

NATHAN URQUHART, MD, MSc, FRCS(C), Dip Sport Medicine, NSMB

Anterior Shoulder Instability

Postoperative Rehabilitation Protocol

Arthroscopic Bankart repair and distal tibial allograft glenoid reconstruction | Revised Sept 2026

Clinical priority. Surgeon-specific restrictions supersede this guide. Protect the capsulolabral repair and, when present, the bone graft while progressively restoring motion, dynamic stability, strength, confidence, and sport/work capacity. Progression requires both minimum healing time and objective criteria.

How to select the pathway

This protocol is designed for anterior shoulder stabilization. Identify the exact procedure, instability direction, capsular shift, glenoid and humeral bone loss, tissue quality, fixation, concomitant procedures, and surgeon concerns before treatment.

Pathway	Typical surgery and biology	Default rehabilitation implication
Bankart pathway	Primary arthroscopic anterior capsulolabral repair, with or without capsular shift; no major glenoid reconstruction.	Protected early PROM including staged ER; sling commonly 4-5 weeks; AAROM/AROM progressed through weeks 4-8; strengthening from about 6-8 weeks; advanced testing after 4 months; unrestricted sport usually ≥5-6 months when criteria are met.
Distal tibial allograft (DTA) bone-graft pathway	Anterior glenoid reconstruction with distal tibial allograft for clinically important bone loss, failed prior stabilization, or high-risk anatomy.	Protect graft fixation and osseous incorporation: sling and no upper-extremity weight bearing typically 6 weeks; slower ER and combined abduction/ER; delayed loading; surgeon confirmation and possible imaging) before contact, collision, heavy overhead work, or unrestricted sport.

Procedure-specific modifications

Procedure	Required modification
Distal tibial allograft	Protect fixation and osseous incorporation. Sling/NWB commonly 6 weeks; slower ER and no early combined abduction/ER; delay closed chain, heavy push/pull, impact, and collision. Surgeon may require radiographs or CT before high-risk return.

Procedure	Required modification
Remplissage	Treat posterior capsulotenodesis/infraspinatus healing. Avoid aggressive ER and IR stretching early; delay resisted ER as directed. Some ER loss may be expected, especially at 90° abduction; restore only to functional/sport requirement without force.
Capsular shift/plication or hyperlaxity	Use more conservative ER/abduction progression. Do not pursue maximal laxity or contralateral hypermobile range. Emphasize mid-range control and endurance.
SLAP repair	Avoid early traction and resisted biceps loading; delay provocative overhead peel-back position. Follow superior-labral restrictions when more conservative.
Biceps tenodesis	Avoid resisted elbow flexion and supination and heavy carrying for approximately 6 weeks or surgeon direction.
Concomitant rotator-cuff repair	Use the more protective cuff-repair timeline for active motion and strengthening.

Evidence limitation. Bankart rehabilitation has consensus guidance and limited comparative trials. DTA-specific rehabilitation has no high-quality comparative trials; recommendations are based on surgical cohorts, graft-healing biology, technique-specific precautions, and expert practice. The surgeon's assessment of graft fixation and healing therefore carries greater weight.

Operative and patient checklist

- Procedure: Bankart repair versus DTA; number/location of anchors; revision status; graft size, fixation, and position; surgeon-defined ROM and weight-bearing restrictions.
- Associated pathology/procedures: remplissage, SLAP or posterior labral repair, HAGL repair, rotator cuff repair, biceps tenodesis, subscapularis/tenotomy/repair, cartilage treatment, or nerve injury.
- Risk modifiers: age, collision/contact or overhead sport, hyperlaxity/Beighton score, number of previous events, bilateral instability, seizure disorder, glenoid bone loss, off-track Hill-Sachs lesion, poor tissue, smoking/nicotine, diabetes, and adherence.
- Baseline: pain, wound and neurovascular status, sleep, cervical screen, permitted PROM, scapular control, apprehension, work/sport demands, WOSI or ASES, and psychological readiness/fear.

