

This rehabilitation program is designed to return the individual to their full activities as quickly and safely as possible, following biceps tenodesis. Modifications to this guideline may be necessary dependent on physician specific instruction or other procedures performed. This evidence-based guideline is criterion-based; time frames and visits in each phase will vary depending on many factors. The therapist may modify the program appropriately depending on the individual's goals for activity following this surgery.

This guideline is intended to provide the treating clinician with a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post-operative care based on exam/treatment findings, individual progress, and/or the presence of concomitant procedures or post-operative complications. If the clinician should have questions regarding post-operative progression, they should contact the referring physician.

Precautions:

- An immobilizer will be used for approximately 4 weeks per the surgeon's instruction. Okay to remove for treatment/exercise.
- If patient has a concomitant injury/repair treatment will vary- consult with surgeon.

Phase	Suggested Interventions	Goals/Milestones for Progression
<p>Phase I Weeks 0-4</p>	<p><i>Specific Instructions:</i></p> <ul style="list-style-type: none"> • Use immobilizer all the time except for performing exercises and hygiene • PT ordered per physician discretion <p><i>Suggested Exercises:</i></p> <ul style="list-style-type: none"> • Shoulder Pendulums • PROM shoulder all planes as tolerated <ul style="list-style-type: none"> - Place towel roll under elbow to avoid shoulder extension • PROM elbow flexion/extension, pronation/supination • Cervical spine stretching <ul style="list-style-type: none"> - Upper Trapezius, Levator Scapulae, Scalenes • Posture training <ul style="list-style-type: none"> - Scapular glides - Scapular retractions • AROM wrist and hand, Stress ball squeezes • Maintain cardiovascular health using walking, exercise bike <p><i>Modalities</i></p> <ul style="list-style-type: none"> • Ice, IFC (control pain and inflammation) <p><i>Mobilization</i></p> <ul style="list-style-type: none"> • Thoracic Spine and costovertebral joints • Begin gentle scar mobilization • Shoulder mobilizations after 2 weeks 	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> 1. Initiate PROM 2. Pain control 3. Edema control <p>AVOID:</p> <ol style="list-style-type: none"> 1. AROM of elbow or shoulder x4 weeks 2. Shoulder external rotation beyond 40 degrees. 3. Shoulder extension or horizontal abduction past neutral. 4. Lifting 5. Friction massage to the proximal biceps/tenodesis site. <p><i>Criteria to Advance to Next Phase:</i></p> <ol style="list-style-type: none"> 1. Healing as expected 2. Full PROM to elbow and shoulder

<p>Phase II Weeks 4-6</p>	<p><i>Suggested Exercises:</i></p> <p>Shoulder</p> <ul style="list-style-type: none"> • AAROM dowel/table slides/rail or wall slides → AROM • Pulleys (Normal Scapulohumeral Rhythm must exist to decrease Impingement) • AROM <ul style="list-style-type: none"> ○ Supine flexion, standing scaption, shoulder ER in neutral, shoulder ER at 90 degrees (support on table) <p>Elbow/hand:</p> <ul style="list-style-type: none"> ○ Sub-max isometrics elbow flex/ext in neutral shoulder position ○ Initiate isometric exercises sub-maximal contraction ○ AAROM of elbow flexion/extension, pronation/supination → AROM • Maintain cardiovascular health using walking, exercise bike • LE and trunk exercises to be initiated (no bouncing) <p><i>Modalities:</i></p> <ul style="list-style-type: none"> • Ice, IFC (control pain and inflammation) <p><i>Mobilizations:</i></p> <ul style="list-style-type: none"> • Joint mobilizations where restricted: • Glenohumeral/scapulothoracic/trunk (PA/Inferior Add in neutral, mild ER, and mild IR) • Posterior capsule stretching 	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> 1. Pain control 2. Edema control 3. Improve proper physiologic movement 4. Full AROM of shoulder and elbow 5. Begin light waist-level functional activities <p>AVOID:</p> <ol style="list-style-type: none"> 1. Lifting 2. Loading biceps <ol style="list-style-type: none"> a. NO flex/supinate elbow 3. Friction massage to repair 4. Excessive stretching 5. Running 6. Distractive forces on shoulder <p><i>Criteria to Advance to Next Phase:</i></p> <ol style="list-style-type: none"> 1. Full AROM shoulder and elbow 2. Proper scapular mechanics
<p>Phase III Weeks 6-8</p>	<p><i>Suggested Exercises:</i></p> <ul style="list-style-type: none"> • Continue interventions from previous phase including shoulder and elbow PROM and AROM • Continue shoulder isometrics <ul style="list-style-type: none"> ○ Progress resistance as tolerated • Add wall slides as tolerated in the scapular plane • UBE (elbow below shoulder height with minimal reach and resistance) • Initiate biceps strengthening, beginning with light resistance <ul style="list-style-type: none"> ○ Resisted biceps curls ○ Resisted supination ○ Resisted triceps extension 	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> 1. Normal strength, endurance and neuromuscular control 2. Return chest-level activities <p>AVOID:</p> <ol style="list-style-type: none"> 1. Strengthening/functional activities until near full ROM achieved 2. Long-lever arm resistance for elbow flexion and supination <p><i>Criteria to Advance to Next Phase:</i></p>

