

Bankart Repair/Anterior Capsulorrhaphy Rehabilitation Guideline

This rehabilitation program is designed to return the individual to their activities as quickly and safely as possible. It is designed for rehabilitation following Arthroscopic Bankart repair/Anterior Capsulorrhaphy procedure. Modifications to this guideline may be necessary dependent on physician specific instruction, location of repair, concomitant injuries or procedures performed. This evidence-based Arthroscopic Bankart Repair/Anterior Capsulorrhaphy Rehabilitation Guidelines criterion-based; time frames and visits in each phase will vary depending on many factors- including patient demographics, goals, and individual progress. This guideline is designed to progress the individual through rehabilitation to full sport/ activity participation. The therapist may modify the program appropriately depending on the individual's goals for activity following Arthroscopic Bankart repair/Anterior Capsulorrhaphy procedure.

This guideline is intended to provide the treating clinician 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.

General Guidelines/Precautions:

- The capsule is stressed with external rotation; thus, external rotation must be limited during the early phases of rehabilitation. Do not allow or perform ROM/stretching beyond goals; especially external rotation, both in neutral or abducted.
- Arthroscopic procedure: early rotator cuff strengthening can begin and progress quickly.
- Open repair procedure: subscapularis may be detached and reattached for better exposure of the glenohumeral joint, thus protection for 4-6 weeks is recommended including avoiding internal rotation strengthening.
- Avoid joint mobilizations in patients with multi-directional instability.
- Active Assisted ROM and Isometrics initiated at 4 weeks.
- Active ROM initiated at 6 weeks, per Physician.
- Strengthening initiated at 10 weeks, per Physician.
- Return to Play for non-contact athletes around 4 months (per MD discretion)
- Return to Play for contact athletes around 6 months (per MD discretion)

Arthroscopic Anterior Bankart Repair/ Anterior Capsulorrhaphy Rehabilitation Guideline (16-24 weeks to expected D/C)