Global protection and symptom rules

- No forced end-range ER, extension, horizontal abduction, or combined abduction/ER during early healing. Never use apprehension as a stretching target.
- No lifting, carrying, pushing, pulling, upper-extremity weight bearing, sudden reaching, or fall-risk activity until the phase allows it. DTA patients remain strictly non-weight-bearing through the operated arm for the first 6 weeks unless directed otherwise.
- Avoid aggressive anterior glenohumeral mobilization. Manual therapy should target a defined impairment without stressing the repaired anterior-inferior capsule/labrum or graft.
- Exercise discomfort should be mild, mechanics controlled, and symptoms back to baseline by the next morning. Increasing apprehension, night pain, loss of motion, or soreness lasting >24 hours indicates excessive dose.

- Restore motion gradually. Full symmetric ER is not mandatory for every patient, especially collision athletes or after capsular tightening. Overhead athletes need task-specific ER/IR balance rather than indiscriminate stretching.
- Progress one loading variable at a time: support, lever arm, elevation, range, resistance, volume, speed, perturbation, and task complexity.

Red flags and communication

Expected/monitor	Reassess and modify	Urgent surgeon/medical review
Postoperative ache, bruising, sleep disturbance, guarded movement, and transient exercise soreness that resolves by the next day.	Progressive stiffness; persistent paresthesia; increasing apprehension; repeated flare >24 h; inability to control humeral-head position; wound irritation; new clicking with pain; unexpected weakness.	Wound drainage or spreading erythema; chest pain/dyspnea; marked arm swelling; new neurologic deficit; traumatic event followed by deformity, instability, sudden loss of function, or severe pain.

ROM guide: Bankart versus DTA

These are guide ranges, not required milestones. Use scapular-plane elevation and ER with the elbow supported at the side initially. Progress only with relaxed mechanics, stable symptoms, and surgeon approval.

Time	Bankart repair guide	DTA reconstruction guide
0-2 weeks	PROM elevation commonly 60-90°; ER at side to neutral or 10-20°; IR to abdomen. No combined abduction/ER.	Often shoulder immobilization with only surgeon-authorized PROM; elevation commonly ≤60-90°; ER to neutral. Strict no weight bearing.
2-4 weeks	Progress elevation toward 90-120°; ER at side toward 20-30°. Begin supported AAROM when authorized.	PROM elevation toward 90°; ER at side neutral to 20° if permitted. No combined abduction/ER; no forceful motion.
4-6 weeks	Progress elevation toward 120-135°; ER at side toward 30-45°; AAROM/AROM with minimal substitution.	Progress elevation as tolerated/authorized; ER at side commonly ≤30° (occasionally ≤45° per surgeon). Maintain graft protection and sling.
6-12 weeks	Gradually restore functional ROM; progress ER at 0° then 45° abduction. Delay forceful ER at 90° and apprehension position.	After surgical review, progress AAROM/AROM and ER gradually. Avoid aggressive end range and high-load combined abduction/ER. No heavy push/pull or impact.
12+ weeks	Progress toward sport-specific motion without forcing; overhead athletes restore total arc and horizontal-adduction mobility as indicated.	Progress toward functional/full ROM based on graft status, approach, and stability. Surgeon may use radiographs/CT before higher-risk loading.

Phase I — Protection and symptom control | Postoperative day 0 to week 2

Primary goals. Protect fixation; control pain/swelling; maintain distal mobility; establish safe sling, sleep, hygiene, and home-program habits.

Precautions and loading limits

- Sling continuously except hygiene and prescribed exercise. Bankart often uses sling for 4-5 weeks if arm control is good; DTA is 6 weeks.
- No active shoulder elevation, active ER, lifting, upper-extremity weight bearing, driving, or unsupported arm use.
- Bankart: PROM only within limits. DTA: follow stricter graft-specific motion limits; no shoulder motion if the operative instruction specifies immobilization.
- Avoid extension beyond neutral and any combined abduction/ER or horizontal abduction.

