



DISTAL BICEPS REPAIR

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Progression through this protocol is **time and criterion based**, and depends on soft tissue healing, patient demographics and clinician evaluation. Advance a patient only when the goals of the current phase have been met. The operating surgeon may modify the timeline based on the repair performed and the quality of the tendon and bone.

POST-OPERATIVE IMMOBILIZATION

After surgery the arm is dressed with a soft dressing and an **ace wrap, and supported in a sling. No splint and no hinged elbow brace are used.** The sling is worn for comfort and protection and may be **discontinued at 2 weeks.**

PHASE I

WEEKS 0-6

Protect the repair

PHASE II

WEEKS 4-6

Passive and assisted motion

PHASE III

WEEKS 6-8

Assisted elbow motion

PHASE IV

WEEKS 8-12

Active motion, early strengthening

PHASE V

WEEKS 12-20

Strength and plyometrics

PHASE VI

WEEKS 20-24

Throwing and unrestricted lifting

I

PROTECT THE REPAIR · WEEKS 0-6

GOALS Protect the repair · minimal to no edema

IMMOBILIZATION & PRECAUTIONS

WEEKS 0-6

- ◆ **Ace wrap and sling only** — no splint, no hinged brace
- ◆ **Sling at all times for the first 2 weeks**, out of the sling for hygiene and for prescribed exercises
- ◆ **The sling may be discontinued at 2 weeks**
- ◆ **No passive range of motion until after the first post-operative visit**
- ◆ **No active elbow flexion or supination**
- ◆ No lifting, pushing or pulling with the operative arm
- ◆ Ball squeezes for edema control

BEGINNING AT 2 WEEKS

WEEKS 2-6

- ◆ PROM elbow per physician guidelines, including pronation and supination
- ◆ PROM shoulder flexion, abduction and external rotation — **avoid shoulder extension**
- ◆ Maintain active scapular stabilizers — retraction, clocks, PNF
- ◆ Shoulder isometrics — extension, abduction, ER, IR and submaximal flexion

II

PASSIVE & ASSISTED MOTION · WEEKS 4-6

GOALS At least 75% elbow PROM · tolerate increases in elbow extension · no edema or exacerbation with biceps isometrics and range of motion

RANGE OF MOTION

WEEKS 4-6

- ◆ PROM elbow flexion and supination
- ◆ PROM shoulder flexion
- ◆ AAROM shoulder abduction, ER, IR and extension, progressing to AROM as tolerated by the end of week 6

SOFT TISSUE & GRIP

WEEKS 4-6

- ◆ Initiate scar tissue mobilizations as needed
- ◆ Putty or finger web for grip strength

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III

ACTIVE-ASSISTED MOTION · WEEKS 6–8

GOALS Tolerate the forearm hanging dependently and extended · AAROM of the elbow from extension to full flexion

RANGE OF MOTION

WEEKS 6–8

- ◆ Continue to gain elbow extension range of motion
- ◆ AAROM elbow flexion and supination
- ◆ AAROM shoulder flexion

STRENGTHENING

WEEKS 6–8

- ◆ Initiate UBE in the forward direction, using vertical handholds
- ◆ Prone scapular stabilizing exercises — retraction, extension, rows, Ts
 - Avoid loading the biceps with a weight during rows
- ◆ Initiate submaximal elbow flexion and supination isometrics
- ◆ Rhythmic stabilization — supine, multiangle
- ◆ Side-lying or Theraband ER/IR strengthening
- ◆ Triceps and posterior deltoid strengthening

IV

ACTIVE MOTION & EARLY STRENGTHENING · WEEKS 8–12

GOALS 5/5 shoulder flexion, abduction, ER and IR strength · full elbow range of motion in supination and extension · no reactive effusion or exacerbation with biceps PREs

RANGE OF MOTION

WEEKS 8–12

- ◆ AROM elbow flexion and supination — **start gravity assisted**, progress to antigravity
- ◆ AROM shoulder flexion
- ◆ If lacking extension range, begin to push stretching into extension

STRENGTHENING

WEEKS 8–12

- ◆ Biceps PREs initiated **submaximally**
- ◆ Shoulder flexion PREs initiated
- ◆ Progress scapular stability
- ◆ Upper extremity weight shifts on a table

V

STRENGTH & POWER · WEEKS 12–20

GOALS Demonstrate 5/5 with biceps strength testing · no reactive effusion with unrestricted activities of daily living

STRENGTHENING

WEEKS 12–20

- ◆ Continue to strengthen the biceps and surrounding musculature
- ◆ Progress both weight-bearing and non-weight-bearing strengthening activities
 - Integrate functional strengthening
- ◆ Initiate light plyometrics — chest pass to a rebounder, impulse

VI

RETURN TO THROWING & UNRESTRICTED LIFTING · WEEKS 20–24

GOALS Return to free throwing and ballistic activity · return to unrestricted lifting

RETURN TO ACTIVITY

WEEKS 20–24

- ◆ If range of motion is full and pain free and the patient tolerates PREs, may begin **free throwing and ballistic activities** as well as **unrestricted lifting**

CRITERIA TO BEGIN THROWING

- 1 Good functional range of motion and strength
- 2 65% ER/IR isokinetic strength ratio
- 3 No more than a 15% side-to-side difference on the single-arm hop test
- 4 No more than a 15% side-to-side difference on the line test
- 5 Biodex or isokinetic testing for supination–pronation or elbow flexion–extension **within 15% of the uninvolved arm**

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QUESTIONS ABOUT YOUR RECOVERY?

Call the office with any question about your protocol, your sling, or your incision. Bring this handout with you to every post-operative visit.

SINGLE-ARM HOP TEST

FUNCTIONAL TESTING

- ♦ The patient begins in a single-arm push-up position
- ♦ Hop with that one arm up onto a small step, then return to the starting position
- ♦ Performed **5 times as quickly as possible**

LINE TEST

FUNCTIONAL TESTING

- ♦ The patient begins in a push-up position with each hand on a piece of tape
- ♦ Remove one hand from the tape, touch the opposite line, and return to the starting piece of tape
- ♦ Performed with alternating hand touches – one test is the maximum number of touches in **15 seconds**

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REFERENCES

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2. Mazzocca AD, et al. Biomechanical evaluation of 4 techniques of distal biceps brachii tendon repair. *The American Journal of Sports Medicine*. 2007; 35(2): 252–258.
3. Ramsey ML. Distal biceps tendon injuries: diagnosis and management. *Journal of the American Academy of Orthopaedic Surgeons*. 1999; 7: 199–207.
4. Hurov JR. Controlled active mobilization following surgical repair of the avulsed radial attachment of the biceps brachii muscle: a case report. *Journal of Orthopaedic and Sports Physical Therapy*. 1996; 23(6): 382–387.

Adapted from the Distal Biceps Repair Clinical Practice Guideline, Ohio State Sports Medicine, The Ohio State University Wexner Medical Center. Post-operative immobilization has been modified to reflect Dr. LeClere's practice.

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