

## Surgical Rehabilitation Protocol Biceps Tenodesis

The following information is to help make your recovery from surgery as smooth and rapid as possible. If you have any questions or concerns, contact Dr. Mayo's team at the number above. You will have appointments with Dr. Mayo at ~1-2 weeks postop.

### Phase 1: Recovery from Surgery – 0-2 Weeks After Surgery

<b>Goals</b>	<ul style="list-style-type: none"> <li>• Protect the biceps repair and create an environment for optimal healing</li> <li>• Educate patient on rehab progression and precautions</li> <li>• Control pain, swelling and inflammation</li> <li>• Achieve PROM limits, reduce muscle atrophy</li> <li>• Establish stable scapula and postural control</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• <b>No Isolated Biceps strengthening for 6 weeks</b></li> <li>• <b>Sling:</b> Wear sling for comfort as needed. You may come out of the sling to shower and basic grooming and exercise sessions, and as your comfort increases.</li> <li>• <b>Weight Bearing:</b> No lifting more than weight of a cup of coffee with operative arm</li> <li>• <b>Range of Motion:</b> Gentle range of motion of elbow, avoid supination</li> <li>• <b>Wound Care:</b> No swimming or submerging in water until wounds healed</li> <li>• <b>Call Dr. Mayo if:</b> Significant wound drainage or dehiscence, purulence, erythema.</li> </ul>
<b>Therapeutic Exercises</b>	<ul style="list-style-type: none"> <li>• <b>Strengthening:</b> No biceps strengthening. Scapular motion and stability, ok for shoulder isometrics, progress to shoulder IR/ER with theraband</li> <li>• <b>Conditioning:</b> Stationary bike, walking</li> <li>• <b>Range of motion:</b> <ul style="list-style-type: none"> <li>• Pendulums</li> <li>• Rope and pulley for non painful ROM</li> <li>• Elevation in scapular plane</li> <li>• External rotation at 30 degrees abduction and progressing to 45 and 90 degrees</li> </ul> </li> <li>• <b>Modalities:</b> Per therapist, including electrical stimulation, ultrasound, heat (before), ice (after)</li> <li>• <b>Manual Therapy:</b> Soft tissue mobilization, passive range of motion as above, scapular mobilization</li> </ul>
<b>Home Instructions</b>	<ul style="list-style-type: none"> <li>• <b>Wound Care:</b> Remove postoperative bandages on postoperative day 3. Leave white bandaids (Steri-strips) in place, they will fall off on their own. Sutures will be removed at ~2 weeks postop in clinic.</li> <li>• <b>Bathing:</b> Showering permitted once initial postoperative bandage removed. Allow water to run over incisions, do not scrub, pat dry only. No submerging in water (bath/pool/lake/etc.) for 4 weeks.</li> <li>• <b>Driving:</b> You should not drive while your arm is in a sling as your ability to drive safely is reduced. Must be off all narcotic pain meds when operating vehicle.</li> <li>• <b>Sleeping:</b> Sleep in reclining chair or bed as comfortable, sling must remain on.</li> <li>• <b>Ice and Elevation:</b> Ice for 20 minutes every hour for the first week.</li> <li>• <b>Home Exercise:</b> As instructed by physical therapy.</li> </ul>
<b>Criteria to Progress</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 2 weeks postoperative</li> <li><input type="checkbox"/> Minimal swelling and pain</li> </ul>



## Surgical Rehabilitation Protocol Biceps Tenodesis

The following information is to help make your recovery from surgery as smooth and rapid as possible. If you have any questions or concerns, contact Dr. Mayo's team at the number above. You will have appointments with Dr. Mayo at ~6 weeks postop