Physiotherapy interventions

- Education: procedure, protection, sling fit, skin checks, dressing, bathing, supported sleep, safe transfers, fall prevention, and signs requiring review.
- Cryotherapy with skin protection, supported positioning, relaxation/breathing, and prescribed medication guidance.
- Hand/wrist/forearm AROM; elbow AROM unless biceps or subscapularis-related restrictions apply. Cervical and thoracic movement as tolerated.
- Small trunk-driven pendulums; scapular clocks/setting without forceful depression or retraction.
- Therapist-supported PROM in scapular plane and ER at side within pathway limits. Use low repetition, short duration, and no end-range force.

Criteria to progress

- Wound and neurovascular status satisfactory; pain/swelling stable or improving.
- Patient independently demonstrates sling/protection rules and home program.
- PROM is relaxed and remains within limits without next-day flare or apprehension.

Phase II — Protected mobility and motor activation | Weeks 2 to 6

Primary goals. Protect capsulolabral/graft healing; gradually restore safe PROM/AAROM; minimize stiffness; establish scapular and low-load neuromuscular control.

Precautions and loading limits

- Bankart: sling generally through weeks 4-5, then wean if good control. DTA: sling and no arm weight bearing generally through week 6.
- No forceful ER, anterior glide, extension/horizontal abduction, or combined abduction/ER.
- No lifting or resisted open-chain shoulder exercise. DTA: no pushing, pulling, carrying, closed chain, or using the arm for transfers.
- Avoid pulleys or wall walks if they create active shrugging, anterior translation, or uncontrolled lowering.

Physiotherapy interventions

- PROM/AAROM according to the ROM table: supported elevation/scaption, ER at side, and gentle IR. Progress the plane of abduction only after control in neutral.
- Bankart: introduce supported AAROM around weeks 3-4 when authorized—table slides, contralateral-assisted supine elevation, dowel, or well-controlled pulley.
- DTA: delay AAROM/AROM until surgeon clearance, commonly around week 6; maintain strict graft protection.
- Submaximal pain-free isometrics may begin around weeks 4-6 for Bankart: ER/IR at neutral, flexion/extension, and abduction with arm supported. For DTA, begin only after 6 weeks.

- Scapular control and thoracic mobility: supported protraction/retraction, upward-rotation awareness, low-load posture, and kinetic-chain exercise that does not transmit load to the arm.

Criteria to progress

- Surgeon authorizes sling wean and active progression.
- Stable pain, no instability episodes/apprehension increase, and no reactive symptoms >24 h.
- Bankart guide: PROM elevation approximately 120-135° and ER at side 30-45°. DTA: achieves surgeon-defined PROM target without stress.
- AAROM can be completed without shrug, trunk substitution, anterior translation, or uncontrolled eccentric lowering.

Phase III — Restore active motion and foundational strength | Approximately weeks 6 to 12

Primary goals. Restore controlled AROM; normalize scapulohumeral rhythm; develop rotator-cuff/scapular endurance and proprioception; resume light functional use.

Precautions and loading limits

- DTA progression begins only after the 6-week surgical review and confirmation that fixation is satisfactory. Continue avoiding heavy push/pull, body-weight support, impact, and combined abduction/ER.
- No aggressive ER stretching or anterior mobilization. Do not sacrifice stability or movement quality to achieve symmetry.
- Avoid heavy resistance, long-lever elevation with shrug, floor push-ups, planks, dips, pull-ups, or rapid overhead activity.

Physiotherapy interventions

- AAROM → AROM progression: supine → reclined → upright; short lever → long lever; scapular plane → multiplanar. Emphasize smooth centring and eccentric control.
- Low-load isotonic cuff work when authorized: side-lying or band ER, IR at side, scaption below provocative range; start with endurance loads.
- Scapular work: row, serratus punch/wall slide, low-trapezius patterns, and controlled protraction/upward rotation. Avoid habitual depression cueing.
- Proprioception: rhythmic stabilization and low-amplitude perturbation in supported neutral/mid-range; progress direction, lever, and visual challenge.
- Closed chain: Bankart may begin wall weight shifts/push-up-plus around 8-10 weeks if criteria are met. DTA closed chain is delayed until surgeon permits graft loading, often 10-12+ weeks.
- Blood flow restriction training for biceps/triceps can be initiated (except if biceps tenodesis procedure)
- Address posterior shoulder and thoracic mobility when limited; avoid stressing the anterior capsule.

