

### **DISTAL BICEPS TENDON REPAIR PROTOCOL**

This rehabilitation protocol has been developed for the patient following a tenodesis (reattachment) of the long head of the biceps tendon surgery. This protocol will vary in length and aggressiveness depending on factors such as:

- Quality of the repaired biceps tendon tissue
- Presence of additional procedures such as shoulder arthroscopy
- Degree of shoulder instability or weakness or deconditioning prior to surgery
- Acute versus chronic condition
- Length of time immobilized
- Strength/pain/swelling/range of motion status
- Rehabilitation goals and expectations

Early passive range of motion is highly beneficial to enhance circulation within the joint to promote healing. The protocol is divided into phases. Each phase is adaptable based on the individual and special circumstances. The **overall goals** of the surgical procedure and rehabilitation are to:

- Control pain, inflammation, and swelling
- Regain normal upper extremity strength and endurance
- Regain normal shoulder range of motion
- Achieve the level of function based on the orthopedic and patient goals

Physical therapy should be initiated after the first week post-op. The supervised rehabilitation program is to be supplemented by a home fitness program where the patient performs the given exercises at home or at a gym facility. **Important post-op signs** to monitor:

- Swelling of the arm or shoulder and surrounding soft tissue
- Abnormal pain response, hypersensitivity, increasing night pain
- Severe range of motion limitations
- Weakness in the upper extremity musculature
- Improper mechanics or scapular dyskinesia
- Core and peri-scapular strength deficits

**Return to activity** requires both time and clinical evaluation. To safely and most efficiently return to normal or high level functional activity, the patient requires adequate strength, flexibility, and endurance. Functional evaluation including strength and range of motion testing is one method of evaluating a patient's readiness return to activity. Return to intense activities following a biceps tenodesis requires both a period of time to

allow for tissue healing along with a graduated strengthening and range of motion program. Symptoms such as pain or swelling should be closely monitored by the patient and therapist. Specific exercises may be added, substituted, or modified where clinically appropriate by experienced sports/shoulder therapists or trainers who have expertise in the care of post-operative tendon repair procedures. While patients may be "cleared" to resume full activities at 6+ months following surgery, additional time spent in full activity or sport participation is often necessary to achieve maximal recovery.

## **DISTAL BICEPS REPAIR**

### **PHASE 1: WEEK 1-2**

#### **PRECAUTIONS**

- Post splint at 90° elbow flexion is to be worn for 1<sup>st</sup> 2 weeks in neutral forearm position
- No active supination for 14 days
- No active elbow flexion 6 weeks

#### **ROM**

- Gradual ↑ Active/Passive ROM of shoulder in all planes while in splint
- Wrist/hand/finger full AROM in splint

#### **STRENGTH**

- Scapular retractions
- Shoulder shrugs

#### **MODALITIES**

- Hot pack before treatment
- E-stim, TENS as needed
- Ice 10-15 minutes after treatment

#### **GOALS OF PHASE 1**

- Control pain and inflammation
- Protect repair
- Independent in HEP

### **PHASE 2: WEEK 3-6**

#### **PRECAUTIONS**

- Elbow placed in a *hinged ROM brace* set unlocked at 45° to full flexion.
- *Brace* to be worn at all times except during exercise or bathing
- *Passive* ROM for elbow flexion
- *Assisted* ROM for elbow extension and supination/pronation (with elbow at 90°)
- Shoulder AROM as needed based on evaluation, avoiding excessive extension

#### **ROM**

- Hinged Brace Range of Motion Progression (ROM progression may be adjusted base on Surgeon's assessment of the surgical repair.)
  - Week 2 45° to full passive elbow flexion
  - Week 3 45° to full passive elbow flexion
  - Week 4 30° to full passive elbow flexion
  - Week 5 20° to full passive elbow flexion
  - Week 6 10° to full passive elbow flexion
- Forearm: Initiate AAROM pronation and supination
- Progress to active pronation and supination (wk 4)

- Exercises
  - Gentle pulley (limit extension accordingly)
  - Finger walk up wall

#### STRENGTH (in brace)

- Isometric shoulder exercises
- Supine/standing rhythmic stabilizations
- Wrist/hand: grip strengthening
- Standing flexion and scaption
- Prone extension
- Side-lying ER
- Isometric triceps pain free (week 6)

#### MANUAL

- Scar mobilization
- Passive elbow flexion
- Joint mobs as needed

#### MODALITIES

- Heat/hot pack before therapy
- US to incision as needed
- Ice 10-15 minutes

#### GOALS OF PHASE 2

- Protection of repair
- Gradual increase in ROM
- Initiate strengthening to surrounding tissues
- Improve scapular stability

#### **PHASE 3: WEEK 7-12**

##### ROM

- Week 8 Full ROM of elbow; discontinue brace if adequate motor control
- Initiate UBE light resistance
- Exercises
  - Ball roll outs on table
  - Wall walk
  - Pulley

##### STRENGTH

- Bicep/elbow flexion progression
  - 6 weeks: initiate AROM
  - 8 weeks: initiate light theraband resistance
- Initiate resisted forearm supination and pronation at week 8+
- Theraband IR/ER shoulder

- Theraband triceps extension (week 8)
- Rhythmic stabilization

#### MANUAL

- Passive elbow flexion
- Joint mobs as needed to regain full extension
- Week 8: Passive or contract relax to gain full extension if still lacking

#### MODALITIES

- Ice 10-15 minutes

#### GOALS OF PHASE 3

- Reach full ROM
- Initiate loading to repair
- Enhance neuromuscular control
- Pain free ADLs

#### **PHASE 4: WEEK 12+**

##### STRENGTH:

- Progress strengthening program with increase in resistance and high speed repetition
- Bicep curls with dumbbells
- Initiate IR/ER exercises at 90° abduction
- Progress rhythmic stabilization activities to include standing PNF patterns with tubing
- Initiate plyotoss – double arm progress to single arm
- Initiate sport specific drills and functional activities
- Initiate interval throwing program week 16-20
- Initiate light upper body plyometric program week 16-20
- Progress isokinetics to 90° abduction at high speeds

#### MODALITIES

- Ice 15-20 minutes

#### GOALS OF PHASE 4

- Full painless ROM
- Maximize upper extremity strength and endurance
- Maximize neuromuscular control
- Optimize shoulder mechanics/kinematics
- Optimize core stability
- Initiate sports specific training/functional training