

Subpectoral Biceps Tenodesis Protocol

The intent of this protocol is to provide the therapist with a guideline of the post-operative rehabilitation course for the patient that has undergone a subpectoral biceps tenodesis. It is by no means intended to be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam / findings, individual progress, and / or the presence of post-operative complications. If a therapist requires assistance in the progression of a post-operative patient they should consult with the referring surgeon.

Initial Post Operative Immobilization

- Elbow immobilization at 90 degrees for 5- 7 days with forearm in neutral (Unless otherwise indicated by surgeon)

Phase 1: Immediate Post-Operative Phase

Goals:

- Protect the anatomic repair
- Prevent negative effects of immobilization
- Gradually increase PROM
- Promote dynamic stability
- Diminish pain and inflammation

Principles:

- Progress through rehab once specific criteria met
- Follow evaluation-based protocol, but adapt to individual
- Remember biologic healing tendon to bone (8 – 12 weeks or longer)

Post-Operative Day 2 Visit:

- Educate patient in wound care and hygiene
- Educate patient in proper posture
- Educate patient in precautions
 - Abduction sling for 4 weeks during awake hours
 - Sling is worn for 6 weeks while sleeping
 - Pillow from sling removed at 4 weeks, but patient is to wear sling only from 4 – 6 weeks
 - No shoulder AROM, lifting of objects, shoulder motion behind back, excessive stretching or sudden movements, supporting of any weight, and lifting of body weight by hands
 - No active assistive biceps contraction
- Codman's exercises with elbow bent
- Shoulder shrugs seated with elbows slightly bent with patient's arms resting on their lap
- Scapular squeezes with elbows slightly bent with patient's arms resting on their lap
- Gripping exercises; make sure arm is relaxed with arms on laps so there is no biceps contraction
- Elbow / forearm PROM: **NO active elbow flexion for 4 weeks and no resisted elbow flexion for 8 weeks for biceps tenodesis. No active or passive shoulder extension beyond neutral with the elbow extended for 8 weeks**
- Cervical ROM

Week 1 – 3:

- At week 1 post-op, begin Codman's exercises in the elbow straight as long as patient can do these exercises without pulling in the biceps
- Begin gentle PROM of the shoulder (flexion / abduction / ER / IR) with the elbow slightly bent to take stress off
- Avoid passive shoulder extension beyond the plane of the body so as to not putting any stress on the biceps tenodesis repair
- Begin scapular PNF

Week 3:

- Patient continues to wear sling
- Continue gentle PROM but NOT stretching: flexion, abduction, scaption, ER / IR to tolerance
- Continue Codman's exercises with elbow straight
- Gentle oscillation – Grade I – II mobilization of glenohumeral and scapulothoracic joint
- Manual scapular resistive exercises; scapular protraction, retraction, and depression in side-lying with a towel roll or pillow between arm and body. Hand contacts on scapula
- Wand exercises spine on towel roll; ER / IR in scapular plane
- Table slides in flexion; the body should be the driving force, not the U E
- Rhythmic stabilization ER / IR with arm supported on a towel roll
- Submaximal Isometrics for shoulder musculature; shoulder in scapular plane with towel roll between body and arm and elbow flexed to 90 degrees; extension (arm in neutral and elbow even with the plane of the body), internal rotation, external rotation, adduction, and abduction; **NO resisted shoulder flexion with biceps tenodesis**
- Add resistance to forearm, wrist and finger

Week 4:

- Progress wand exercises to supine flexion / scaption with elbows extended
- Pulley flexion / scaption
- Continue PROM and mobilizations as needed
- Begin Rhythmic stabilizations in 90 degrees of flexion and progress ER / IR to unsupported
- Balance point exercises; passively raise the arm to 90 degrees and have the patient move the arms from 90 to 110 back and forth in a protracted position
- AAROM; supine flexion, D2 with wand or support of therapist; may start with elbow flexed and progress to elbow straight
- Wall climb; may use the unaffected side to support and help under the elbow or crawl up the wall with their fingers
- AROM; side-lying ER with towel roll between arm and body
- Table top exercises; scapular protraction / retraction, elevation / depression during ball roll or table slide with weight of arm supported by ball or table
- Active punches; arms raise passively to 90 degrees then punches (protraction and retraction); then passively lower arm also
- Prone row and extension by side (stop at the plane of the body); begin with no resistance and gradually increase resistance as tolerated
- Supine active extension (triceps) with shoulder stabilized at 90 degrees of shoulder flexion with the support of the other arm

Week 5:

- Supine active flexion, scaption, and D2; may start with elbow flexed; progress to elbow straight and then to dumbbells; begin from 90 – 60, progress from 90 – 45 and then 90 – 20 degrees as tolerated
- Continue PROM and mobilizations if needed; goal is near full PROM from this point
- UBE for ROM only (slowly, minimal resistance)

Phase 2: Protection and Active Motion:

Goals:

- Gradually restore full ROM and capsular mobility
- Preserve the integrity of the surgical repair
- Restore muscular strength and balance
- Normalize scapulohumeral rhythm
- **Patient must be able to elevate their arm without shoulder or scapular hiking. If the patient is unable to perform this, then continue scapular strengthening and stabilizing exercises.**

Week 6:

- Continue PROM; continue inferior and posterior glides if needed
- Begin active elbow flexion for biceps
- Wall washes; incorporate squat with scapular retraction to overhead arm with protraction as hips and knees extend
- Progress resisted side-lying ER
- Standing TheraBand exercises; ER with towel roll between arm and body, IR with towel roll between arm and body, extension and rows to the plane of the body

Week 7:

- Continue PROM at all angles to tolerance
- Add side-lying IR / sleeper stretch
- Add crossbody stretch
- Prone scapular exercises; horizontal abduction palm down
- Progress prone horizontal abduction to thumb up and thumb down as tolerated
- Un-supported rhythmic stabilization in various degrees of elevation; ER / IR in the scapular plane and at 90 -90 with arm in neutral if tolerable
- Progress active flexion / scaption / abduction / D2 to standing when able to perform without shoulder hiking; limit flexion / scaption and abduction to 90 degrees only and make sure thumb is up to avoid impingement
- Prone flexion at 145 degrees (may require assistance to complete full ROM to plane of body)
- Wall push up plus exercises (serratus emphasis with elbows straight)

Week 8:

- Begin resisted biceps exercise; start with 1 lb. and gradually increase resistance by 1 lb. increments
- Begin slowly adding resistance to shoulder flexion / scaption and abduction as tolerated; start with 1 lb. and gradually increase resistance by 1 lb. increments; do not go over 5 lbs

Week 9 – 10:

- Progress push up plus exercise; scapula motion only with elbows kept straight; progress to quadruped, table top
- Week 9: bodyblade ER / IR at 0, 90 degrees flexion and scaption
- Week 10: impulse ER / IR at 0 degrees
- Progress resistance on standing flexion / scaption / abduction / D2 as tolerated without shoulder hiking

Phase 3: Minimal Protection Phase

Goals:

- Establish and maintain full functional ROM and capsular mobility
- Dynamic shoulder stability
- Optimize neuromuscular control
- Improve muscular strength, endurance, power and stability
- Initiate functional activities and gradually return to full functional activity

Criteria to enter Phase 3:

1. Full non-painful ROM
2. Good scapulohumeral rhythm
3. Muscular strength graded good (4-5) or better
4. No tenderness

Week 11 – 14:

- May initiate light upper extremity weight training on exercise machines and progress as tolerated
- Non-athletes initiate endurance program that simulates desired work activities / requirements

