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SPECIALIST ORTHOPAEDIC SURGEON

EVIDENCE SUMMARY

Suprascapular Nerve Decompression

Suprascapular Nerve Decompression – Post-operative Rehabilitation (Arthroscopic Release)

Topic scope: Post-operative rehabilitation after an **isolated arthroscopic suprascapular nerve decompression / release** – release of the nerve at the **suprascapular notch** (division of the transverse/superior scapular ligament) and/or the **spinoglenoid notch**, performed for nerve entrapment, often with excision of an associated **paralabral / spinoglenoid ganglion cyst**. This page covers the *isolated* decompression only; when the procedure is combined with a rotator cuff repair the slower, protected **rotator-cuff-repair** pathway takes precedence.

> *Defining principle of the rehab here: decompression relieves pressure on a nerve and creates no construct that needs months of protection – there is no tendon repair or capsular reconstruction to safeguard. So (like a debridement/decompression, and unlike a cuff repair or labral repair) this is an early-movement pathway: a short sling for comfort only (about the first week, two at most), early range of motion as comfort allows, and return to daily activities within a few weeks. The crucial separate timeline is the nerve itself: the compression pain often settles relatively quickly, but recovery of strength and bulk in the muscles the nerve supplies (supraspinatus and infraspinatus) is paced over weeks to months and is frequently only partial – functional recovery follows the nerve, not the calendar. The single branch point is whether a rotator cuff repair was also performed – if so, the recovery converts to the protected rotator-cuff-repair pathway.*

The procedure

The suprascapular nerve can be entrapped at two fibro-osseous tunnels as it crosses the scapula: the **suprascapular notch** (under the superior transverse scapular ligament – entrapment here affects both supraspinatus and infraspinatus) and the **spinoglenoid notch** (under the spinoglenoid ligament – entrapment here is more selective for the infraspinatus). A **paralabral ganglion cyst**, often arising from a posterosuperior labral tear, is a common space-occupying cause at the spinoglenoid notch.

Arthroscopic decompression releases the offending ligament (and decompresses/excises any cyst); where the cyst arises from a labral tear, the labral source may be addressed at the same sitting. Because the operation removes a *compressive* lesion rather than creating a repair, there is no healing construct that dictates a protected immobilisation period — the rehab is governed by comfort and by the nerve's own recovery.

Evidence by theme

PAIN RELIEF IS THE MOST RELIABLE BENEFIT

Across cohorts and a systematic review, decompression gives **good pain relief and functional improvement** in the majority. In a retrospective series of **112 arthroscopic decompressions**, VAS pain fell from a mean of **6.5 to 2.9** ($p < 0.0001$) at a mean follow-up of ~9 months, with **no neurovascular injuries, infections or fractures** [112-patient series, PMC6994808]. A 2018 systematic review of decompression outcomes reported broad improvements in patient-reported scores and high rates of return to sport/duty [systematic review, *JSES* 2018, DOI 10.1016/j.jse.2017.09.025]. A volleyball-player cohort and a spinoglenoid-notch technique series likewise report reliable return of arm function [Brzoska 2023; Plancher 2021]. *Moderate (cohorts + SR of level III–IV studies).*

STRENGTH RECOVERY FOLLOWS THE NERVE — SLOWER, AND OFTEN INCOMPLETE

This is the key counselling point. The **same 112-patient series** showed measurable strength gains (supraspinatus 3.3 → 4.9; infraspinatus 3.3 → 4.8 on the 0–5 scale) but over months, not weeks [PMC6994808]. A **systematic review of motor recovery** after notch decompression found that **full strength was NOT regained in the majority (~60%) of reported cases**, and that established **fatty (structural) muscle degeneration generally did not reverse** — "patients should be informed about this" [motor-recovery SR, PubMed 32392599]. Open spinoglenoid-notch series report better external- rotation strength figures (e.g. ~66% regaining full ER strength) for cyst-related entrapment, where the lesion is discrete and recovery potential higher [open decompression, PubMed 23664748]. **Earlier diagnosis and decompression, and a discrete compressive cause (cyst) rather than chronic idiopathic entrapment, predict more complete muscular recovery.** *Moderate–weak; consistent direction across studies.*