Criteria to progress

- Near-full, non-painful elevation with minimal shrug and smooth lowering.
- Functional ER/IR appropriate to procedure and activity; no apprehension during permitted motion.
- Tolerates light cuff/scapular resistance and supported perturbation without compensation or next-day flare.
- DTA: surgeon confirms progression to greater loading; consider imaging status when specified.

Phase IV — Progressive strength and dynamic stability | Approximately months 3 to 4

Primary goals. Build cuff/scapular strength and endurance; improve closed-chain capacity, proprioception, deceleration, and functional movement below and above shoulder height.

Precautions and loading limits

- No contact, collision, falls, uncontrolled plyometrics, maximal lifts, or provocative apprehension-position loading.
- DTA: high-load pressing/pulling and impact remain restricted until graft incorporation is judged satisfactory.
- Remplissage may produce expected ER limitation; do not force range through posterior cuff discomfort.

Physiotherapy interventions

- Progress ER/IR resistance at 0°, then 45°, then 90° abduction as control and ROM permit; add scaption, rows, presses in protected planes, serratus and lower-trapezius loading.
- Closed-chain progression: wall → incline → quadruped → modified plank, emphasizing stable humeral-head position and scapular control.
- Perturbation/rhythmic stabilization across planes; progress from predictable to reactive and from bilateral to unilateral.
- Eccentric control: lowering from elevation, ER deceleration, and graded horizontal-plane work.
- Introduce low-level two-hand plyometrics below shoulder height, then wall dribbles/rebounds if full motion, baseline strength, and symptom criteria are met.
- General conditioning and kinetic-chain integration: trunk/hip force transfer, carries close to body, and task-specific patterns.

Criteria to progress

- Full or functionally sufficient, non-painful AROM without apprehension or major compensation.
- ER/IR and elevation strength at least about 70-80% of the contralateral side before advanced plyometrics; interpret bilateral pathology and dominance.
- Tolerates closed-chain loading, perturbation, and foundational plyometrics without instability or >24-hour response.

Phase V — Advanced strengthening and return-to-performance preparation | Approximately months 4 to 6

Primary goals. Develop high-level strength, endurance, power, reactive stability, confidence, and graded work/sport exposure.

Precautions and loading limits

- Time alone does not permit return. Contact/collision, overhead throwing, and high-risk positions require objective testing and surgeon clearance.
- DTA: obtain explicit surgeon confirmation—often including satisfactory radiographic assessment—before heavy overhead, impact, collision, or unrestricted activity.
- Avoid abrupt workload spikes. Progress intensity, volume, frequency, speed, contact, and fatigue exposure separately.

Physiotherapy interventions

- Advanced resistance: multiplanar cuff/scapular work, overhead endurance, pressing/pulling progression, heavy-slow resistance where appropriate, and deceleration.
- Plyometrics: two-hand below shoulder → two-hand overhead → one-hand below shoulder → one-hand overhead; low volume/intensity before speed or load.
- Functional testing practice: handheld dynamometry, CKCUEST, Upper Quarter Y-Balance, seated single-arm shot-put, Athletic Shoulder test or equivalent, posterior shoulder endurance, and sport-specific tasks.
- Throwers: begin an interval throwing program only after ROM, strength, endurance, mechanics, and surgeon criteria are met—commonly around 4-5 months, not automatically at 14 weeks.
- Swimming: can begin gentle swimming technique.
- Collision athletes: progressive controlled contact exposure only after passing non-contact strength/functional criteria and receiving surgeon clearance.
- Use WOSI/ASES and SIRSI or SIRSI-5 to track symptoms, function, confidence, and fear of reinjury.

