ADDUCTOR STRAIN

Conservative Management and Hockey-Specific Return to Play

Grade-Based Rehabilitation Timeline (Grade 1: 1-2 Weeks | Grade 2: 4-6 Weeks | Grade 3: 8-12+ Weeks)

Prepared for clinical use	This document is intended for physicians, physical therapists, athletic trainers, strength and conditioning coaches, performance staff, players, parents, coaches, and rehabilitation professionals involved in conservative management and return-to-play decision-making after adductor strain in hockey athletes.

Important note	Adductor strains are not managed by grade alone. Grade, location, palpation pain, strength loss, sport position, imaging findings, prior groin history, and next-day response all influence progression. Complete proximal tears, palpable defects, bone-tendon junction injuries, large MRI gaps, or recurrent high-grade injuries require physician oversight and shared decision-making. Do not progress solely based on time.

1. Clinical Purpose and Guiding Decision Rule

Time is a reference point - not clearance

Clinical purpose. Provide a structured, grade-based conservative rehabilitation framework for hockey athletes with acute adductor strain, progressing from symptom control to skating, skills, team practice, contact, and full return to play.

Primary decision rule. Progress the athlete when pain response, palpation tenderness, adductor strength, hip range of motion, skating tolerance, sport-specific performance, and next-day response support advancement. Timelines are reference points, not clearance criteria.

2. Evidence Summary: What the Research Tells Us

Hockey groin load + next-day response

Hip and groin problems are common in hockey, are frequently gradual or non-time-loss, and may be underestimated if clinicians only ask about missed games. Conservative management should combine symptom-guided loading, progressive adductor strengthening, workload management, and sport-specific return criteria.

Key Finding	Clinical Meaning	Implication for Hockey Rehabilitation
Adductor injury burden is high	Proximal adductor injuries are highly prevalent in NHL goaltenders and are a major driver of time missed.	Goaltenders need additional respect for butterfly depth, lateral pushes, RVH positions, and recovery mechanics.
Non-time-loss symptoms matter	A large proportion of hip/groin problems in hockey are gradual onset and do not cause immediate time loss.	Ask about recurring symptoms, not just games missed. Prior non-time-loss groin problems should raise recurrence concern.
Hockey exposure changes risk factors	A single hockey exposure can reduce adductor strength and hip rotation ROM, with effects persisting at 24 hours.	Avoid making RTP decisions immediately after dense game blocks without considering fatigue and next-day response.
Strength should be angle-specific	Adduction/abduction strength profiles differ across hip positions, and sport-specific angles may detect risk better than a single squeeze test.	Test adductors in multiple positions when possible: squeeze tests, eccentric strength, and unilateral positions near skating or goalie demands.
Copenhagen exercise is useful but must be dosed	Copenhagen adduction progressions improve adductor strength and are strongly supported for prevention and rehabilitation.	Use progressive levels and a pain-monitoring rule. Maintain adductor strength year-round to reduce recurrence risk.

3. Quick Reference Timeline by Grade

Grade starts the pathway; criteria control progression

Use the grade to estimate the starting pathway, then modify based on location, symptoms, strength loss, athlete position, imaging, and response to loading.

Grade	Working Description	Typical RTP Target	Clinical Presentation	Management Emphasis
Grade 1	Mild strain / overload	1-2 weeks	Minimal strength loss, local soreness, no palpable defect, walking usually normal	Fastest progression; early isometrics, low irritability strengthening, controlled skating once pain-free with clinical testing
Grade 2	Moderate partial tear	4-6 weeks	Clear pain, strength loss, possible bruising, painful skating push-off or change of direction	Standard progressive rehab; controlled strength before speed, on-ice skill exposure after pain-free strength and ROM milestones
Grade 3	Severe partial or complete tear	8-12+ weeks nonoperative	Marked weakness, significant pain, possible palpable defect, proximal tendon concern or MRI gap	Slower conservative pathway; physician oversight, imaging-informed prognosis, delayed high-force adduction and skating demands
Complete proximal tear	Adductor longus avulsion / rupture	8.9 weeks nonoperative average in cited reviews; longer when high-demand or recurrent	Large gap, stump retraction, bone-tendon junction injury, or palpable defect can delay RTP	Conservative care may be appropriate in selected cases, but surgical consultation should be considered for high-level athletes or large retraction

