence and outcome literature is far better developed than the rehabilitation literature, which is largely expert-consensus and low-level.*

## A. PROCEDURE OUTCOMES (open vs arthroscopic; dorsal vs volar)

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Ganglion excision is a reliable, low-morbidity operation. The principal outcome debate is over **recurrence** and over **access** (open vs arthroscopic), not over whether excision works.

- **Excision markedly out-performs aspiration for durable cure.** Pooled across treatments, mean recurrence is roughly **6% arthroscopic, ~20–21% open, ~59% aspiration**; surgical excision confers a large reduction in recurrence versus aspiration. Reported open-excision recurrence is wide (0–31%), the lowest classic series (Angelides & Wallace) reporting <1% with meticulous stalk excision [Zoller 2023 JAAOS review; Gant 2011 review]. *Moderate (reviews of heterogeneous series).*
- **Removing the stalk down to the capsule is the key technical determinant of recurrence.** Leaving the capsular stalk behind is the main reason a ganglion recurs; stalk resection is repeatedly advocated as the critical step [Gant 2011; Rizzo 2004]. *Mechanistic / consensus.*
- **Open and arthroscopic excision give similar recurrence.** A retrospective comparison and a systematic review found **no significant difference** once low-quality/high-bias studies are excluded (pooled ~8% arthroscopic vs ~10% open); a prospective randomised dorsal-ganglion trial (Kang) reported 11% vs 9%. Arthroscopic access may offer a cosmetic/early-recovery edge but is not proven superior for recurrence [Konigsberg 2023 HAND; Crawford 2018 SR; Gant 2011 citing Kang]. *Moderate (SR + retrospective + one RCT).*
- **Wrist stiffness is the most common complication after carpal ganglion excision**, ahead of recurrence; other risks are infection, scar problems, neurovascular injury and (rarely) injury to the scapholunate ligament [Gant 2011]. *Moderate (review).*
- **Volar ganglia carry a distinct neurovascular risk.** They are adherent to / immediately adjacent to the **radial artery**; radial-artery injury during volar excision is described as “quite common,” and an MRI-based study identifies anatomical position as a risk factor for operation-related complications after arthroscopic volar ganglionectomy [Rocchi 2008; Oh 2025 BMC; operative-technique texts]. *Moderate (cohort + anatomical).*

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## B. REHABILITATION / THERAPY EVIDENCE

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The central rehab questions are (1) should the wrist be immobilised afterwards, and (2) does a particular therapy regimen change the outcome. The best available evidence – a systematic review of post-excision immobilisation – answers that **brief or no immobilisation is appropriate**, with early motion the means of preventing the dominant complication (stiffness). There is **no high-level trial evidence** for any specific exercise protocol; rehab content is consensus.

- **Limited or no immobilisation does not worsen outcome – and protects against stiffness.** A systematic review and surgeon survey of dorsal ganglion excision found practice split roughly evenly between rigid splinting and soft dressings; immobilisation durations ranged from **48 hours to 2 weeks (open)** and **5**

**days to 3 weeks (arthroscopic).** The explicit conclusion: **“limited immobilization of 2 weeks or less or no immobilization after surgery does not meaningfully affect patient outcome.”** Prolonged rigid immobilisation is the avoidable driver of stiffness (one 2-week bulky-dressing series reported **11.5% with  $\geq 20^\circ$  ROM loss**, versus normal ROM in 100% of a short-immobilisation series) [Wong 2023 HAND SR]. *Moderate (systematic review of low-level studies).*

- **Early active wrist motion in all planes is the core of the programme.** Because there is no repair to protect and stiffness is the commonest problem, the consensus is to move the wrist early through flexion/extension and radial/ulnar deviation, with full finger and forearm motion from day one. The *adhesion/stiffness-prevention* rationale is mechanistic and consensus rather than trial-proven. *Weak-moderate (mechanism strong, outcome data absent).*
- **Recovery is usually quick and time off work short.** Series report on the order of **~2 weeks off work** after open wrist ganglion excision (longer for volar than dorsal, and longer than aspiration), with most patients back to ordinary activity by ~4–6 weeks [Suen 2013 citing Dias 2007]. *Moderate (cohort).*
- **Recurrent ganglia are re-excisable with good function**, and physical therapy is routinely recommended in re-excision series – underlining that therapy here is supportive (motion + scar), not a construct-protecting protocol [re-excision outcome series]. *Low (small series).*