Criteria to progress

- Pain-free functional ROM; no apprehension, instability, or compensatory mechanics under fatigue.
- Strength generally ≥85-90% limb symmetry for ER, IR, and elevation; appropriate ER:IR balance and absolute capacity for the sport.
- Functional tests generally ≥90% symmetry or relevant normative/task threshold, with high-quality movement and no adverse next-day response.
- Psychological readiness and confidence adequate for graded exposure.

Phase VI — Return to unrestricted work and sport | Usually ≥5-6 months after Bankart and ≥6 months after DTA; often 7-9+ months for collision/overhead demands

Primary goals. Complete safe return to participation, then performance, with adequate tissue healing, objective capacity, psychological readiness, and workload tolerance.

Precautions and loading limits

- Do not clear an athlete solely because 6 months have elapsed. Many patients retain strength or functional deficits at 6 months.
- Young age, collision sport, hyperlaxity, prior recurrence/revision, major bone loss, off-track lesion, and poor confidence justify a more conservative decision.
- Any recurrent subluxation/dislocation, increasing apprehension, or loss of function requires surgical reassessment.

Physiotherapy interventions

- Complete a graded practice/work-hardening continuum: predictable → reactive; non-contact → controlled contact → full contact; low fatigue → sport fatigue.
- Throwing/racquet/swimming: interval workload with monitoring of total arc, ER/IR strength, velocity/effort, volume, recovery, and next-day symptoms.
- Heavy work: reproduce lift/carry/push/pull forces, height, repetition, duration, tools, and unexpected perturbation.
- Maintain cuff/scapular strength and kinetic-chain program 2-3 times weekly during re-entry and season.

Criteria to progress

- Surgeon agrees tissue/graft healing is adequate and no clinical instability is present.

- Full task-specific ROM; no pain or apprehension; stable mechanics under fatigue and reactive conditions.
- Objective strength and functional battery meets $\geq 90\%$ symmetry and task-specific standards; no single major deficit is masked by an average score.
- Patient completes graded practice/work exposure without instability or >24-hour flare.
- For DTA CT will likely be performed before full contact sport clearance.

Physiotherapy assessment and loading details

- At each visit document pain, apprehension, sleep, perceived instability, wound/neurovascular findings when relevant, ROM position and method, movement quality, exercise dose, and 24-hour response.
- Differentiate stiffness from protective guarding and fear. Do not force a fearful patient into the apprehension position; use graded exposure after adequate healing and capacity.
- Strength testing: begin submaximally in protected neutral; later use handheld dynamometry for ER/IR at side and at 90° abduction, elevation/scaption, and relevant push/pull. Standardize position, lever arm, repetitions, and side order.
- Open-chain dosing: initially 1-3 sets of 10-20 controlled repetitions with 2-4 sessions/week. Later use a spectrum of endurance and strength loads with 48 hours between harder shoulder sessions.
- Closed-chain dosing: quantify inclination/body-weight share, duration, contacts/touches, perturbation amplitude, and fatigue. Quality and apprehension response matter as much as repetitions.
- Manual therapy is an adjunct, not the program. Prefer thoracic/scapulothoracic and posterior/inferior techniques for defined impairments; avoid anterior translation and forceful ER.

Suggested objective testing battery

Domain	Measures and interpretation
Symptoms/function	WOSI preferred for instability-specific function; ASES or QuickDASH as alternatives. Record pain, instability events, apprehension, and sport/work exposure.
Psychological readiness	SIRSI or SIRSI-5. Use serially and combine with graded exposure; it supplements rather than replaces physical testing.
ROM	Elevation; ER/IR at side and 90° abduction; total rotational arc; horizontal adduction. Compare sides while accounting for dominance, sport adaptation, capsular shift, and remplissage.
Strength	HHD or isokinetic ER/IR at 0° and 90° , elevation/scaption, relevant push/pull. Target generally $\geq 90\%$ symmetry for high demand plus adequate absolute strength and ER:IR profile.
Closed-chain function	CKQUEST and/or Upper Quarter Y-Balance. Record pain/apprehension and movement quality; use symmetry and sport-appropriate norms.
Power/endurance	Seated single-arm shot-put, Athletic Shoulder test or equivalent, posterior shoulder endurance, wall-dribble/rebound tests, and task-specific repeated efforts.
Exposure tolerance	Graded practice, throwing, contact, overhead, or work simulation completed without instability, compensation, or adverse 24-hour response.