4. Grade-Based Management Options

Conservative options by severity

Injury Category	Primary Conservative Option	Early Management	RTP Emphasis
Grade 1	Conservative care with rapid graded exposure	Relative rest 24-72 hr, pain-limited isometrics, early adductor/glute/trunk strengthening, controlled skate when pain-free	Full activity once sport-specific actions and at least one practice are tolerated without next-day response
Grade 2	Conservative care with structured rehab block	Protect 3-7 days, restore strength 1-3 weeks, controlled skating 2-3+ weeks, skills/team exposure 3-6 weeks	Require restored eccentric adduction strength, pain-free sport actions, and full practice before games
Grade 3	Conservative care only with careful selection and medical oversight	Initial protection, delayed high-force adduction, progressive strength and ROM, on-ice return often 6-8+ weeks	Require imaging-informed decision-making, no defect progression, high strength symmetry, contact tolerance, and repeat practice tolerance
Recurrent strain	Treat as higher risk than the current grade suggests	Review prior symptoms, workload, strength deficits, training gaps, and return pressure	Slower progression; year-round Copenhagen/adductor maintenance after RTP

GRADE 1 | MILD ADDUCTOR STRAIN | TYPICAL RTP TARGET: 1-2 WEEKS

Clinical Intent	- Settle symptoms quickly, maintain fitness, restore pain-free adductor activation, and return the athlete without allowing a minor strain to become recurrent.
Common Presentation	- Mild local adductor soreness - Minimal or no bruising - Walking normal or only mildly symptomatic - Pain with hard skating push-off, crossovers, shooting, or lateral change of direction
Days 0-3	- Relative rest from painful skating and lateral work - Compression and symptom control as needed - Pain-free isometric adduction: long-lever and short-lever options - Glute, trunk, and hip flexor activation without symptom increase
Days 3-7	- Progress to side-lying adduction, band/cable adduction, controlled split-stance strength - Low-intensity slideboard or lateral shuffle if pain-free - Bike or aerobic conditioning to maintain fitness
Return to Skate	- Begin controlled forward skating once palpation, squeeze, and resisted adduction are pain-free or minimal and improving - Start with 15-30 minutes, RPE 2-4/10 - Avoid maximal push-off, hard stops, and high-volume crossovers initially

Avoid / Defer

- Full-speed skating while squeeze/adduction tests remain painful
- Tournament or dense game exposure without a quiet next-day response
- Treating recurring Grade 1 symptoms as harmless soreness

Criteria to Progress

- Pain 0-2/10 with resisted adduction and sport actions
- No increase in palpation pain after loading
- Controlled crossovers and direction change tolerated
- At least one full practice tolerated without next-day symptoms

Grade 1 Clinical Note

A Grade 1 strain should still be respected in hockey because repeated skating exposure can transiently reduce adductor strength and hip rotation. A quick RTP is reasonable only when the athlete can repeat hockey exposures without accumulating symptoms.

GRADE 2 | MODERATE PARTIAL ADDUCTOR STRAIN | TYPICAL RTP TARGET: 4-6 WEEKS

Clinical Intent	- Protect the injured tissue, restore progressive adductor strength, rebuild lateral capacity, and return to hockey only after speed, crossovers, shooting, and practice are repeatable.
Common Presentation	- Clear pain with resisted adduction or squeeze testing - Strength loss compared to the other side - Pain with walking, skating stride, crossovers, or change of direction - Bruising or focal tenderness may be present
Week 0-1: Protect and Calm	- Remove painful skating and lateral work - Isometric adduction at multiple angles if tolerated - Trunk, glute, and hip flexor work that does not provoke symptoms - Bike or pool conditioning if pain-free
Weeks 1-3: Build Capacity	- Progress short-lever to long-lever adductor loading - Side-lying adduction -> cable/band adduction -> short-lever Copenhagen - Split squats, RDLs, step-downs, lateral lunge depth as tolerated - Monitor palpation pain extent, squeeze pain, and eccentric adduction strength
Weeks 3-5: Sport-Specific Loading	- Slideboard intervals - Lateral bounds at controlled intensity - Acceleration/deceleration mechanics - Controlled on-ice skating, crossovers, turns, and shooting progression
Weeks 4-6+: Practice Integration	- Non-contact team drills - Small-area non-contact exposure - Gradual contact and board battle progression once speed and strength are restored

