Post-Operative Rehabilitation Protocol: Arthroscopic Shoulder Stabilization

Criteria-based, evidence-informed progression after arthroscopic anterior capsulolabral (Bankart) repair

1. Purpose and Guiding Principles

This protocol guides physical therapists, athletic trainers and patients through rehabilitation after arthroscopic shoulder stabilization, most commonly anterior capsulolabral (Bankart) repair for recurrent anterior instability. It draws on Gaunt et al. (2010), Wilk et al. (2006) and Cools et al. (2014). Evidence supports staged protection, motion, strength, neuromuscular control and return to sport, but exact timelines remain largely consensus-based. Advance by clinical criteria, not fixed deadlines.

Four principles drive the plan:

- Progress is criteria-based. Time frames are typical ranges, and the patient advances only when the exit criteria for the phase are met.
- The repaired capsulolabral tissue needs protection while it heals, so external rotation and abduction end ranges are limited early and restored gradually.
- Dynamic stability comes from the rotator cuff, scapular stabilizers and trunk and lower-body kinetic chain, and these are trained early and progressed deliberately.
- Return to sport is a graded continuum that depends on objective strength, range of motion, functional and psychological readiness, not the calendar alone.

Return to sport is targeted at about 5 months for non-contact activity and 6 months for contact or collision sports, only when all criteria are met. These are earliest-eligible targets, not guarantees. Younger age, contact or collision sports, bone loss and hyperlaxity increase recurrence risk (Balg and Boileau, 2007; Burkhart and De Beer, 2000) and may require a longer course. The surgeon determines clearance.

This clinical template must be individualized for tissue quality, anchor number, concomitant procedures, handedness, sport and comorbidities. The operating surgeon’s instructions take priority.

2. Phase Overview

Phase	Typical timing	Primary focus	Key exit criteria
0. Pre-operative	Before surgery	Reduce pain, preserve motion, baseline testing, education	Baseline measures recorded, home program understood
1. Protection	Weeks 0 to 4	Sling, pain control, hand and elbow motion, scapular setting	Pain controlled, no wound problems, sling discipline understood
2. Early motion	Weeks 4 to 8	Passive then active-assisted motion within limits, light cuff activation	Forward elevation to about 120 to 140 degrees, controlled scapulohumeral rhythm

Phase	Typical timing	Primary focus	Key exit criteria
3. Strengthening	Weeks 8 to 12	Active motion, progressive resisted cuff and scapular strength	Near-full active motion, no shrug sign, pain-free resisted external rotation
4. Advanced strengthening	Months 3 to 4	Heavy strength, closed-chain and neuromuscular control, kinetic chain	Strength within 80% of other side, controlled end-range stability
5. Sport-specific	Months 4 to 5	Plyometrics, sport-specific drills, endurance	Strength at least 90%, no apprehension, functional tests passed; non-contact return at about 5 months
6. Return to sport	Months 5 to 6	Graduated sport participation, contact reintroduction	Full test battery passed and surgeon clearance; contact sport return at 6 months

3. Phase 0: Pre-Operative Preparation

Entering surgery with a calm, mobile shoulder and good cuff and scapular control makes early recovery easier. Pre-operative rehabilitation should continue while the patient is waiting for surgery, as long as it does not provoke instability.

- Control pain and avoid positions that provoke apprehension or subluxation.
- Maintain elbow, wrist and hand motion and general fitness, including the lower body and trunk.
- Begin scapular setting and rotator cuff activation within a safe range.
- Record baseline measures on both shoulders: range of motion, strength (handheld dynamometer), ASES or Western Ontario Shoulder Instability Index (WOSI), and a psychological readiness score such as the Shoulder Instability Return to Sport after Injury (SIRSI) scale.
- Educate on expected timelines, sling use, sleeping position, driving restrictions and the staged return-to-sport pathway.

4. Phase 1: Protection (Weeks 0 to 4)

Goals: protect the repair, control pain and swelling, prevent stiffness in adjacent joints and begin gentle muscle activation without stress on the capsule.

