

POST-OPERATIVE SHOULDER BICEPS TENODESIS GUIDELINES

The following post-operative shoulder biceps tenodesis guidelines were developed by Hospital for Special Surgery Rehabilitation and are categorized into five phases with the ultimate goal for returning the overhead athlete to full competition. They can be used for patients undergoing a variety of anterior stabilization procedures with attention given to exact location of repair and any concomitant procedures. It is important that full range of motion is restored while respecting soft tissue healing. Classification and progression are both criteria-based and time based due to the healing constraints of the human body. The first phase is focused on soft tissue healing and maintenance of pain-free ROM. Phases two and three are focused on building foundational strength and stability which will allow the athlete to progress to phase four which includes plyometric exercises. With the completion of phase four the athlete will be able to start the final phase which includes interval sports programs. Cardiovascular endurance, hip and core strengthening should be addressed through the rehabilitation process. The clinician should use their skilled judgment and decision making as the athlete advances as all progression may not be linear.



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POST-OPERATIVE SHOULDER BICEPS TENODESIS GUIDELINES

Phase 1: Recovery (Week 1)

PRECAUTIONS

- Sling for 1-2 weeks
 - Avoid stress on anterior shoulder joint
 - No bicep strengthening for 8 weeks
 - No forced stretching
 - Avoid painful activities
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ASSESSMENT

- Quick Disabilities of Arm, Shoulder & Hand (Quick DASH)
 - American Shoulder and Elbow Surgeons Shoulder Score (ASES)
 - Numeric Pain Rating Scale (NPRS)
 - PROM
 - Palpation
 - Static scapular assessment (Kibbler Grading)
 - Cervical mobility
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TREATMENT RECOMMENDATIONS

- Gripping and hand AROM
- Postural awareness
- Wrist AROM: flexion/extension/pronation/supination

Range of Motion:

- Week 1: **external rotation (ER) to 60°, elevation in scapular plane 90°**
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CRITERIA FOR ADVANCEMENT

- Decreasing discomfort at rest
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EMPHASIZE

- Protection of repair
- Reduction of tissue irritability
- Prevention of muscle atrophy

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Phase 2: Intermediate (Weeks 2-5)

PRECAUTIONS	<ul style="list-style-type: none">▪ Sling not required▪ Monitor for shoulder stiffness▪ Target full PROM, then progress to AAROM
ASSESSMENT	<ul style="list-style-type: none">▪ PROM▪ Palpation▪ Static/dynamic scapular assessment (Kibbler grading)▪ Cervical mobility▪ Scapular static assessment
TREATMENT RECOMMENDATIONS	ROM Goals
	Week 2-3 <ul style="list-style-type: none">▪ Elevation in scapular plane: 150°▪ ER in scapular plane: 30°▪ Internal rotation (IR) in scapular plane: 45°
	Week 4 <ul style="list-style-type: none">▪ Elevation in scapular plane: 160°▪ ER in scapular plane: 50°▪ IR in scapular plane: 50°
	Week 5-6 <ul style="list-style-type: none">▪ Elevation in scapular plane: 175°▪ ER in scapular plane: 60°▪ IR in scapular plane: 60°
	Abduction <ul style="list-style-type: none">▪ 0°-90° first 3 weeks (gentle motion)
	Exercises
	Week 2 <ul style="list-style-type: none">Scapular Isometrics<ul style="list-style-type: none">▪ Elbow AROM▪ Shoulder AAROM
	Week 3 <ul style="list-style-type: none">RC Isometrics<ul style="list-style-type: none">▪ Rhythmic stabilization ER/IR with PT
	Week 4 <ul style="list-style-type: none">Continue RC Isometrics<ul style="list-style-type: none">▪ Elastic band row
	Week 5-6 <ul style="list-style-type: none">RC Isotonics if arthroscopic; if open start week 3<ul style="list-style-type: none">▪ Scapular strengthening<ul style="list-style-type: none">○ Prone row, prone extension
CRITERIA FOR ADVANCEMENT	<ul style="list-style-type: none">▪ No pain at rest▪ 120° shoulder elevation PROM; 45° ER in scapular plane▪ Tolerance of scapular and RC exercises without discomfort
EMPHASIZE	<ul style="list-style-type: none">▪ Reduction of tissue irritability▪ Activation of rotator cuff (RC) and scapular stabilizers

