



*Orthopedic Surgery, Sports Medicine & Arthroscopy Specialists*

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### REHABILITATION PROTOCOL- Biceps tenodesis

The rehabilitation guidelines are presented in a criterion based progression program. General time frames are given for reference to the average, but 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. It should not 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. The therapist should consult the referring physician with any questions or concerns.

Special attention must be given to impairments that caused the initial problem. For example, if the patient is s/p partial medial meniscectomy and they have a varus alignment, post-operative rehabilitation should include correcting muscle imbalances or postures that create medial compartment stress.

### **INDIVIDUAL CONSIDERATIONS: S/p**

### **PHASE 1- Surgery to 2 weeks**

REHAB GOALS	<ol style="list-style-type: none"> <li>1. Reduce pain and inflammation</li> <li>2. Regain range of motion</li> </ol>
PRECAUTIONS	<ol style="list-style-type: none"> <li>1. Sling immobilization for 2 weeks. Can remove for bathing &amp; exercises</li> <li>2. ROM/precautions: Extension to 0 and ER to 45 for first 4 weeks.</li> <li>3. No resistive biceps exercises for 3 months</li> <li>4. Cryocuff 3-5 times per day for 20 minutes and ice after every therapy session once splint removed</li> </ol>
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> <li>○ Shoulder passive ROM in all planes with elbow slightly flexed</li> <li>○ Supported Codman's exercises</li> <li>○ Active wrist, hand ROM</li> <li>○ Passive elbow flexion/extension and forearm supination/pronation</li> </ul>
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> <li>○ As above</li> <li>○ Shoulder shrugs with bent elbow</li> <li>○ Gripping</li> <li>○ Scapular PNF, scapular retraction &amp; clocks with bent elbow</li> </ul>
CARDIOVASCULAR EXERCISE	Stationary bike at one week, minimize excessive perspiration in surgical wounds
PROGRESSION CRITERIA	<ul style="list-style-type: none"> <li>○ Minimal/no pain</li> <li>○ Wound healing</li> </ul>

**PHASE 2- 3-6weeks**

REHAB GOALS	<ol style="list-style-type: none"> <li>1. Full passive ROM, gradual restoration of active ROM</li> <li>2. Minimize pain and swelling</li> </ol>
PRECAUTIONS	<ol style="list-style-type: none"> <li>1. ROM/precautions: Extension to 0 and ER to 45 for first 4 weeks.</li> <li>2. No resistive biceps exercises for 3 months</li> <li>3. Cryocuff 3-5 times per day for 20 minutes and ice after every therapy session</li> <li>4. Discontinue sling after week 2</li> </ol>
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> <li>○ Continue phase 1 exercises</li> <li>○ Progress from passive to active assist to active ROM in all planes (wand, table slides, pulleys flexion/scaption, wall climbs)</li> <li>○ Lawn chair progression ROM from supine to sitting</li> <li>○ Posterior capsule stretching as needed</li> <li>○ Ok to begin active ROM elbow flexion/extension &amp; forearm supination/pronation</li> </ul>
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> <li>○ Continue phase 1 exercises</li> <li>○ Submax isometrics arm at side for cuff, deltoid</li> <li>○ Manual scapular resistive exercises side lying, active punches</li> <li>○ Prone row &amp; extension by side</li> <li>○ Scapular PNF, rhythmic stabilizations, ER/IR arm supported, 90 flexion</li> <li>○ Non-weight bearing UE core stability</li> <li>○ Begin LE exercises without heavy weight in operative arm</li> </ul>
CARDIOVASCULAR EXERCISE	Stationary bike increase resistance
PROGRESSION CRITERIA	<ul style="list-style-type: none"> <li>○ No swelling or pain</li> <li>○ Full, active ROM of shoulder</li> <li>○ Normal/minimal deficit in scapulohumeral rhythm</li> </ul>

**PHASE 3- 7-10 weeks postop**

REHAB GOALS	<ul style="list-style-type: none"> <li>○ Restore shoulder strength</li> <li>○ Normalize scapulothoracic kinematics</li> </ul>
PRECAUTIONS	<ul style="list-style-type: none"> <li>○ Continue ice post-therapy</li> <li>○ No biceps resistive exercises for 12 weeks</li> </ul>
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> <li>○ Continue exercises from phase 2.</li> <li>○ Pec stretches, sleeper stretches, LE and core flexibility</li> </ul>