Precautions: sling use for about 4 weeks, with removal for hygiene and gentle exercise, per surgeon preference (some procedures up to 6 weeks). Avoid external rotation beyond the limit set by the surgeon (commonly neutral to 30 degrees), avoid abduction combined with external rotation, avoid active internal rotation against resistance and avoid lifting or pushing with the operated arm. Passive range of motion is limited to protect the anterior capsule.

Component	Prescription
Pain and swelling	Cryotherapy, positioning, medication per surgeon, sleeping semi-reclined with the arm supported
Adjacent joints	Active elbow, wrist and hand motion, grip exercises, cervical and thoracic mobility
Shoulder motion	Pendulum exercises, and passive forward elevation in the scapular plane to about 90 degrees by week 2 to 3, passive external rotation only within the surgeon limit
Muscle activation	Scapular setting (retraction and depression), submaximal pain-free isometrics for the cuff starting around week 2 to 3
Conditioning	Walking, stationary cycling and lower-body work with the arm in the sling

Progress to Phase 2 when: pain is controlled, there are no wound or neurological concerns, passive elevation is progressing without pain and the surgeon agrees to move beyond the protective period.

5. Phase 2: Early Motion (Weeks 4 to 8)

Goals: restore range of motion gradually, wean from the sling, retrain scapulohumeral rhythm and begin light cuff and scapular activation. The repair is still vulnerable, and early aggressive stretching has been linked to loss of fixation, so external rotation and abduction end ranges are added carefully.

- Range of motion: progress from passive to active-assisted to active motion. Target forward elevation of about 120 to 140 degrees by week 6 and near full by week 8 to 10. External rotation at the side progresses to about 30 to 40 degrees by week 6, then increases toward the other side by weeks 10 to 12. External rotation at 90 degrees of abduction is delayed until about week 8 to 10 and then progressed slowly.
- Muscle activation: submaximal isometrics progressing to light isotonic cuff exercises with a towel roll or a light band, side-lying external rotation without weight, scapular retraction, prone rows and low rows with light resistance.
- Scapular control: serratus anterior activation (wall slides, supine punch), lower trapezius work, and correction of any shrug or scapular dyskinesis (Cools et al., 2014).
- Closed-chain weight shifting on a table at low load, starting around week 6.
- Conditioning: stationary cycling, treadmill walking and trunk and lower-body strengthening with the arm protected.

Progress to Phase 3 when: forward elevation reaches at least 140 degrees with good scapular rhythm, external rotation is within the surgeon limit without apprehension, resting pain is minimal and there is no recurrent swelling or subluxation sensation.

6. Phase 3: Strengthening (Weeks 8 to 12)

Goals: restore full active range of motion, build rotator cuff and scapular strength and improve dynamic stability.

- Range of motion: full active elevation and gradual progression of external rotation at 90 degrees of abduction toward the other side, avoiding forced end-range stretching.
- Rotator cuff: resisted external and internal rotation with bands at the side, then in the scapular plane, progressing to 90 degrees of abduction as tolerated. Add side-lying external rotation and prone horizontal abduction with light weights, 2 to 3 sets of 10 to 15 repetitions.
- Scapular and upper back: rows, prone Y, T and W raises, serratus punch with a band, and wall slides with a band.
- Closed-chain and stability: quadruped weight shifting, plank progressions from knees to toes and wall push-up with a plus.
- Rhythmic stabilization and proprioception: manual rhythmic stabilization in mid-range, ball on wall at low elevation, and perturbation drills with the arm below shoulder height.
- Kinetic chain: lower-body strengthening, core and rotational trunk stability work.

Progress to Phase 4 when: active motion is within about 10 degrees of the other side, there is no shrug or compensation during elevation, resisted external rotation is pain-free and strong, and the patient has no apprehension in daily activities.

7. Phase 4: Advanced Strengthening (Months 3 to 4)

Goals: build strength and power, improve endurance and neuromuscular control at end range and in overhead positions.