Avoid / Defer	- Aggressive stretching into pain early - Hard crossovers, chaotic small-area games, or contact before strength returns - Returning based only on improved walking pain
Criteria to Progress	- Pain-free palpation or clearly minimal and resolving tenderness - Pain-free squeeze and resisted adduction through relevant ranges - Eccentric adduction strength approximately 90% limb symmetry when available - Full team practice tolerated without next-day response

Grade 2 Clinical Note	Grade 2 injuries usually need a true rehabilitation block. The athlete may feel better before the adductor is prepared for high-speed lateral push-off, reactive direction change, and contact.

GRADE 3 | SEVERE PARTIAL OR COMPLETE TEAR | CONSERVATIVE MANAGEMENT PATHWAY

Clinical Intent	- Use conservative care only when clinically appropriate, protect the injury early, restore strength gradually, and avoid premature return to high-force adduction or goalie-specific extremes.
Common Presentation	- Marked pain and weakness - Painful or limited walking early - Possible palpable defect - Possible bruising, proximal tendon pain, or large strength deficit - MRI may show complete tear, gap, stump retraction, or bone-tendon junction injury
Weeks 0-2: Protection	- Physician oversight and imaging review when complete tear is suspected - Relative rest, compression, and pain control - Protected gait if needed - Gentle pain-free isometrics only when tolerated - Maintain aerobic fitness through non-provocative options
Weeks 2-6: Restore Controlled Strength	- Progress adductor isometrics -> short-range isotonic loading -> longer-lever loading - Glute, trunk, hip flexor, and abductor strengthening - Avoid forcing end-range abduction or loaded stretch - Monitor palpation pain, defect behavior, and strength response
Weeks 6-10: Hockey Rebuild	- Slideboard and lateral movement progression when strength allows - Controlled skating often begins around 6-8+ weeks if criteria are met - Progress forward skating -> backward skating -> crossovers -> shooting -> controlled skills
Weeks 8-12+: RTP Build	- Non-contact team practice - Position-specific drills - Contact progression - Repeated shift simulation and full practice before games

Avoid / Defer	- High-force Copenhagen or long-lever adduction early - Aggressive stretching into abduction or external rotation - Ignoring a palpable defect or large MRI gap - Goalie butterfly/RVH overload before strength and tissue tolerance are restored
Criteria to Progress	- Walking and daily activity pain-free - Palpation pain substantially resolved - Adduction strength at least 90% limb symmetry when available - Full skating, skills, and practice tolerated on repeated days - Medical team agrees conservative pathway remains appropriate

Grade 3 Clinical Note	Complete adductor longus tears can be managed nonoperatively in selected athletes, but the decision should be individualized. Large retraction, proximal tendon involvement, recurrent injury, in-season demands, and goalie-specific positional requirements should prompt shared decision-making with the physician, athlete, and performance staff.

5. Universal Rehabilitation Progression

Same framework; different entry point and speed

The following framework can be applied to all grades, with the entry point and speed of progression adjusted according to severity.

Phase	Primary Focus	Clinical Content	Advancement Theme
Phase 1	Settle and protect	Relative rest, pain control, isometric adduction, walking quality, maintain non-provocative conditioning	Pain decreasing; walking and low-level activation tolerated
Phase 2	Restore strength	Progress adductor loading from isometric to isotonic to eccentric, add glute/trunk/hip flexor/abductor strength	Squeeze and resisted adduction improving; no next-day flare
Phase 3	Load hockey positions	Split stance, lateral lunge, Copenhagens, slideboard, skating stance holds, acceleration/deceleration mechanics	Lateral movement and controlled skating tolerated
Phase 4	Return to skating	Forward skating, backward skating, crossovers, turns, stops/starts, puck handling, shooting	Skating quality maintained and next-day response quiet
Phase 5	Return to team play	Non-contact practice, small-area exposure, contact progression, repeated shift simulation, position-specific drills	Full practice and contact tolerated without symptom response

6. On-Ice Progression by Grade

Separate skating from hockey readiness

Grade	Controlled Skating	Skills Exposure	Team / Contact Exposure	Key Constraint
Grade 1	Days 3-7+ if criteria met	Week 1+	Week 1-2+	Keep volume low initially; no dense game block until next-day response is quiet
Grade 2	Weeks 2-3+	Weeks 3-5+	Weeks 4-6+	Require strength restoration before high-speed crossovers, small-area games, and contact
Grade 3	Weeks 6-8+	Weeks 8-10+	Weeks 10-12+	Use slower progression, especially for goalies and proximal tendon injuries

7. Return-to-Play Criteria

Pain-free walking is not enough

RTP should combine clinical, strength, sport-specific, and exposure-based criteria. Pain-free walking is not enough. Pain-free skating is not enough. The athlete must tolerate the specific actions that caused the injury risk in the first place.

Domain	Suggested Clearance Standard
Pain and Palpation	No sharp pain; palpation pain absent or minimal and resolving; no expanding tenderness after loading
Strength	Adduction strength at least 90% limb symmetry when available; test squeeze, eccentric adduction, and angle-specific unilateral positions when possible
Range of Motion	Hip abduction, hip rotation, and BKFO comparable to baseline or clinically acceptable; no painful stretch response
Adductor Capacity	Appropriate Copenhagen level tolerated without pain above 3/10 and without next-day symptom increase
Skating	Forward skating, backward skating, crossovers, stops/starts, tight turns, and transitions tolerated at game-like intensity
Skills	Passing, shooting, puck protection, and reactive change of direction tolerated without compensation
Practice	At least one full team practice completed without pain and without next-day response; consider more than one for Grade 2/3 or recurrent injuries
Contact	Board battles, net-front play, stick checks, and contact exposure tolerated when relevant to position and level
Readiness	Athlete reports confidence and does not avoid skating depth, crossovers, lateral push-off, or contact

8. Red Flags and Referral Considerations

When to slow down or refer

Finding	Clinical Action
Palpable defect or major weakness	Consider MRI and physician review to rule out complete tear or proximal tendon injury.
Bone-tendon junction injury or large MRI gap	Expect longer RTP; consider surgical consultation depending on athlete goals, position, and timing.
Persistent pain despite appropriate loading	Reassess diagnosis: adductor-related groin pain, pubic-related pain, iliopsoas, hip joint, abdominal wall, stress injury, or referred source.
Recurrent adductor strain	Treat as a load-capacity problem and investigate strength, workload, skating volume, recovery, and premature RTP.

9. Position-Specific Hockey Considerations

Skaters and goaltenders are different

Position	Return-to-Hockey Emphasis
Skaters	Prioritize lateral push-off, crossovers, first-three-stride acceleration, hard stops, tight turns, puck protection, shooting off both legs, and contact tolerance.
Defensemen	Add backward skating endurance, backward crossovers, forward/backward transitions, blue-line lateral movement, gap control, and contact while rotating.
Forwards	Add high-frequency acceleration, corner battles, net drives, shooting under pressure, puck protection, and repeated shift conditioning.
Goaltenders	Progress butterfly depth, lateral pushes, recovery from butterfly, RVH, post integrations, split-like positions, and repeated save recovery much more deliberately.

10. Copenhagen Adduction Progression

Dose strength without chasing soreness

Level	Exercise	When to Use	Practical Dose
Level 1	Side-lying hip adduction	Early rehab, Grade 1/2 symptoms, or regression when Copenhagen is painful	2-3 sets of 8-15 reps or timed holds
Level 2	Short-lever Copenhagen	Subacute strengthening and transition to higher adductor demand	2-3 sets of 6-12 reps, slow tempo
Level 3	Full Copenhagen adduction	Late rehab, prevention, and maintenance when symptom-free and strong enough	2-3 sets of 6-10 reps; 2 sessions/week is a useful target
Maintenance	Copenhagen/adductor strength year-round	After RTP and during high skating volume blocks	1-2 sessions/week; reduce volume during dense competition weeks

Pain-monitoring rule Pain-monitoring rule. During adductor strengthening, symptoms should generally remain 0-3/10, settle quickly, and not worsen the next day. If pain exceeds 3/10, technique changes, range reduction, lever shortening, or regression to an easier level are appropriate.

11. Hockey-Specific Clinical Pearls

Practical rules for return to hockey

1. Ask about non-time-loss symptoms. Players who keep skating with recurring groin pain may be at higher future risk even if they never missed a game.
2. Do not test only one squeeze position. Angle-specific strength testing may better reflect skating and goaltending demands than a single bilateral squeeze test.
3. Respect the 24-hour response. Adductor strength and hip rotation can be reduced after hockey exposure, so next-day response is a key progression marker.
4. Grade 1 is not always low risk. Recurrent Grade 1 symptoms often reflect a workload-capacity mismatch and should be treated before they become season-long problems.
5. Goaltenders are different. Butterfly, RVH, lateral push, and recovery positions load the adductors beyond typical skater demands.
6. Full practice is a clearance test. Completion of at least one full team practice without pain or next-day symptoms should occur before games, especially for Grade 2/3 injuries.
7. Maintain adductor strength after RTP. Strength and architectural gains can decline with detraining, so prevention must continue after the athlete is cleared.

Clinical use reminder	This guideline is intended to support clinical reasoning, not replace medical clearance or individualized management. Modify progression for injury grade, athlete response, position demands, imaging findings, and medical team recommendations.

12. Key References

Source literature used for clinical synthesis

#	Reference
1	Keshen S, Curd E, Rotenberg R, et al. Musculoskeletal Injuries in National Hockey League Goaltenders. American Journal of Sports Medicine. 2025. doi:10.1177/03635465251353229.
2	Wörner T, Thorborg K, Clarsen B, Eek F. Incidence, Prevalence, and Severity of and Risk Factors for Hip and Groin Problems in Swedish Male Ice Hockey Players. Journal of Athletic Training. 2022;57(1):72-78. doi:10.4085/1062-6050-0522.20.
3	Suits WH, O'Neil MM, Fogarty KJ. Acute Effects of Ice Hockey on Hip Range of Motion, Strength, and Pelvic Tilt in Competitive Male Players. Sports Health. 2024;16(4):616-621. doi:10.1177/19417381231190649.
4	Secomb JL, Kelly M, Dascombe BJ. Hip Strength Profiling of Ice Hockey Athletes Across Various Joint-Specific Angles. Journal of Strength and Conditioning Research. 2023;37(7):e422-e429. doi:10.1519/JSC.0000000000004420.
5	Thorborg K. Current Clinical Concepts: Exercise and Load Management of Adductor Strains, Adductor Ruptures, and Long-Standing Adductor-Related Groin Pain. Journal of Athletic Training. 2023;58(7-8):589-601. doi:10.4085/1062-6050-0496.21.
6	Serner A, Weir A, Tol JL, et al. Associations Between Initial Clinical Examination and Imaging Findings and Return-to-Sport in Male Athletes With Acute Adductor Injuries. American Journal of Sports Medicine. 2020;48(5):1151-1159. doi:10.1177/0363546520908610.
7	Serner A, Hölmich P, Tol JL, et al. Progression of Strength, Flexibility, and Palpation Pain During Rehabilitation of Athletes With Acute Adductor Injuries. Journal of Orthopaedic & Sports Physical Therapy. 2021;51(3):126-134. doi:10.2519/jospt.2021.9951.
8	Farrell SG, Hatem M, Bharam S. Acute Adductor Muscle Injury: A Systematic Review on Diagnostic Imaging, Treatment, and Prevention. American Journal of Sports Medicine. 2023;51(13):3591-3603. doi:10.1177/03635465221140923.
9	Quintana-Cepedal M, de la Calle O, Medina-Sánchez M, Crespo I, Olmedillas H. The Dose-Response of the Copenhagen Adduction Exercise on Adductor Strength in High-Level Youth Hockey Players. Journal of Sports Sciences. 2024;42(24):2326-2332. doi:10.1080/02640414.2024.2430875.
10	Tyler TF, Nicholas SJ, Campbell RJ, Donellan S, McHugh MP. The Effectiveness of a Preseason Exercise Program to Prevent Adductor Muscle Strains in Professional Ice Hockey Players. American Journal of Sports Medicine. 2002;30(5):680-683. doi:10.1177/03635465020300050801.