	<ul style="list-style-type: none"> ○ Resisted wrist extension/wrist flexion ● Rhythmic stabilizations for the scapular muscles ● Begin closed chain strengthening as tolerated 	<ol style="list-style-type: none"> 1. Full, non-painful AROM to elbow and shoulder 2. Good tolerance to strengthening without increase in symptoms
<p>Phase IV Weeks 8-12</p>	<p><i>Suggested Exercise:</i></p> <ul style="list-style-type: none"> ● Continue phase I-III interventions as needed ● Focus on proper technique with quality, uncompensated motion ● Focus on low load, high repetitions (30-50). Open and closed chain strengthening ● Progress stabilization exercises to standing for the scapular muscles ● Prone scapular and shoulder strengthening (I, T, and Y). ● Prone rowing (30/45/90 degrees abduction) ● Push-up plus progression (wall, counter, knees on floor, floor) ● Resisted ER/IR in neutral and elevated positions ● Side-lying ER ● May begin weightlifting overhead, but avoid military press and wide grip bench press ● Body blade in all planes ● Resisted PNF diagonals ● Maintain cardiovascular health using walking, exercise bike, consider light jogging if indicated. <ul style="list-style-type: none"> ○ No swimming 	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> 1. Maintain full AROM 2. Improve muscular strength, power, and endurance 3. Initiation of functional exercises 4. Enhanced muscular strength, power, and endurance 5. Maintained shoulder stability <p>AVOID:</p> <ol style="list-style-type: none"> 1. Pain with elbow and shoulder motion 2. Swimming <p><i>Criteria to Advance to Next Phase:</i></p> <ol style="list-style-type: none"> 1. Full uncompensated movement 2. Satisfactory static stability
<p>Phase V Weeks 12-16 Return to Sport</p>	<p><i>Suggested Exercise</i></p> <ul style="list-style-type: none"> ● Initiate plyometric exercises (below shoulder level progress to overhead) <ul style="list-style-type: none"> ○ Weighted ball drop/catch in standing ○ Chest pass ○ Overhead ball dribble against wall ○ Prone 90/90 ball drop/catch ○ Prone Y ball drop/catch ○ Prone T ball drop catch ● Add gym exercises, multi-joint/compound strengthening ● Initiate sport specific training/job related tasks ● Interval throwing program ● Swimming/tennis/lifting/carrying 	<p><i>Goals of Phase:</i></p> <ol style="list-style-type: none"> 1. Progress strength and function of involved upper extremity 2. No pain or tenderness 3. Return to normal sport or work activities <p>AVOID:</p> <ol style="list-style-type: none"> 1. Excessive anterior capsule stress <p><i>Suggested Criteria for Discharge:</i></p> <ol style="list-style-type: none"> 1. No pain with progressive strengthening

		<ol style="list-style-type: none">2. 90% strength compared to uninvolved side3. WNL field testing4. Low level to no disability with outcome measures
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