- Strength: progress to heavier resistance in the cuff and scapular muscles (about 3 to 4 sets of 8 to 12 repetitions), bench press and push-up progressions with a limited range early, rows, lat pull-downs to the front and overhead pressing within a safe range.
- End-range control: rhythmic stabilization and perturbation training with the arm at 90 degrees of abduction and external rotation, bodyblade or reactive tasks, and band-resisted 90/90 external rotation.
- Plyometric preparation: double-arm chest passes and low-level ball drops with a weighted ball, progressing to catching and returning.
- Interval program preparation for throwing or overhead athletes: begin interval throwing only after meeting the criteria for it and with surgeon approval, typically at about 3.5 to 4 months.
- Testing at about 4 months: handheld dynamometer or isokinetic testing for internal and external rotation, closed kinetic chain upper extremity stability test (CKCUEST), and range of motion comparison.

Progress to Phase 5 when: internal and external rotation strength is at least 80% of the other side, the external to internal rotation strength ratio is at least about 66 to 75%, no apprehension or pain with overhead tasks, and normal scapular mechanics.

8. Phase 5: Sport-Specific Training (Months 4 to 5)

Goals: restore power, endurance and sport-specific skill under controlled conditions.

- Plyometrics: progress from two-hand chest passes and overhead throws to single-arm throws, wall dribbles, plyometric push-ups and reactive drills.
- Throwing and overhead athletes: structured interval throwing program with progressive distance and volume, with mechanics and trunk and lower-body contribution monitored.
- Non-contact athletes: sport drills at increasing speed and intensity, such as swimming strokes, racquet drills or passing, with return to full non-contact sport targeted at about 5 months.
- Contact and collision athletes: technique training, tackling and falling drills only with the arm in protected positions, using pads or tackling dummies, and no full contact yet. Full contact is targeted at 6 months.
- Strength: maintain heavy cuff, scapular and upper-body strength training 2 to 3 times per week, with eccentric emphasis.
- Conditioning: sport-appropriate cardiovascular work and kinetic chain training.

Progress to Phase 6 when: strength is at least 90% of the other side, the patient completes sport-specific drills without pain or apprehension, passes the functional test battery in section 10 and has surgeon agreement. Non-contact athletes who meet these criteria may return to full participation at about 5 months.

9. Phase 6: Return to Sport (Months 5 to 6)

Goals: reintroduce full training and competition in staged steps once cleared. Non-contact athletes complete this phase at about 5 months, and contact athletes reach full return at 6 months.

1. Full non-contact training at game speed (return to participation), targeted at about 5 months for non-contact sport.

2. Controlled contact or reactive drills with pads and limited exposure, beginning at about 5 months for contact athletes, then a modified scrimmage.
3. Full practice, then competition with graduated exposure (for example, 25%, 50% and 75% of usual minutes or innings over successive weeks), with contact athletes reaching full contact at 6 months.
4. Unrestricted competition (return to performance) after several full sessions without symptoms or setbacks.

Return to non-contact sport is targeted at about 5 months and to contact or collision sport at 6 months, in each case only when every criterion is met. Athletes with bone loss, hyperlaxity, a history of multiple dislocations or poor tissue quality, and younger contact athletes, may need a longer course. Earlier or later clearance is a surgeon decision.

10. Return-to-Sport Test Battery

The non-contact test battery is performed at about 5 months and the full battery, including contact-specific tasks, at 6 months, with a pre-screen at about 4 months to identify deficits early. Measures compare the operated shoulder with the uninjured shoulder, expressed as a limb symmetry index (LSI = operated divided by uninjured, times 100). For dominant-arm athletes, normative dominance differences should be considered, and pre-injury baselines are valuable if available.

Domain	Test	Passing standard
Range of motion	Goniometric elevation, external and internal rotation at 90 degrees of abduction	Within 5 to 10 degrees of the uninjured side; no pain or apprehension
Rotator cuff strength	Handheld dynamometer or isokinetic internal and external rotation	LSI at least 90%; external to internal rotation ratio at least about 66 to 75%
Scapular strength and control	Prone Y, T and I holds, lateral scapular slide test, observation for dyskinesis	Symmetrical hold times and no visible dyskinesis
Closed-chain upper extremity function	CKCUEST, modified push-up test	At or above normative values for sex and sport; LSI at least 90% where applicable
Open-chain functional performance	Seated medicine ball throw, single-arm shot put or overhead throw	LSI at least 90%
Power and endurance	Plyometric push-up, rotator cuff endurance tests	Symmetrical performance with no pain
Stability tests	Apprehension, relocation and load-and-shift examination	No apprehension or pain, no excessive translation
Patient-reported function	WOSI, ASES, or Quick DASH with sports module	WOSI at least about 75 to 80% of maximum, or at a level agreed with the surgeon
Psychological readiness	Shoulder Instability Return to Sport after Injury (SIRSI)	Score of at least about 56 out of 100 (higher indicates greater readiness)
Sport-specific performance	Throwing, swimming, tackling or sport drills	Completed at game speed without compensation, pain or apprehension