### Phase 2: Early Strengthening/Neuromuscular Control – 2-6 Weeks After Surgery

<b>Goals</b>	<ul style="list-style-type: none"> <li>Continued protection of healing tissue with slow progression of activity</li> <li>Improve neuromuscular control of shoulder complex</li> <li>Normalize AROM without overstressing healing tissue</li> <li>Minimize pain and inflammation (may ice after exercise)</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li><b>Sling:</b> No sling</li> <li><b>Weight Bearing:</b> 2 lb lifting limit</li> <li><b>Range of Motion:</b> Ensure proper biomechanics of elevation with avoidance of "scapular shrug"</li> <li><b>Call Dr. Mayo if:</b> Any wound concerns,</li> </ul>
<b>Therapeutic Exercises</b>	<ul style="list-style-type: none"> <li><b>Strengthening:</b> No biceps strengthening. OK for active ROM elbow no weight. Shoulder elevation, lateral raises, prone rowing, extension, abduction</li> <li><b>Range of motion:</b> No restrictions, progress all as tolerated</li> <li><b>Conditioning:</b> Stationary bike, walking, light jogging OK</li> <li><b>Modalities:</b> Per therapist, including electrical stimulation, ultrasound, heat (before), ice (after). Joint mobilization anterior, posterior, inferior glides</li> <li><b>Manual Therapy:</b> Soft tissue mobilization, scapular mobilization</li> </ul>
<b>Home Instructions</b>	<ul style="list-style-type: none"> <li><b>Driving:</b> OK to drive assuming off narcotic pain medication and sling removed</li> <li><b>Sleeping:</b> OK to remove sling</li> <li><b>Ice and Elevation:</b> Ice as needed for pain and swelling after activity</li> <li><b>Home Exercises:</b> As instructed by physical therapy</li> </ul>
<b>Criteria to Progress</b>	<input type="checkbox"/> Full active range of motion with normalized mechanics for elevation without scapular shrug or other substitution patterns



## Surgical Rehabilitation Protocol Biceps Tenodesis

The following information is to help make your recovery from surgery as smooth and rapid as possible. If you have any questions or concerns, contact Dr. Mayo's team at the number above. You will have appointments with Dr. Mayo at ~3 months and ~6 months postop.

### Phase 3: Advanced Activity Phase – 8+ Weeks After Surgery

<b>Goals</b>	<ul style="list-style-type: none"> <li>• Full AROM with normalized mechanics in all planes</li> <li>• Normalized muscle strength in the rotator cuff, scapular stabilizers, and shoulder primary movers</li> <li>• Return to ADL's, work and recreational activities without pain or disability</li> </ul>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• Use of the arm at and above shoulder level may occur with light weight, as long as mechanics for elevation remain normalized, and lifting up to 10 lbs below shoulder level allowed</li> <li>• Normalization of ADL's, work and recreational activity - gradual return, particularly for repetitive and overhead activities</li> <li>• Gradual progression of exercises to restore strength, endurance, and work/sport specific movement</li> <li>• Resistance exercises should only be initiated when there is FAROM with normalized mechanics</li> <li>• <b>Call Dr. Mayo if:</b> Significant weakness or pain with activity, regression in strength or motion</li> </ul>
<b>Therapeutic Exercises</b>  <i>See last page for example exercises</i>	<ul style="list-style-type: none"> <li>• <b>Strengthening:</b> Active and active assist ROM only</li> <li>• <b>Conditioning:</b> Stationary bike</li> <li>• <b>Modalities:</b> Per therapist, including electrical stimulation, ultrasound, heat (before), ice (after)</li> </ul>
<b>Home Instructions</b>	<ul style="list-style-type: none"> <li>• <b>Home exercises:</b> Workouts in gym, focus per physical therapist</li> </ul>
<b>Criteria to Return to Work/Sport</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Clearance from physician</li> <li><input type="checkbox"/> Pain free at rest and minimal pain with the work or sport specific activity simulation</li> <li><input type="checkbox"/> Sufficient ROM and strength with normalized mechanics for the activity</li> </ul>



