

Distal Biceps Tendon Repair Protocol

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The "Safe Zone" and Protection Rules

To prevent avulsion (detachment) of the repaired tendon, the following rules apply for the first 6 weeks:

- **No Active Elbow Flexion:** Do not use the biceps to lift the weight of the forearm.
- **No Resisted Supination:** Do not "palm up" the hand against any resistance (e.g., turning a doorknob or using a screwdriver).
- **Lifting Restriction:** No lifting objects heavier than a coffee cup with the operative arm.
- **Extension Caution:** Avoid aggressive or forced terminal elbow extension stretching.

Phase I: Immediate Post-Operative / Protection (Weeks 0–2)

Goals: Protect the repair site, control edema, and maintain shoulder and wrist mobility.

- **Immobilization:** The patient may be in a soft dressing or posterior splint for the first 7 to 10 days. Once the splint is removed, no formal brace is required, but protection rules must be strictly followed.
 - **Range of Motion:**
 - **Shoulder AROM:** Full active range of motion in all planes to prevent secondary stiffness.
 - **Wrist/Hand/Cervical AROM:** Full active motion; squeeze a therapy ball (1 minute, 3 times daily) to maintain forearm muscle pump and reduce swelling.
 - **Exercises:**
 - **No active elbow movement.**
 - **No passive elbow stretching.**
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Phase II: Early Range of Motion (Weeks 2–6)

Goals: Gradually restore elbow extension while protecting the tendon from "long-lever" stress.

- **Motion Progression:**
 - **Passive Elbow Flexion:** Full range as tolerated.
 - **Active-Assisted Elbow Extension:** Use the unaffected arm to slowly lower the operative forearm.
 - **Extension Goal:** Gradually achieve full extension by week 6. Perform extension exercises slowly to avoid sudden eccentric loading.
 - **Forearm Rotation:** Passive supination and pronation with the elbow flexed at 90 degrees.
 - **Strengthening:**
 - **Shoulder/Scapula:** Progress to light resistance (bands) for rows, shrugs, and rotator cuff isometrics.
 - **No active elbow flexion or resisted rotation.**
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Phase III: Active Motion and Initial Loading (Weeks 6–12)

Goals: Initiate active biceps recruitment and restore functional mobility.

- **Motion Progression:**
 - **Active ROM:** Begin active elbow flexion and extension **against gravity only** (no weights).
 - **Full ROM Goal:** Achieve full active flexion, extension, and forearm rotation by week 8.
 - **Strengthening (Week 8+):**
 - **Initial Loading:** Begin very light curls (1 pound) and light "hammer" curls (neutral grip).
 - **Supination:** Initiate light resisted supination using a rubber band or a light hammer/wand.
 - **Upper Body:** Progress to light weight-training machines (rows, lat pulldowns) while keeping the elbows in front of the body.
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Phase IV: Advanced Strengthening & Return to Activity (Weeks 12–24+)

Goals: Restore full power and return to heavy manual labor or sports.

- **Strengthening Progression:**
 - **Isotonics:** Gradually increase weight for biceps curls and forearm rotation.
 - **Functional Tasks:** Rehearse lifting and carrying objects, starting at waist level and progressing to overhead.
 - **Return to Sport/Work Timeline:**
 - **Non-manual Work:** 2 to 4 weeks.
 - **Golf/Tennis:** 12 to 16 weeks.
 - **Heavy Lifting/Contact Sports:** 5 months
 - **Discharge Criteria:**
 - Biceps and supinator strength at least 80 percent of the uninvolved side.
 - Full, non-painful active range of motion.
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Clinical Pearls for the Therapist

1. **Guarded Extension:** Without a brace to limit motion, the patient must be cautioned against "letting the arm drop" into full extension. Controlled, active-assisted extension is key.
2. **The "Passive Flexion" Advantage:** Always perform elbow flexion passively or assisted in Phase II. Active flexion creates a "bowstring" effect that can stress the fresh reattachment point.
3. **Supination vs. Flexion:** Evidence suggests that resisted supination puts more stress on the distal biceps than simple flexion. Be more conservative with resisted "palm-up" movements than with standard curls.