If any item falls short, the athlete is not cleared. Targeted training continues for 4 to 6 weeks and only the failed domains are retested. The surgeon and clinician make the final decision jointly with the athlete.

11. Individualizing the Protocol

Situation	Adjustment
Posterior capsulolabral repair	Sling in neutral or slight external rotation, avoid internal rotation and horizontal adduction early, and delay pressing and push-up work until about 3 months

Situation	Adjustment
Remplissage or bone augmentation	More conservative external rotation limits and delayed strengthening in the first 6 to 8 weeks, per surgeon
SLAP repair or biceps procedure	Delay resisted biceps activity for 6 to 8 weeks and avoid active elbow flexion under load
Hyperlaxity or multidirectional instability	Emphasize neuromuscular control, avoid stretching into end range and consider a longer protected period
Overhead or throwing athlete	Add a structured interval throwing program, kinetic chain work and workload monitoring, and plan return around the surgeon timeline
Collision or contact athlete	Strict criteria before contact, graded contact exposure from about 5 months and full contact at 6 months only with surgeon clearance; extend if risk factors are present
Adolescent athlete	Higher recurrence risk justifies strict test criteria and may justify a return later than 6 months
Older or non-athletic patient	Progression to functional goals; lower demands for overhead strength and speed

12. Monitoring, Load Management and Red Flags

Load should be monitored at each session and between sessions. Pain, apprehension, motion and next-day soreness guide progression, and volume should not increase by more than about 10 to 20% per week, particularly in overhead athletes.

Refer back to the surgeon promptly for: fever, wound redness or drainage, new numbness or weakness in the arm or hand, a hot, swollen or painful calf or arm (possible blood clot), a sudden loss of motion, a sense that the shoulder has slipped out or popped out, persistent night pain that is worsening, or an inability to progress after several weeks of appropriate rehabilitation.

13. After Return to Sport

Risk of recurrent instability is highest in the first 2 years, especially in young contact athletes. Athletes should continue cuff and scapular strengthening at least twice weekly, maintain a shoulder and trunk warm-up program, monitor workload during the first competitive season and retest strength and range of motion at 12 and 24 months. Any new apprehension, feeling of slipping or loss of function should prompt early review.

14. References

Balg F, Boileau P. The instability severity index score: a simple pre-operative score to select patients for arthroscopic or open shoulder stabilisation. J Bone Joint Surg Br. 2007;89:1470-1477.

Burkhart SS, De Beer JF. Traumatic glenohumeral bone defects and their relationship to failure of arthroscopic Bankart repairs: significance of the inverted-pear glenoid and the humeral engaging Hill-Sachs lesion. Arthroscopy. 2000;16:677-694.

Cools AM, Struyf F, De Mey K, Maenhout A, Castelein B, Cagnie B. Rehabilitation of scapular dyskinesis: from the office worker to the elite overhead athlete. Br J Sports Med. 2014;48:692-697.

Gaunt BW, Shaffer MA, Sauers EL, Michener LA, McCluskey GM, Thigpen CA. The American Society of Shoulder and Elbow Therapists' consensus rehabilitation guideline for arthroscopic anterior capsulolabral repair of the shoulder. J Orthop Sports Phys Ther. 2010;40:155-168.

Wilk KE, Macrina LC, Reinold MM. Non-operative and postoperative rehabilitation for glenohumeral instability. N Am J Sports Phys Ther. 2006;1:16-31.

This protocol provides general educational guidance and does not replace the instructions of the treating surgeon or the clinical judgment of a licensed physical therapist. Citations should be verified against the original sources before clinical use.