WEEK	SUGGESTED INTERVENTIONS	GOALS/MILESTONES FOR PROGRESSION
<p>Phase I <i>Patient Education Phase</i></p> <p><i>Pre-operative Phase</i></p> <p><i>1-3 Expected Visits</i></p>	<p>Discuss:</p> <ul style="list-style-type: none"> Anatomy, existing pathology, post-op rehab schedule, bracing, and expected progressions post-operatively. <p>Instruct on Pre-op exercises:</p> <ul style="list-style-type: none"> Strength and ROM progressions as tolerated. <p>Immediate Post-Operative instructions:</p> <ul style="list-style-type: none"> Maintain use of sling at all times until physician instructs to d/c. Sling should be worn for 4-6 weeks; sleeping with splint in place for 6 weeks; only able to remove splint for light activities in a controlled environment (keep arm by side). Avoid getting incision sites wet for 48 hours 	<p>Goals of Phase:</p> <ul style="list-style-type: none"> Improve ROM and strength prior to surgery. Appropriate expectation framework for post-operative rehabilitation <p>Criteria to Advance to Next Phase:</p> <ul style="list-style-type: none"> Progress to Phase II post-operatively
<p>Phase II <i>Maximum Protection Phase</i></p> <p><i>0-2 Weeks</i></p> <p><i>1-4 Expected Visits</i></p>	<p>Specific Instructions:</p> <ul style="list-style-type: none"> Sutures removed at 10-14 days (per MD discretion). Maintain use of sling at all times until physician instructs to d/c at approx. 4-6 weeks s/p Sleep in immobilizer. Reclined position is most comfortable with pillow support to the posterior gleno-humeral joint. No carrying or lifting of any objects No excessive stretching No supporting of body weight by hands Keep incisions clean and dry No active ER, extension or abduction to decrease stress to anterior GHJ <p>Suggested Treatments:</p> <ul style="list-style-type: none"> Modalities: <ul style="list-style-type: none"> Pain control modalities as indicated Continue icing 3x per day or more. No heat until 1 week s/p Range of Motion: <ul style="list-style-type: none"> Wrist & hand AROM PROM: (ROM done by therapist) <ul style="list-style-type: none"> Elbow PROM to end ranges to maintain mobility Flexion 70-90 deg. by week 2 Scaption to 90 deg. by week 2 ER 0-10 degrees in scapular plane by week 2 IR to chest wall/ 45 degrees <p>Exercise Examples:</p> <ul style="list-style-type: none"> Hand gripping exercises (putty, squeeze balls) Pendulums Scapular isometrics (shoulder shrugs/ scapular retractions 2-3x per day) 	<p>Goals of Phase:</p> <ul style="list-style-type: none"> Provide environment of proper healing of repair Prevention of post-operative complications Retard muscle atrophy Improve PROM Diminish pain and inflammation Independence with home exercise program <p>Criteria to Advance to Next Phase:</p> <ul style="list-style-type: none"> Patient has met upward limits of PROM for this phase Patient is 2 weeks s/p
<p>Phase III <i>Protected Motion Phase</i></p> <p><i>3-5 Weeks</i></p> <p><i>6-9 Expected Visits</i></p>	<p>Specific Instructions:</p> <ul style="list-style-type: none"> No carrying or lifting of heavy objects Continue sleep in elevated position with sling until comfortable to lay flat Continue use of sling until physician discharge (approx. 4-6 weeks) Protect anterior capsule by avoiding active movement of ER and extension beyond neutral. No excessive ER, Extension or elevation <p>Suggested Treatments:</p> <ul style="list-style-type: none"> Modalities: <ul style="list-style-type: none"> Pain control modalities as needed Manual Therapy: <ul style="list-style-type: none"> Gentle Posterior GHJ mobilizations Grades I & II for pain-relief only until after 6 weeks or if PROM goals lag behind. Avoid Anterior joint mobilizations for 8 weeks PROM: <ul style="list-style-type: none"> Continue to progress PROM as tolerated <ul style="list-style-type: none"> Flexion to 90 degrees by week 4 Flexion to 145 degrees by week 6 Abduction to 90 degrees ER 15-20 degrees in scapular plane by week 4 IR 55-60 degrees in scapular plane by week (Continued on next page) 	<p>Goals of Phase:</p> <ul style="list-style-type: none"> Prevent negative effects of immobilization. Provide environment of proper healing for repair Promote dynamic shoulder and scapular stability Diminish pain and inflammation <p>Criteria to Advance to Next Phase:</p> <ul style="list-style-type: none"> Patient has met upward limits of PROM for this phase Patient has met upward limits of AAROM for this phase

Arthroscopic Anterior Bankart Repair/ Anterior Capsulorrhaphy Rehabilitation Guideline (16-24 weeks to expected D/C)

