



Imran Ashraf, MD
Rehabilitation Guidelines for Bicep Tenodesis

The rehabilitation guidelines are presented in a criterion based progression. 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, and injury severity. Specific time frames, restrictions and precautions may also be given to protect healing tissues and the surgical repair/reconstruction.

PHASE I (Surgery to 4-6 weeks)

APPOINTMENTS	Meet with physician at 1 and 6 weeks post-op Begin physical therapy 7-10 days post-op. Continue 1-2x per week
REHAB GOALS	1. Protection of the post-surgical shoulder 2. Activation of the stabilizing muscles of the gleno-humeral and scapulo-thoracic joints
PRECAUTIONS	1. Sling immobilization required for soft tissue healing 2. Hypersensitivity in axillary nerve distribution is a common occurrence 3. No bicep tension for 6 weeks to protect repaired tissues - this includes avoiding long lever arm flexion ROM, resisted: supination, elbow flexion or shoulder flexion 4. Limit external rotation to 40 degrees for the first 4 weeks 5. No extension or horizontal extension past body for 4 weeks
ROM EXERCISES (Please do not exceed the ROM specified for each exercise and time period)	- Gentle A/AAROM for elbow and wrist - Pain free, gentle PROM for shoulder flexion, abduction, internal rotation and external rotation to neutral
SUGGESTED THERAPEUTIC EXERCISE	Begin week 3, sub-maximal shoulder isometrics for IR/ER and abduction/adduction Hand gripping Cervical spine and scapular AROM Desensitization techniques for axillary nerve distribution
CARDIOVASCULAR FITNESS	Walking, stationary bike - sling on. No treadmill. (Avoid running and jumping due to the distractive forces that can occur at landing)

PHASE II (begin at 6 to 8 weeks)

APPOINTMENTS	Meet with physician 6 weeks post-op Physical therapy 1 x every 1-2 weeks
--------------	---

REHAB GOALS	1. Full AROM 2. Full rotator cuff strength in a neutral position 3.
PRECAUTIONS	1. Begin bicep PREs very gradually – this includes avoiding long lever arm flexion ROM, resisted: supination, elbow flexion or shoulder flexion 2. No PROM for abduction and external rotation or extension
ROM EXERCISES (Please do not exceed the ROM specified for each exercise and time period)	• Shoulder AROM • Shoulder PROM for flexion or abduction if needed
SUGGESTED THERAPEUTIC EXERCISE	• Scapular squeezes • Internal and external rotation in neutral with thera-band resistance – make sure patient is not supinating with ER movement • Ball squeezes
CARDIOVASCULAR FITNESS	Walking, stationary bike without using arms (No Air dyne.) No treadmill, swimming or running.

PHASE III (begin at 8 weeks and continue until Phase III goals are met ~ 12 weeks)

APPOINTMENTS	Meet with physician at 12 weeks post op Physical therapy 1-2x weeks
PHASE III GOALS	1. Full AROM in all cardinal planes with normal scapulo-humeral movement 2. 5/5 rotator cuff strength at 90° abduction in the scapular plane 3. 5/5 peri-scapular strength
PRECAUTIONS	1. All exercises and activities to remain non-provocative and low to medium velocity 2. Avoid activities where there is a higher risk for falling or outside forces to be applied to the arm 3. No Swimming, throwing or sports
SUGGESTED THERAPEUTIC EXERCISE	<u>Motion</u> Posterior glides if posterior capsule tightness is present <u>Strength and Stabilization</u> Flexion in prone, or abduction in prone, full can ex, D1 and D2 diagonals in standing TB/cable column/ dumbbell (light resistance/high rep) IR/ER in 90 abduction and rowing Balance board in push-up position (with RS), prone Swiss ball walkouts, rapid alternating movements in supine D2 diagonal. CKC stabilization with narrow base of support
CARDIOVASCULAR FITNESS	Walking, biking, Stairmaster and running (if they have met PII criteria) NO SWIMMING
PROGRESSION CRITERIA	Patient may progress to Phase IV if they have met the above stated goals and have no apprehension or impingement signs

PHASE IV (begin when goals and criteria from Phase III are met ~12 wks)

APPOINTMENTS	Meet with physician at 18 weeks post-op Physical therapy 1x every 3 weeks
PHASE IV GOALS	1. Patient to demonstrate stability with higher velocity movements and change of direction movements 2. 5/5 rotator cuff strength with multiple repetition testing at 90° abduction in the scapular plane 3. Full multi-plane AROM
PRECAUTIONS	1. Progress gradually into provocative exercises by beginning with low velocity, known movement patterns
SUGGESTED THERAPEUTIC EXERCISE	<u>Motion</u> Posterior glides if posterior capsule tightness is present <u>Strength and Stabilization</u> Dumbbell and medicine ball exercises that incorporate trunk rotation and control with rotator cuff strengthening at 90 degrees abduction. Begin working towards more functional activities by emphasizing core and hip strength and control with shoulder exercises TB/cable column/ dumbbell IR/ER in 90 degrees abduction and rowing Higher velocity strengthening and control, such as the inertial, plyometrics, rapid theraband drills. Plyometrics should start with 2 hands below shoulder height and progress to overhead, then back to below shoulder with one hand, progressing again to overhead
CARDIOVASCULAR FITNESS	Walking, biking, Stairmaster and running (if they have met PII criteria.) NO SWIMMING
PROGRESSION CRITERIA	Patient may progress to Phase V if they have met the above stated goals and have no apprehension or impingement signs

PHASE V (begin when goals and criteria from Phase IV are met ~20 wks)

APPOINTMENTS	Meet with physician at 24 weeks post-op Physical therapy 1x every 2-3 weeks
PHASE V GOALS	1. Patient to demonstrate stability with higher velocity movements and change of direction movements that replicate sport specific patterns (including swimming, throwing, etc.) 2. No apprehension or instability with high velocity overhead movements 3. Improve core and hip strength and mobility to eliminate any compensatory stresses to the shoulder 4. Work capacity cardiovascular endurance for specific sport or work demands

PRECAUTIONS	1. Progress gradually into sport specific movement patterns
SUGGESTED THERAPEUTIC EXERCISE	<u>Motion</u> Posterior glides if posterior capsule tightness is present <u>Strength and Stabilization</u> Dumbbell and medicine ball exercises that incorporate trunk rotation and control with rotator cuff strengthening at 90degrees abduction and higher velocities. Begin working towards more sport specific activities Initiate throwing program, overhead racquet program or return to swimming program depending on the athlete's sport High velocity strengthening and dynamic control, such as the inertial, plyometrics, rapid theraband drills
CARDIOVASCULAR FITNESS	Design to use sport specific energy systems
PROGRESSION CRITERIA	Patient may return to sport after receiving clearance from the orthopedic surgeon and the physical therapist/athletic trainer