GANGLION-CYST VS IDIOPATHIC ENTRAPMENT

Cyst-related entrapment (a removable, space-occupying cause) tends to do well — decompression removes the cause and electrodiagnostic recovery of the nerve has been documented post- decompression [Feinberg 2019, Muscle Nerve]. Chronic *idiopathic* entrapment, longstanding denervation, and established fatty infiltration carry a more guarded prognosis for strength return. This distinction underlies the variable, partly-incomplete recovery seen in the pooled literature. *Weak (case series / mechanistic).*

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THE REHABILITATION PROTOCOL ITSELF IS CONSENSUS/EXPERT

The phased post-op programme below is drawn from published **technique papers and patient-guidance protocols**, not from a rehabilitation RCT — there is no trial defining the optimal post- decompression regimen. Phase timings are typical, not trial-derived. *Weak/consensus.*

Phased post-op timeline (isolated decompression — no cuff repair)

Phase	Window	Sling	ROM / use	Strengthening	Notes
I – Early movement	**Week 0–2**	Comfort only, ~first week (up to 2 wk), off ASAP; not worn to sleep	Early gentle ROM as comfort allows – pendulums, passive/active-assisted elevation, ER/IR, elbow flexion/extension; keep hand/wrist/elbow moving from day 1	Isometric deltoid + scapular setting as comfortable	Settle post-op flare; no driving while in sling; no heavy lifting/forceful push-pull
II – Range & muscle reactivation	**Week 2–6**	Off	Progress to full active ROM in all planes	Light strengthening from ~wk 2 (isometric → band), low-load/high-rep cuff, deltoid, scapular stabilisers; particular attention to pain-free ER and to **reactivating supraspinatus/ infraspinatus** as the nerve recovers	Most return to normal daily activities (~wk 4); progress guided by comfort, not calendar
III – Strengthening / return	**Week 6–12 and beyond**	Off	Full ROM maintained	Full strengthening without restriction from ~wk 6; **isolated supraspinatus/ infraspinatus** strengthening advanced from ~wk 12; staged	Strength + muscle bulk may keep recovering **over several months and may be only partial** – pace

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Phase	Window	Sling	ROM / use	Strengthening	Notes
				return to overhead work and sport	expectations to the nerve

Branch point — if a rotator cuff repair was also performed: recovery converts to the protected **rotator-cuff-repair** pathway (sling ~6 weeks, ROM restrictions, strengthening deferred). The surgeon confirms which pathway applies.

Key controversies / evidence quality

1. **Strength recovery is the honest weak point.** Decompression reliably relieves pain but does **not** reliably restore full strength — a systematic review found ~60% of cases fell short of full strength recovery, and fatty muscle degeneration generally did not reverse [PubMed 32392599]. This is the single most important thing to counsel before surgery. *Moderate (SR of level III–IV).*
2. **Evidence is small cohorts and case series.** The largest single series is ~112 patients; most are < 30; the systematic reviews pool level III–IV studies. There is **no RCT** for isolated decompression rehab, and no rehab trial at all. *Weak overall evidence base — stated honestly.*
3. **Indication / patient selection.** When to decompress (especially for asymptomatic or mildly symptomatic cysts, or chronic idiopathic entrapment with established atrophy) remains debated — reflected in editorial commentary in the corpus ("should you have the nerve to do it?", *Arthroscopy* 2021, DOI 10.1016/j.arthro.2020.12.192). *Consensus/expert.*
4. **The rehab protocol is consensus**, drawn from technique papers and surgeon patient-guidance documents rather than a rehab trial — phase timings are typical, not trial-derived.

Evidence-strength flags (summary)

- **MODERATE (cohorts + SR):** decompression relieves pain and improves function in the majority (112-patient series VAS 6.5→2.9; 2018 *JSES* SR; volleyball-player cohort).
- **MODERATE–WEAK (SR of level III–IV):** strength recovery is **slower and often incomplete** (~60% short of full strength; fatty degeneration usually does not reverse — motor-recovery SR).
- **WEAK (case series / mechanistic):** cyst-related entrapment outperforms chronic idiopathic entrapment; earlier decompression predicts fuller recovery; documented electrodiagnostic nerve recovery post-release.
- **WEAK / CONSENSUS:** the **post-operative rehabilitation protocol** itself (technique papers + surgeon patient-guidance; no defining rehab RCT).