WEEK	SUGGESTED INTERVENTIONS	GOALS/MILESTONES FOR PROGRESSION
<p>Phase III</p>	<p>(Continued from previous page)</p> <p>Suggested Treatments:</p> <ul style="list-style-type: none"> • AAROM: <ul style="list-style-type: none"> • Flexion/ Extension progressions within PROM listed above • Shoulder elevation/ Abduction progressed as tolerated • ER/ IR progressed to 90 degrees of abduction at week 4 • Manual Therapy: <ul style="list-style-type: none"> • Maintain pain-free scapula-thoracic joint mobility <p>Exercise Examples:</p> <ul style="list-style-type: none"> • AAROM: <ul style="list-style-type: none"> • Wand, Pendulum or Pulleys as tolerated within guidelines above. Non-forceful, pain-free range • Submaximal and pain-free shoulder isometrics in scapular plane • Continue submaximal and pain-free scapular isometrics • Initiate rhythmic stabilization drills for IR/ ER • Scapular Clocks • Prone scapular retractions with rowing or extensions • May initiate pec minor stretches at 6 weeks • Avoid closed chain exercises until 10 weeks 	
<p>Phase IV <i>Motion and Muscle Activation Phase</i></p> <p>6-12 Weeks</p> <p>12-18 Expected visits</p>	<p>Specific Instructions:</p> <ul style="list-style-type: none"> • Continue previous exercises • Continue use of ice/ heat as needed <p>Suggested Treatments:</p> <ul style="list-style-type: none"> • Manual Therapy: <ul style="list-style-type: none"> • May initiate GHJ mobilizations to improve ROM • ROM: <ul style="list-style-type: none"> • Continue to progress as tolerated • Flexion 0-160 degrees by week 10 • ER 50-55 degrees in scapular plane by week 6 • ER may be progressed as tolerated to 90 degrees through week 10 (from scapular plane to 90 deg. abduction) • IR equal to opposite side (may have contralateral differences in overhead athletes) • AROM: <ul style="list-style-type: none"> • Initiated week 6 with no resistance to the shoulder • Flexion with attention to proper scapulo-thoracic control • ER may be progressed as tolerated (from scapular plane to 90 deg. abduction) • Strengthening: <ul style="list-style-type: none"> • May initiate light scapular and rotator cuff strength below shoulder height at 7-8 weeks <p>Exercise Examples:</p> <ul style="list-style-type: none"> • Continue with gleno-humeral rhythmic stabilization drills • Continue all stretching exercises • Side lying ER • Light Theratube exercises for cuff start at week 8 • Initiate throwers ten program with attention to proper scapular control • Weight bearing proprioceptive exercises only after 10 weeks • Strength training progressive external loading after week 10 <p>Other Activities:</p> <ul style="list-style-type: none"> • May initiate UBE at 7 weeks with light resistance 	<p>Goals of Phase:</p> <ul style="list-style-type: none"> • Full PROM expected by week 10 (90-100 deg. of ER at 90 degrees of abduction) • Preserve the integrity of the surgical repair • Increase functional activity without soft tissue irritation • Decrease pain and inflammation <p>Criteria to Advance to the Next Phase:</p> <ul style="list-style-type: none"> • Full and non-painful PROM • No pain or tenderness • No increased shoulder irritability with progressive resistive strength training program. • Clearance by MD to full activity and/or Throwers Program

Arthroscopic Anterior Bankart Repair/ Anterior Capsulorrhaphy Rehabilitation Guideline (16-24 weeks to expected D/C)

WEEK	SUGGESTED INTERVENTIONS	GOALS/MILESTONES FOR PROGRESSION
<p>Phase V <i>Advanced strengthening and eccentric control Phase</i></p> <p>13-24 Weeks</p> <p>12-18 Expected visits</p>	<p>Specific Instructions:</p> <ul style="list-style-type: none"> • Modifications of certain lifts to avoid stress to anterior capsule: <ul style="list-style-type: none"> • Bench press to neutral, no barbell to begin • No military pressing behind head • No lat pull downs behind head • Consider limiting or modifying back squat • Consider limiting depth for tricep dips <p>Suggested Treatments:</p> <ul style="list-style-type: none"> • Continue all strengthening & mobility exercises from prior phase • Encourage HEP progression and compliance • Continue to progress throwing motion as able (especially ER) • Resisted sport activity • Progressive Plyometric activities • Endurance training <p>Exercise Examples: (Refer to Overhead Athlete Rehabilitation Guideline)</p> <ul style="list-style-type: none"> • Pre-throwing drills • Progression of total body strengthening program • High speed band exercises • Weight bearing: Push-ups, push up with a plus • Plank progressions • End range rhythmic stabilizations in various phases of throwing motions • PNF patterns with bands, cable column, manual resistance • Plyometrics: trampoline plyo chest pass, side & overhead toss, 90/90 toss, 90/90 ball drop <p>Other Activities:</p> <ul style="list-style-type: none"> • Begin Interval Throwing Program or appropriate sport specific interval program 	<p>Goals of Phase:</p> <ul style="list-style-type: none"> • Establish and maintain full shoulder AROM. • Improve muscular strength, power and endurance to 80% compared bilaterally for IR/ER. • Maintain shoulder mobility • Progress back to functional activities • Ensure proper throwing mechanics with pre-throwing drills to reduce risk for re-injury <p>Criteria to Advance to Next Phase for overhead athlete: (Please refer to Overhead Athlete Rehabilitation Guideline)</p> <ul style="list-style-type: none"> • Full and non-painful PROM for overhead athlete: <ul style="list-style-type: none"> • Total PROM equal to opposite side for throwers • Normalized Lattisimus Dorsi Length for throwers • Normalized supine horizontal adduction with scapula stabilized • Full and non-painful AROM for overhead athlete: <ul style="list-style-type: none"> • Prone 90/90 ER at 85% of supine PROM ER • Equal back to wall flexion test • Muscular strength 75-80% of contralateral side • Minimum FOTO score of 90 • OH Athlete Screen score of 35/40
<p>Phase VI <i>Advanced Movement and Return to Activity Phase</i></p> <p>6+ Months</p> <p><i>**Depending on staffing models, patients may transition to their Athletic Trainer during this phase</i></p>	<p>Suggested Criteria for Return to Sport:</p> <ul style="list-style-type: none"> • Successful progression of interval throwing program to 180ft with no pain. • Consider throwing mechanics assessment • ER/IR Ratio >80% <ul style="list-style-type: none"> • Hand held dynamometry at 90° abduction • In neutral rotation • Quick DASH or Kerlin Jobe score • Successful completion of Return to Performance Program (if available). 	<p>Goals:</p> <ul style="list-style-type: none"> • Progression of interval throwing program to prepare for return to competitive throwing with proper throwing mechanics • Development of individualized maintenance program in preparation for discontinuation of formal rehabilitation.

Arthroscopic Anterior Bankart Repair/ Anterior Capsulorrhaphy Rehabilitation Guideline (16-24 weeks to expected D/C)

REFERENCES:

1. Dockery ML, Wright TW, LaStayo PC. Elec-tromyography of the shoulder: an analysis of passive modes of exercise. *Orthopedics*. 1998;21:1181-1184.
2. Kim SH, HA KI, Jung MW, Lim MS, Kim YM, Park JH. "Accelerated Rehabilitation after Arthroscopic Bankart Repair for Selected Cases: A Prospective Randomized Clinical Study." *Arthroscopy*. 2003;19(7):722-731.
3. Long JL, Ruberte Theile RA, Skendzel JG, et al. Activation of the shoulder musculature during pendulum exercises and light activities. *J Orthop Sports Phys Ther*. 2010 Apr;40(4):230-7
4. Tyler TF, Nicholas SJ, Seneviratne AM. (2006). The bankart lesion. In RC Manske (Ed.), *Postsurgical orthopedic sports rehabilitation knee and shoulder* (pp. 563-581). Missouri: Mosby Elsevier.
5. Moseley JB, Jobe FW, Pink M, Perry J, Tibone J. EMG analysis of the scapular muscles during a shoulder rehabilitation program. *American Journal of Sports Medicine*. 1992;20;128-134.
6. Townsend H, Jobe FW, Pink M, Perry J. Electromyographic analysis of the glenohumeral muscles during a baseball rehabilitation program. *American Journal of Sports Medicine*. 1991;19:264-272.
7. Manske RC, Davies GJ. Postrehabilitation outcomes of muscle power (torque-acceleration energy) in patients with selected shoulder dysfunctions. *Journal of Sports Rehab*. 2003;12(3):181-198.
8. Reinold MM, Gill TJ, Wilk KE, Andrews JR. Current concepts in the evaluation and treatment of the shoulder in overhead throwing athletes, part 2: injury prevention and treatment. *Sports Health*. 2010;2(2):101-115.
9. Stein DA, Jazrawi L, Bartolozzi AR. Arthroscopic stabilization of anterior shoulder instability: A review of the literature. *Arthroscopy*. 2002;18:912-924.
10. Itoi E, Hatakeyama Y, Urayama M, Pradhan RL, Kido T, Sato K. Position of immobilization after dislocation of the shoulder. A cadaveric study. *The Journal of Bone & Joint Surgery*. 1999;81:385-390.
11. Itoi E, Sashi R, Minagawa H, Shimizu T, Wakabayashi I, Sato K. Position of immobilization after dislocation of the glenohumeral joint: a study with use of magnetic resonance imaging. *The Journal of Bone & Joint Surgery*. 2001;83:661-667.
12. Wilk, KE, Macrina LC. Nonoperative and postoperative rehabilitation for injuries of the throwing shoulder. *Sports Med Arthrosc Rev*. 2014;22(2):137-150.
13. Wilk, KE, Obma P, Simpson III, CD, Cain EL, Dugas J, Andrews JR. Shoulder injuries in the overhead athlete. *J Orthop Sports Phys Ther*. 2009;39(2):38-54.