Post-operative Rehabilitation Guidelines

Distal Biceps Tendon Repair

The following distal bicep tendon repair rehabilitation guideline serves to provide timelines for the soonest a phase or activity may be implemented. Thoughtful progression and patient tolerance to their rehab program takes priority over any specific date to begin a phase or activity.
Please reach out with questions or concerns regarding your patient's progress.

Patient:
Date of Surgery:
Special Considerations:

Phase I: Immediate Post-Surgical Phase (0-10 days)

- Patient is protected in post-operative immobilization splint. At this time wrist flexion/extension, gripping, scapular retractions, and shoulder ROM may be performed.

PRECAUTIONS/NOTES	ROM
• Immobilized in cast/splint • Wound check at 1st post-op appt.	• Wrist, hand, shoulder

GOALS / EMPHASIS	RECOMMENDED INTERVENTIONS
• Protect surgical repair	• Education, ensure proper fitting of splint
• ROM of hand, wrist, shoulder • Shoulder activation and posture	• P/AROM of shoulder • Active wrist extension & flexion • Gripping, light wrist extension & flexion • Scapular retractions, sidelying shoulder ER

Phase II: ROM Restoration Phase (10 days - 6 weeks)

- The goal of Phase 2 is to gradually restore full ROM. The patient will be in a hinged elbow brace, with extension limited to 30 degrees from 0. The goal is for full ROM by week 6. The patient may perform active supination and pronation with the elbow flexed immediately. At 2 weeks post-op, the patient may begin active flexion and extension, using BFR if accessible. The clinician should monitor the patient's reported discomfort and stretching of the biceps as a guide to limit active extension ROM.

PRECAUTIONS/NOTES	ROM	STRENGTHENING
• Avoid lifting with surgical arm • Protect from excessive elbow extension which may stretch surgical repair • Educate patient on proper brace usage to protect from quick reflexive movements	• Passive/Active pronation and supination with elbow flexed to 90 degrees • Begin active elbow extension and flexion at 2 weeks post-op • Progressive increase of elbow extension to reach full extension at week 6	• No resisted biceps

GOALS / EMPHASIS	RECOMMENDED INTERVENTIONS
• Control pain, effusion	• Contrast, ice, compression, elevation as needed

• Normalize elbow flexion & extension by 6 weeks post-op	• Soft tissue mobilization of biceps, flexor mass • Controlled AROM into elbow extension • Tricep isometrics at 30 degrees flexion, progress towards full extension • Active assisted elbow flexion, progressing to active elbow flexion as tolerated as early as 2 weeks post-op. • Use BFR if accessible to maintain muscle mass without loading
• Full pronation/supination by 6 weeks post-op	• Soft tissue mobilization of forearm as needed • Passive & Active pronation/supination (no resistance)
• Maintain activity at scapula, shoulder, wrist, and hand	• Use BFR • Scapular retractions • Sidelying external rotation, scaption, abduction (no resistance) • Gripping, wrist extension and flexion (light to moderate resistance)
• Cardio	• Stationary bike - begin with moderate steady pace and progress to sprints

Phase III: Early Strength Phase (6-12 weeks)

- By Phase 3, ROM should be full at 6 weeks into flexion, extension, pronation, and supination. May begin light resisted elbow flexion. Start with small ROM elbow flexion near end range (90-135 deg) and gradually increase the ROM over the duration of this phase. Start with small range elbow flexion in shortened position (i.e. 90-135 deg flexion) and conservatively increase the ROM through the duration of this phase. Use BFR if accessible to maximize the benefit of these low loads. Consider use of multi-joint movements, such as a row, to engage the bicep functionally with a larger movement. Closed kinetic chain strengthening may begin, starting upright on wall.