### RECOVERY TRAJECTORY (EXPECTED, EVIDENCE-ANCHORED)

Phase	Window	Restraint	Hand use / therapy focus	Strength / load	Notes
<b>I – Minimal immobilisation &amp; early motion</b>	<b>Days 0–~14</b>	Soft dressing ± comfort splint only ( $\leq 2$ wk)	Full finger/thumb/elbow ROM from day 1; <b>active wrist ROM in all planes within the first few days</b> ; forearm rotation; elevation for oedema	Light functional use only	Brief or no immobilisation does not worsen outcome; prolonged rest → stiffness
<b>II – Restore full motion &amp; scar care</b>	<b>Week ~2–4</b>	None routine (splint weaned)	Drive to <b>full wrist ROM</b> ; <b>scar massage once wound healed</b> ; desensitisation	Light grip/putty toward end	Stiffness is the complication to pre-empt; address early ROM loss promptly
<b>III – Strengthening &amp; return</b>	<b>Week ~4–6+</b>	Restrictions lifted	Progress grip/pinch + wrist strengthening; task-specific loading	Graded grip and load to symmetry	Most back to ordinary activity ~4–6 wk; manual/volar cases a little longer

*(Phase windows mirror the precautions in the patient protocol; they are typical guides, not trial-derived deadlines.)*

## C. KEY CONTROVERSIES / EVIDENCE QUALITY

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1. **To splint or not.** Practice is genuinely split, but the systematic-review evidence is that limited ( $\leq 2$  weeks) or no immobilisation does not change outcome – and that prolonged rigid immobilisation is the avoidable cause of stiffness. This page's brief-immobilisation, early-motion default reflects that finding. *Moderate (SR of low-level data).*
2. **Open vs arthroscopic.** Similar recurrence once bias is accounted for; arthroscopic may give a cosmetic/early-recovery edge. Choice is largely surgeon/patient preference. *Moderate.*
3. **What drives recurrence.** Incomplete **stalk** excision, not rehab, is the main recurrence determinant; no mobilisation regimen has been shown to affect recurrence. *Consensus / mechanistic.*
4. **Stiffness is the real enemy, not the cyst coming back.** Wrist stiffness is the commonest complication; framing recovery around early motion (rather than protective rest) is the evidence-aligned stance. *Moderate.*
5. **Volar ganglia are different.** Radial-artery proximity raises the neurovascular-complication profile of volar excision; this is an operative/anatomical caution rather than a rehab variable, but it shapes early monitoring. *Moderate.*
6. **Rehab evidence is thin.** Recurrence and procedure outcomes are well studied; the *specific* exercise programme is expert-consensus with no controlled trials. The defensible position is a simple early-motion + scar home programme with selective hand therapy. *Weak / consensus.*

## D. EVIDENCE STRENGTH FLAGS (summary)

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- **STRONG (RCT / SR):** none specific to rehab. (Procedure-side: superiority of excision over aspiration for recurrence is robust across reviews.)
- **MODERATE:** systematic-review evidence that  $\leq 2$ -week or no immobilisation does not worsen outcome (Wong 2023); similar recurrence open vs arthroscopic (Crawford SR, Konigsberg, Kang RCT); stiffness as the commonest complication; volar radial-artery risk; short time off work.
- **WEAK / CONSENSUS:** the specific **early-motion, all-plane wrist ROM + scar** therapy programme (mechanistically rationalised – stiffness prevention – with no controlled outcome trials); exact phase timings (typical, not trial-derived).

## CITATIONS

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