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Phase 3: Advanced (Weeks 6-10)

PRECAUTIONS	<ul style="list-style-type: none">▪ No forced PROM▪ Avoid undue stress to Biceps tendon▪ No painful activities
ASSESSMENT	<ul style="list-style-type: none">▪ PROM▪ AROM▪ Palpation▪ Static/dynamic scapular assessment (Kibbler grading)▪ Cervical mobility▪ Scapular static/dynamic assessment▪ Grip strength
TREATMENT RECOMMENDATIONS	ROM Goals
	Week 6-7 <ul style="list-style-type: none">▪ Initiate light and <u>PAIN FREE</u> ER at 90° shoulder abduction<ul style="list-style-type: none">○ Progress to 30°
	Week 7-9 <ul style="list-style-type: none">▪ Flexion 160°-180°▪ ER at 90° abduction: 75°-90°▪ IR at 90° abduction: 70°-75°
	Week 9-12 <ul style="list-style-type: none">▪ Shoulder Flexion 180°▪ ER at 90° abduction: 100°-115°
	Flexibility <ul style="list-style-type: none">▪ Shoulder: Posterior shoulder stretch at PT discretion
	Exercises <ul style="list-style-type: none">▪ Progress above▪ Throwers Ten▪ Advanced Throwers Ten▪ Scapular stabilization<ul style="list-style-type: none">○ Closed chain quadruped double arm protraction○ Prone “T, I” and progress to “Y” and “W” as ROM allows▪ End range stabilization using exercise blade/perturbations▪ Shoulder endurance exercise▪ UE ergometry (if ROM allows)▪ Core strength/kinetic linking▪ Weeks 10-16<ul style="list-style-type: none">○ 90°/90° ER/IR strengthening
CRITERIA FOR ADVANCEMENT	<ul style="list-style-type: none">▪ Full shoulder AROM▪ 4/5 strength below shoulder height
EMPHASIZE	<ul style="list-style-type: none">▪ Full P/AROM▪ Restoration of scapular and RC muscle balance and endurance

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Phase 4: Pylometric (Weeks 11-16)

PRECAUTIONS	<ul style="list-style-type: none"> ▪ No painful activities
ASSESSMENT	<ul style="list-style-type: none"> ▪ Quick DASH ▪ ASES ▪ NPRS ▪ PROM ▪ AROM ▪ Palpation ▪ Static/dynamic scapular assessment (Kibbler grading) ▪ Cervical mobility ▪ Elbow PROM/AROM ▪ Scapular static/dynamic assessment ▪ Shoulder MMT ▪ Grip Strength
TREATMENT RECOMMENDATIONS	<ul style="list-style-type: none"> ▪ Continue shoulder RC and scapular stabilization exercises ▪ Continue and progress all Advanced Thrower's Ten exercises ▪ Initiate pylometrics as tolerated <ul style="list-style-type: none"> ○ Pylometric progression (over 4 week period) <ul style="list-style-type: none"> ▪ Double hand chest pass ▪ Double hand overhead soccer pass ▪ Double hand chops ▪ Single hand IR at 0° abduction ▪ Eccentric catch ▪ Single hand 90/90 IR ○ Endurance progression <ul style="list-style-type: none"> ▪ Double hand overhead wall taps ▪ Single arm 90/90 wall taps ▪ Single arm 12 o'clock to 3 o'clock wall taps ▪ Exercise blade in multiple sessions
CRITERIA FOR ADVANCEMENT	<ul style="list-style-type: none"> ▪ Full shoulder AROM ▪ Symptom free progression through pylometrics and endurance program
EMPHASIZE	<ul style="list-style-type: none"> ▪ Shoulder flexibility, strength and endurance ▪ Pain free plyometrics