PRECAUTIONS	ROM	STRENGTHENING
• Avoid heavy loads to biceps • Avoid end range stretching of biceps	• Full flexion, extension, pronation, and supination	• Begin very light resisted elbow flexion (starting with small ROM, in shortened position of biceps as described above) • Compound movements incorporating the biceps (i.e. row, lat pull down)

GOALS / EMPHASIS	RECOMMENDED INTERVENTIONS
• Control pain, effusion	• Contrast, ice, compression, elevation as needed

• Begin resisted biceps exercises
• Compound movements to improve shoulder girdle, wrist, and hand strength while engaging bicepsBegin resisted elbow flexion (start light, with compound movements)
• Shoulder girdle strengthening
	• Use BFR if accessible
	• Isolated bicepes:
	  ◦ End range resisted elbow flexion (light loads, start 90-135 deg, and increase ROM over the duration of this phase)
	  ◦ Resisted supination (start with elbow flexion, work towards extended elbow position over duration of this phase)
	• Compound movements:
	  ◦ Band or cable rows
	  ◦ Lat pull down
	• Shoulder, wrist, hand strengthening:
	  ◦ Rotator cuff - sidelying, standing resisted ER
	  ◦ T's, Y's, serratus punches
	• Wall push-ups/planksUse BFR
	• Multi-joint exercises involving elbow flexion:
	  ◦ Banded or cable row

	• Lat pull down Isolated bicep strengthening (start with very light loads, and in a shortened position - start 90 deg to full flexion, and conservatively increase the ROM) • Elbow flexion - start 90-135 deg, gradually increase ROM over duration of this phase • Supination - start with elbow flexed, gradually increase extension over duration of this phase Open and closed chain shoulder/UE strengthening and proprioception • Wall push-ups (progress towards more horizontal positions) • T's, Y's, serratus punches • Rotator cuff strengthening
• Maintain elbow ROMain ROM	• Continue soft tissue mobilization, ROM exercises as needed

Phase IV: Advanced Strengthening (12-24 weeks)

- In Phase 4, further strengthening of the bicepbicep is the primary focus.Running may begin at week 12. A more traditional strengthening program may also be achieved by the end of this phase. Strengthening the biceps in a more lengthened position may begin in this phase, starting conservatively. Light plyometrics are also intiated towards the end of this phase. Depending on the patient's situation or position, a return to sport at 4 months may be allowed if given clearance by MD.

Progression towards a more traditional strengthening program begins in phase 4. Exercises stressing the biceps in a more lengthened position may be conservatively implemented (chest flies, D2 diagonals, etc) at week 16. Patient may initiate light double arm plyometrics at week 16. Progress to light single arm plyometrics at week 20.

PRECAUTIONS	STRENGTHENING	PLYOMETRICS
• Avoid rapid elbow extension until the end of this phaseAvoid rapid elbow extension until Week 16. • Avoid prolonged bicep stretching / loading in lengthened position	• Full elbow ROM bicep strengthening • Begin exercises stressing biceps in a lengthened position • Bench press, shoulder press • Work towards full horizontal push-ups, planks	• 2-handed plyometrics at Week 16 • 1-handed plyometrics start in next phase unless given clearance by MD

GOALS / EMPHASIS	RECOMMENDED INTERVENTIONS
• Bicep strength through full elbow ROM	• Full elbow ROM bicep strengthening, incorporate pronated and supinated grips • Supination with elbow flexed and extended
• Begin exercises stressing biceps in lengthened position	• Chest flies • Diagonal resisted patterns • Resisted shoulder flexion
• Implement more traditional strengthening program	• Bench press - start light due to potentially deconditioned state of other muscle groups • Shoulder press • Push-ups, planks • Running
• 2-handed plyometrics - begin at week 16	• Start with elbows flexed (MB wall taps at forehead level) • Work towards more extended positions (i.e. chest pass, scoops, shotputs, slams) but go slow to avoid too aggressive of an eccentric load on biceps

• **Follow-up with MD to determine return to sport timeline**

Phase V: Return to Sport (16+ Weeks)

- Phase 5 focuses on a progressive return to full activity. MD follow-up at week 16 will help determine the speed at which the athlete returns to sport. 2-handed plyometrics will progress to 1-handed plyometrics. Sport specific drills begin with MD clearance.

PRECAUTIONS / GUIDELINES
• MD clearance to begin sport-specific activities and return to practice

GOALS / EMPHASIS	RECOMMENDED INTERVENTIONS

• Progress plyometric training	• More aggressive 2-handed plyometrics
	  • MB slams, rainbows, chest passes, scoops
	  • Plyo push-ups
	• Begin 1-handed plyometrics
	  • Wall taps, reverse throws, trampoline rebounder series

• Sprinting, field work • Contact drills with MD cleareance	• Fast-speed agility, decelerating • Blocking, tackling, contact drills if given MD clearance

SIGNATURE:

DATE: