



*Orthopedic Surgery, Sports Medicine & Arthroscopy Specialists*

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### REHABILITATION PROTOCOL- Nonoperative Biceps tendinopathy/tear

The rehabilitation guidelines are presented in a criterion based progression program. Individual patients will progress at different rates depending on their age, associated injuries, pre-injury health status, rehab compliance, tissue quality and injury severity. Specific time frames, restrictions, and precautions may also be given to protect healing tissues and the surgical repair/reconstruction. The therapist should consult the referring physician with any questions or concerns.

### INDIVIDUAL CONSIDERATIONS

#### PHASE 1 (~0-3 weeks)

REHAB GOALS	<ol style="list-style-type: none"> <li>1. Gradual restoration of ROM</li> <li>2. Minimize swelling &amp; pain</li> </ol>
PRECAUTIONS	<ol style="list-style-type: none"> <li>1. ROM begin restoring IR/ER at side &amp; scapular elevation, progress to IR/ER in abduction</li> <li>2. Ice/modalities as needed for pain</li> </ol>
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> <li>○ Passive, active assist ROM in all planes, start supine, progress to standing arm at side, then to abduction</li> <li>○ Posterior shoulder/pec/trap/levator stretches</li> <li>○ Sport specific hip/LE stretches</li> <li>○ Soft tissue mobilizations/techniques as tolerated</li> </ul>
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> <li>○ As above</li> <li>○ LE and core activities when pain tolerates</li> <li>○ Scapular strengthening &amp; stabilization, emphasize low/mid trap</li> <li>○ Closed chain- perturbations in quadruped</li> <li>○ Isometric exercises in 20-30 abduction in plane of scapula &amp; neutral rotation below 90 deg. Begin with elbow supported, gradually remove support.</li> <li>○ Higher level athlets- balance/proprioception begin 2 leg, progress to unilateral, unstable surface, etc</li> </ul>
CARDIOVASCULAR EXERCISE	<p>Stationary bike, elliptical (no UE), stairmaster within pain tolerance</p> <p>Pool running/treadmill walking as tolerated</p>
PROGRESSION CRITERIA	<ul style="list-style-type: none"> <li>○ Full passive ROM in all planes, minimal pain at end range</li> <li>○ Decreased inflammation</li> <li>○ No pain at rest</li> </ul>

#### PHASE 2 (~4-8 weeks)

REHAB GOALS	<ol style="list-style-type: none"> <li>1. Achieve ROM goals</li> </ol>
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	<ol style="list-style-type: none"> <li>2. Normalize rotator cuff guarding &amp; neuromuscular control</li> <li>3. Minimize pain and swelling</li> </ol>
<b>PRECAUTIONS</b>	<ol style="list-style-type: none"> <li>1. Avoid repetitive overhead activity</li> <li>2. Ice as needed after activity</li> </ol>
<b>RANGE OF MOTION EXERCISES</b>	<ul style="list-style-type: none"> <li>○ Continue phase 1 exercises</li> <li>○ Progress from active assist to active ROM</li> <li>○ Glenohumeral/scapular mobilizations as needed</li> </ul>
<b>SUGGESTED THERAPEUTIC EXERCISES</b>	<ul style="list-style-type: none"> <li>○ Continue phase 1 exercises</li> <li>○ Submaxim bicep curls with dumbbells (eccentric for biceps tendinopathy)</li> <li>○ Rotator cuff &amp; scapular prone exercises. Light isotonic/resistance. Standing ER/IR, side lying ER, retractions, scaption, prone I, T, Y, W. Submaximal triceps kickback, dumbbell forearm exercises, scapular protraction/retraction.</li> <li>○ Scapular stabilization w/submax PNF, scapular clocks</li> <li>○ Bodyblade at 0 abduction, 90 scapular elevation</li> <li>○ PNF D1-2 w/manual resistance &amp; slow reversals</li> <li>○ Closed chain UE PNF quadruped</li> <li>○ LE plyometrics</li> </ul>
<b>CARDIOVASCULAR EXERCISE</b>	<p>Continue phase 1 Jog/run progression</p>
<b>PROGRESSION CRITERIA</b>	<ul style="list-style-type: none"> <li>○ Normal active assist ROM</li> <li>○ No pain with ADLs</li> <li>○ Improved muscular performance</li> </ul>