<p><b>SUGGESTED THERAPEUTIC EXERCISES</b></p>	<ul style="list-style-type: none"> <li>○ Continue exercises from phase 2</li> <li>○ thrower’s exercises: ER/IR at 0 abduction (progress to IR/ER at 90 if no pain), scaption ER full can, rows into ER at 90 abduction seated on stability ball, lower trap seated on stability ball, elbow extension/triceps, wrist extension, wrist flexion, pronation, sleeper stretch, supine horizontal adduction stretch into IR, Prone horizontal abduction neutral/full ER at 100, prone row, Diagonal pattern (D2) flexion/extension</li> <li>○ Core-initiate UE weight bearing core stability</li> <li>○ UE- standing theraband strengthening- ER/IR at side, extension, rows to plane of body, resisted side lying ER with towel.</li> <li>○ Progress prone rotator cuff strengthening- palm down to thumb up, prone rowing</li> <li>○ Isotonic active flexion/scaption/abduction/D2 to standing when able to perform without shoulder hiking. Limit flexion/scaption/abduction to 90, thumb up</li> <li>○ Lower extremity sport specific drills</li> <li>○ Body blade, rhythmic stabilizations at varying angles</li> </ul>
<p><b>CARDIOVASCULAR EXERCISE</b></p>	<p>Stationary bike increasing resistance, elliptical, stairmaster, treadmill walking</p>
<p><b>PROGRESSION CRITERIA</b></p>	<ul style="list-style-type: none"> <li>○ Pain free ROM</li> <li>○ Normal scapulohumeral rhythm</li> <li>○ Painless rotator cuff testing at 0 deg abduction</li> </ul>

**PHASE 4- 11-14 weeks postop**

<p><b>REHAB GOALS</b></p>	<ul style="list-style-type: none"> <li>○ Full shoulder strength</li> <li>○ Throwing program at 12 wks</li> </ul>
<p><b>PRECAUTIONS</b></p>	<p>Post-activity soreness should resolve within 24 hours Avoid post activity swelling</p>
<p><b>RANGE OF MOTION EXERCISES</b></p>	<ul style="list-style-type: none"> <li>○ Continue with flexibility exercises from previous phase</li> <li>○ LE and core flexibility</li> </ul>
<p><b>SUGGESTED THERAPEUTIC EXERCISES</b></p>	<ul style="list-style-type: none"> <li>○ Continue phase 3 activities, progress with weight/resistance</li> <li>○ Ok to begin resisted elbow flexion, supination after week 12</li> <li>○ Incorporate eccentric strengthening of cuff, scapula</li> <li>○ UE- can return to gym exercises. Begin &lt;50% of presurgical weight, avoid full lock out of elbows</li> </ul>
<p><b>CARDIOVASCULAR EXERCISE</b></p>	<p>Continue from phase 3, week 13-walk/run progression</p>

<b>PROGRESSION CRITERIA- RETURN TO WORK/SPORT</b>	<ul style="list-style-type: none"> <li>○ Full passive, active GH ROM</li> <li>○ No pain or swelling</li> <li>○ Strength 85% of contralateral</li> </ul>
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**PHASE 5- 15+ weeks postop**

<b>REHAB GOALS</b>	<ul style="list-style-type: none"> <li>○ Full shoulder strength and ROM</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>○ LE and core flexibility</li> </ul>
<b>SUGGESTED THERAPEUTIC EXERCISES</b>	<ul style="list-style-type: none"> <li>○ Continue phase 4 activities, progress with weight/resistance</li> <li>○ Plyometrics: progress from two arm/short lever/below 90 to single arm/long lever/above 90</li> <li>○ Sport specific activities ok to start</li> <li>○ Throwers- begin throwing progression</li> </ul>
<b>CARDIOVASCULAR EXERCISE</b>	<p>Progress to baseline</p>
<b>PROGRESSION CRITERIA- RETURN TO WORK/SPORT</b>	<ul style="list-style-type: none"> <li>○ Full passive, active GH ROM</li> <li>○ No pain or swelling</li> <li>○ Strength 90% of contralateral with rotator cuff ratio 70%</li> <li>○ Throwers-completion of throwing program</li> <li>○ Completion of sport/work specific program</li> </ul>