Outcome-measure schedule

Time	Recommended measures
Initial PT	WOSI/ASES; pain and apprehension; permitted PROM; scapular control; neurovascular screen; work/sport demands; psychosocial and recurrence risks.
6 weeks	Symptoms; PROM/AAROM; sling wean; movement quality; protection adherence; surgeon/graft status for DTA.
12 weeks	PROM/AROM; apprehension; cuff/scapular endurance; closed-chain readiness; WOSI/ASES.
4-5 months	ROM; HHD strength; initial functional battery; SIRSI/SIRSI-5; readiness for throwing/contact preparation.
Return decision	Complete strength/functional battery; PROM; psychological readiness; workload trial; DTA often requires CT scan before full contact clearance.
6-12 months	WOSI/ASES; SIRSI; sport level/performance; instability events; maintenance adherence.

Return-to-driving, work, and sport guidance

- Driving: no driving while taking opioid medication, while in the sling, or until safe steering and emergency manoeuvres are possible. Surgeon and insurer requirements apply.
- Desk work: return when pain, medication effects, transport, and ergonomics allow; support the arm and avoid repetitive reaching.
- Light duty: prescribe explicit limits for lift/carry, reach, push/pull, repetition, and shift duration.
- Heavy manual/overhead work: usually ≥ 5 -6 months after Bankart and often ≥ 6 months after DTA, contingent on objective work simulation and surgeon clearance.
- Non-contact sport: graded return after foundational strength and control. Avoid fall-risk activities until protective reactions and weight-bearing capacity are restored.
- Contact/collision sport: generally not before 6 months and often later after DTA/revision; require full non-contact training, objective testing, confidence, and surgical clearance.
- Overhead/throwing sport: interval throwing commonly begins around 4-5 months after Bankart when criteria are met; unrestricted competition often 6-9+ months. DTA and remplissage may require longer.

Discharge and unrestricted-return criteria

- No instability events, clinically important apprehension, night-pain escalation, or reactive symptoms.
- Functional ROM appropriate to surgery and task; stable scapulohumeral mechanics under speed, load, fatigue, and perturbation.
- Objective ER, IR, elevation, and task-specific strength generally $\geq 90\%$ of the contralateral side and appropriate absolute/normative values.
- Passes selected closed-chain, power, endurance, and sport/work tests without pain, apprehension, compensation, or adverse next-day response.
- WOSI/ASES demonstrates meaningful recovery; SIRSI/SIRSI-5 indicates adequate confidence/readiness.

- Completes graded practice/work exposure and understands recurrence risk, workload progression, maintenance training, and indications for reassessment.
- Surgeon provides final clearance; DTA graft healing is considered satisfactory before collision, impact, or unrestricted heavy loading.

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Protocol governance

This clinician guide should be reviewed periodically as evidence, fixation techniques, and local practice evolve. It does not replace the operative report, surgeon direction, or physiotherapist assessment. Unexpected deterioration, recurrent instability, traumatic events, or concern for graft/fixation complication should prompt surgical review.

Nathan Urquhart, MD, MSc, FRCS(C), Dip Sport Medicine, NSMB

Orthopaedic Surgeon — Arthroscopy and Sports Medicine

Queen Square, 1802-45 Alderney Drive, Dartmouth, Nova Scotia B2Y 2N6

Phone: 902-477-6002 | Fax: 902-494-9298 | Email: nathan.urquhart@nshealth.ca