**PHASE 3 (~6-12 weeks)**

<b>REHAB GOALS</b>	<ul style="list-style-type: none"> <li>○ Maintain ROM</li> <li>○ Improve scapular, cuff strength</li> <li>○ Minimize pain</li> </ul>
<b>PRECAUTIONS</b>	
<b>RANGE OF MOTION EXERCISES</b>	<ul style="list-style-type: none"> <li>○ Continue exercises from phase 2.</li> <li>○ Mobilizations as needed (esp post/inf glides if lacking ER/Elevation)</li> <li>○ Posterior shoulder/pec stretches for throwers</li> </ul>
<b>SUGGESTED THERAPEUTIC EXERCISES</b>	<ul style="list-style-type: none"> <li>○ Continue exercises from phase 2</li> <li>○ LE &amp; core- progress strengthening.</li> <li>○ Advance biceps dumbbell strengthening</li> <li>○ Progress scapular strengthening, add rowing</li> <li>○ thrower’s exercises: ER/IR at 0 abduction (progress to IR/ER as pain</li> </ul>

	<p>tolerates), scaption ER full can, rows into ER at 90 abduction seated on stability ball, lower trap seated on stability ball, elbow flexion, elbow extension/triceps, wrist extension, wrist flexion, supination, pronation, sleeper stretch, supine horizontal adduction stretch into IR, Prone horizontal abduction neutral/full ER at 100, prone row, Diagonal pattern (D2) flexion/extension</p> <ul style="list-style-type: none"> <li>○ Advance shoulder/scapula PNF</li> <li>○ Initiate shoulder/scapular rhythmic stabilizations</li> <li>○ Standing body blade</li> </ul>
<b>CARDIOVASCULAR EXERCISE</b>	Continue phase 2. Add UBE
<b>PROGRESSION CRITERIA</b>	<ul style="list-style-type: none"> <li>○ Full pain free active ROM</li> <li>○ No pain/tenderness</li> <li>○ Normal glenohumeral &amp; scapulothoracic mechanics</li> </ul>

**PHASE 4 (~10-16 weeks)**

<b>REHAB GOALS</b>	<ul style="list-style-type: none"> <li>○ Full ROM in all planes</li> <li>○ No pain with sport activities</li> <li>○ Improvement of strength, endurance, neuromuscular control</li> <li>○ Return to sport/work</li> </ul>
<b>PRECAUTIONS</b>	<p>Post-activity soreness should resolve within 24 hours          Avoid post activity swelling</p>
<b>RANGE OF MOTION EXERCISES</b>	<ul style="list-style-type: none"> <li>○ Continue with flexibility exercises from previous phase</li> <li>○ Gentle end range stretching</li> <li>○ LE and core flexibility</li> <li>○ Mobilizations as needed</li> </ul>
<b>SUGGESTED THERAPEUTIC EXERCISES</b>	<ul style="list-style-type: none"> <li>○ Continue phase 3 activities. Progress with resistance/load.</li> <li>○ UE- ok to initiate strengthening program, minimize overhead activities. Pushup progression, advance cuff &amp; biceps strengthening</li> <li>○ Sport specific- ok to begin overhead sport specific activities. Throwers begin interval throwing program</li> <li>○ Progress rhythmic stabilization &amp; manual strengthening to long moment arms &amp; distal resistance. Progress PNF exercises</li> <li>○ UE plyometrics- begin 2 arm and progress to unilateral &amp; overhead, endurance wall dribbles, heavy full kinetic chain activities</li> </ul>
<b>CARDIOVASCULAR EXERCISE</b>	Progress to baseline
<b>PROGRESSION CRITERIA- RETURN</b>	<ul style="list-style-type: none"> <li>○ Normal kinematics of GH &amp; ST joints</li> <li>○ Full painless active &amp; passive ROM</li> </ul>

TO SPORT	<ul style="list-style-type: none"><li>○ Strength 90% contralateral</li><li>○ No pain/discomfort after activity</li><li>○ Completion of sport specific/throwing program</li><li>○ Physician clearance</li></ul>
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