Citations

RAG CORPUS (180,000+ ORTHOPAEDIC ARTICLES)

- Clinical outcomes of suprascapular nerve decompression. *J Shoulder Elbow Surg*. 2011. DOI: 10.1016/j.jse.2010.10.032
- Clinical outcomes of suprascapular nerve decompression: a systematic review. *J Shoulder Elbow Surg*. 2018. DOI: 10.1016/j.jse.2017.09.025
- Arthroscopic Decompression of the Suprascapular Nerve at the Spinoglenoid Notch and Suprascapular Notch Through the Subacromial Space. *Arthroscopy*. 2009. DOI: 10.1016/j.arthro.2008.10.024
- Arthroscopic suprascapular nerve decompression: indications and surgical technique. *J Shoulder Elbow Surg*. 2010. DOI: 10.1016/j.jse.2010.01.006
- Suprascapular neuropathy: what does the literature show? *J Shoulder Elbow Surg*. 2012. DOI: 10.1016/j.jse.2011.11.033
- The Evaluation and Management of Suprascapular Neuropathy. *J Am Acad Orthop Surg*. 2020. DOI: 10.5435/jaaos-d-19-00526
- Suprascapular Neuropathy. *J Bone Joint Surg Am*. 2010. DOI: 10.2106/jbjs.i.01743
- Outcomes of Arthroscopic Nerve Release in Patients Treated for Large or Massive Rotator Cuff Tears and Associated Suprascapular Neuropathy: A Prospective, Randomized, Double-Blinded Clinical Trial. *Am J Sports Med*. 2021. DOI: 10.1177/03635465211021834
- Editorial Commentary: Suprascapular Nerve Decompression Can Be Effective, But Should You Have the Nerve to Do It? *Arthroscopy*. 2021. DOI: 10.1016/j.arthro.2020.12.192
- Complete Fatty Infiltration of Intact Rotator Cuffs Caused by Suprascapular Neuropathy. *Arthroscopy*. 2014. DOI: 10.1016/j.arthro.2014.01.010

LITERATURE (URLS)

- A retrospective review of 112 patients undergoing arthroscopic suprascapular nerve decompression (VAS 6.5→2.9; supraspinatus/infraspinatus strength gains; no neurovascular/infective/fracture complications). PMC. https://pmc.ncbi.nlm.nih.gov/articles/PMC6994808/
- Motor Recovery of the Suprascapular Nerve after Arthroscopic Decompression in the Scapular Notch – a Systematic Review (~60% do not regain full strength; fatty degeneration generally not reversed). PubMed. https://pubmed.ncbi.nlm.nih.gov/32392599/
- Suprascapular nerve entrapment isolated to the spinoglenoid notch: surgical technique and results of open decompression (~66% regained full ER strength). PubMed. https://pubmed.ncbi.nlm.nih.gov/23664748/
- Arthroscopic release of suprascapular nerve entrapment at the suprascapular notch: technique and preliminary results. PubMed. https://pubmed.ncbi.nlm.nih.gov/17210425/
- Compression of the suprascapular nerve by a ganglion cyst of the spinoglenoid notch: the arthroscopic solution. PubMed. https://pubmed.ncbi.nlm.nih.gov/14595536/

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PUBLISHED PROTOCOLS / TECHNIQUE PAPERS (BASIS FOR THE PHASE STRUCTURE)

- Plancher KD, Evely TB, Brite JE, Briggs KK, Petterson SC. Endoscopic/arthroscopic decompression of the suprascapular nerve at the spinoglenoid notch: indications and surgical technique. *JSES Rev Rep Tech*. 2021;1(3):198-206. https://www.sciencedirect.com/science/article/pii/S2666639121000250
- Harkin WE, Kerzner B, Scanaliato J, et al. Open Suprascapular Nerve Decompression at the Spinoglenoid Notch. *Arthrosc Tech*. 2024;13(9):103051. https://pmc.ncbi.nlm.nih.gov/articles/PMC11411363/
- Brzoska R, Laprus H, Klaptocz P, et al. Arm Function After Arthroscopic Decompression of the Suprascapular Nerve at the Spinoglenoid Notch and Suprascapular Notch in Volleyball Players. *Orthop J Sports Med*. 2023;11(2):23259671221147892. https://pmc.ncbi.nlm.nih.gov/articles/PMC9974621/
- Feinberg JH, Mehta P, Gulotta LV, et al. Electrodiagnostic evidence of suprascapular nerve recovery after decompression. *Muscle Nerve*. 2019;59(2):247-249. https://pubmed.ncbi.nlm.nih.gov/30291636/

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