## Surgical Rehabilitation Protocol Biceps Tenodesis

### Sample Rehabilitation Exercises by Phase

Phase I	Phase II
Week 0-2	Week 2-8
<ul style="list-style-type: none"> <li>• <b>Posture:</b> active seated and standing thoracic extension and scapular sets (retraction to neutral), depression and protraction, cervical ROM/upper trapezius stretch as needed</li> <li>• <b>Pendulum:</b> small circles with arm supported by non-operative arm for first three weeks, then unsupported for the remainder of the phase. Emphasize passive</li> <li>• <b>PROM:</b> self-assisted with non-operative UE, bent elbow supine elevation in scapular plane; or seated table top supported elevation in scapular plane in established PROM constraints (0-90 for 3 weeks, followed by 0-125 for remainder of phase); NO pulley or cane assisted elevation in this phase</li> <li>• <b>AROM:</b> Elbow, wrist and hand without weight; only PROM (opposite UE assisted) for elbow flexion and supination if concomitant biceps tenodesis/tenotomy performed</li> <li>• Grade I/II mobilization as indicated for pain relief</li> <li>• Seated or supine self-assisted or wand assisted ER in scapular plane in established PROM constraints (0-40 for 3 weeks, followed by 0-60 for remainder of phase)</li> <li>• NO ROM behind the back in this phase; No Cross body adduction past midline</li> </ul>	<ul style="list-style-type: none"> <li>• Continue thoracic extension and scapular set (retraction to neutral plus depression) prior to any passive or active exercise for optimal positioning</li> <li>• <b>PROM</b> to tolerance with gentle overpressure in all planes; may begin cross body adduction, hand slide up spine, etc, in range without muscle splinting/guarding; may begin ER at 90 deg. abduction in scapular plane. Integrate grade 3/4 glenohumeral mobilization as needed prior to PROM</li> <li>• <b>AAROM:</b> cane assisted forward elevation in supine - begin with bent elbow, progress to straight as able to control the short lever arm through the range without pain; progress to inclined table 3 Rotator Cuff Repair Rehab Guidelines top AROM (bent then straight elbow); progress to vertical supported on wall (bent then straight elbow); then vertical unsupported</li> <li>• <b>AROM:</b> ER in sideling; prone extension to hip (not past 20 degrees extension) with end range scapular retraction; supine serratus punches; supine long lever arm motion in controlled range from balanced position</li> <li>• <b>Aquatic:</b> no range restrictions; may add “hug yourself” activity and “hook and rotate” and may progress speed as directed by PT/MD</li> <li>• Submaximal isometrics for ER; IR; abduction; flexion; extension</li> <li>• Rhythmic stabilization in balanced position (90 degrees elevation in supine) with submaximal force. Gradually increase force and move out of balanced position: 60, 120, 150 degree positions of elevation</li> <li>• Sideling manually resisted scapular protraction and retraction</li> </ul>



## Surgical Rehabilitation Protocol Biceps Tenodesis

### Phase III

#### Weeks 8+

- UBE for active warm up
- Continued end range stretching and mobilizations as needed, particularly posterior capsule (cross body adduction, sleeper stretch with scapula stabilized, ER > 90 degrees for throwers/tennis)
- Rotator cuff strengthening: "full can" scaption, initially to 90, then throughout range, no weight, to max 3-5 lb. resistance; ER and IR strengthening with hand weights or theraband, initially below shoulder level, progressing to above shoulder level as needed for work or sport. Emphasize high repetitions (30-50) with low resistance (1-5 lbs); progress in increments of one pound when 30-50 repetitions are easy and painless
- Scapular stabilization exercises: Extension to hip and horizontal abduction with ER, either prone with hand weights, or standing with theraband; serratus presses in supine with hand weight; serratus wall presses with shoulder in neutral and in ER, progressing to co-contraction on air disc, plyoball, then progress to weight bearing on incline.
- Deltoid: forward and lateral raises to 90 degrees with light hand weight
- Use of weight lifting machines (chest press, lat pull downs, seated row...) only anterior the plane of the body; incorporate scapular work to end range; low resistance and high reps
- Combined muscle patterns: PNF diagonals progressing from supine to standing, seated on ball for core added, progressing resistance from none to theraband or hand weight
- Aquatics: may do full motion for all exercises, with cupped hand, progressing to use of gloves or paddle for added resistance and then increasing speed of movement
- Advanced strengthening activities (not needed for all patients - must have 4/5 in cuff and scapular mm) useful for overhead athletes or heavy laborers: plyoball chest passes on minitramp; body blade ER neutral, 90 deg elevation in scapular plane; sports specific arm movement simulation with theraband or Body blade (eg. tennis swing)

