Distal Biceps Repair & Reconstruction — Rehabilitation Protocol

Overview

- Applies to: surgical repair or reconstruction of distal biceps tendon rupture
- Fixation: cortical button, interference screw, or augmented construct — confirm with surgeon
- Sling for comfort only — early active ROM is safe and supported by Level I evidence
- Key precaution: avoid resisted elbow flexion and forearm supination loads until Week 8

Rehabilitation Phases

Phase 1 — Acute Recovery	Weeks 0–3
Goals: • Control pain and swelling • Initiate early active elbow and forearm ROM • Maintain wrist and hand function	**Exercises & Interventions:** • Sling for comfort only — wean as tolerated from Day 1 • Active elbow flexion/extension AROM immediately (unweighted forearm) • Forearm pronation/supination AROM within comfort • Wrist and finger AROM immediately • Passive elbow extension stretching (gentle, gravity-assisted) • Cryotherapy 20 min 4–5×/day; elevation and compression • Shoulder AROM (elevation, ER, scapular exercises)
Precautions: ■ No resisted elbow flexion or active biceps loading ■ No resisted forearm supination ■ No lifting, carrying or pushing	

Phase 2 — Progressive Motion	Weeks 3–8
Goals: • Full elbow ROM: 0–145° by Week 6 • Full forearm pronation/supination • Scapular and shoulder strength foundation	**Exercises & Interventions:** • Continue active elbow and forearm ROM to full range • Submaximal isometric elbow flexion (neutral, pain-free) from Week 4 • Triceps isometrics (forearm on table, palm down, press into surface) • Scapular retraction/depression — theraband rows, prone Y/T/W • Shoulder rotator cuff strengthening (side-lying ER, prone extension) • Grip strengthening (putty) from Week 4; aquatic therapy from Week 6
Precautions: ■ No active biceps loading against resistance before Week 8 ■ No forearm supination against load; pain >3/10 = reduce load	

Rehabilitation Phases (continued)

Phase 3 — Progressive Strengthening	Weeks 8–16
Goals: • Full elbow ROM and forearm rotation • Progressive biceps and forearm strengthening • Functional upper limb use	**Exercises & Interventions:** • Isotonic biceps curls: begin 0.5–1 kg Week 8, progress weekly • Hammer curls (neutral) and reverse curls (pronated) • Resisted forearm supination — progressive theraband loading • Wrist flexion/extension and grip/pinch strengthening • Closed kinetic chain (wall push-ups, table weight-bearing) • Biceps eccentric loading from Week 12 (controlled lowering) • ADL reintegration — cooking, driving, light manual tasks
Precautions: ■ No heavy loading (>3 kg) before Week 12 ■ Avoid sudden eccentric loads before Week 14	

Phase 4 — Return to Function	Weeks 16–26
Goals: • Full strength and ROM • Work and sport-specific reintegration • Tendon load tolerance and endurance	**Exercises & Interventions:** • Progressive resistance curls — increase load and volume incrementally • Heavy slow resistance (HSR) biceps protocol: 3×8–12 reps, 3×/week • Plyometric upper extremity drills (medicine ball, wall tosses) • Sport-specific reintegration (throwing, racquet — from 5 months) • Return to heavy resistance training and manual work: minimum 5–6 months
Precautions: ■ Full return to heavy labour or contact sport: minimum 6 months, surgeon-directed ■ Re-rupture signs: sudden pain/pop, loss of flexion/supination — urgent review	

Clinical Notes

- Early active ROM (unweighted) is safe from Day 1 — repair strength exceeds unweighted forearm force (Bergman et al. Level I RCT)
- Cortical button: highest load-to-failure but cyclic motion risk — defer heavy loads to Week 12; augmented construct allows earlier progression
- Forearm supination is the key functional deficit — prioritise supination strength recovery from Week 8
- Chronic reconstruction (allograft): extend Phase 1 and 2 by 2–4 weeks — surgeon-directed

References

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4. Kahlenberg CA et al. Return to sport after distal biceps tendon repair: a systematic review. Orthop J Sports Med. 2025. PMID 39836380.
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6. Cili A et al. Immediate active ROM after modified 2-incision repair in acute distal biceps rupture. Am J Sports Med. 2009;37(1):130-135.
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This rehabilitation protocol is intended as a general guide for qualified physiotherapists and healthcare professionals. It should be adapted to individual patient presentation, surgical findings, tissue quality, and progress. All progression decisions should be made in consultation with the treating surgeon.