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Hip Arthroscopy

Post-Operative Rehabilitation Protocol

Femoroacetabular impingement ± labral repair | Evidence-informed, criteria-based rehabilitation for physiotherapists | Revised Sept 2026

PRIMARY EMPHASIS	PROGRAM FORMAT	INTENDED USE
Protect repair + restore motion	5 phases / criteria-based	Clinician-guided rehabilitation

Purpose and clinical approach

This protocol is intended for primary hip arthroscopy for femoroacetabular impingement, with or without labral repair, and should be modified for the exact operative procedure.

Time since surgery is a biological constraint, not the sole progression criterion. Advancement should combine tissue-healing precautions, pain and irritability, gait, range of motion, objective strength, movement quality, functional performance and patient-reported readiness. Current literature remains heterogeneous; many postoperative restrictions and return-to-sport thresholds are supported mainly by consensus, cohort data and clinical commentaries rather than high-level comparative trials.

SURGEON-SPECIFIC RESTRICTIONS OVERRIDE THIS DOCUMENT. Confirm the procedure on the post op physiotherapy referral before the first physiotherapy visit. Microfracture/cartilage restoration, capsular plication, gluteus medius repair or other concomitant procedures may require slower weight-bearing, ROM and loading progression.

Evidence-informed principles

- Protect repaired labrum, capsule and chondral surfaces early while avoiding unnecessary immobilization. Early controlled motion and foot-flat protected weight bearing are commonly used, but exact restrictions are procedure-specific.
- Restore comfortable ROM progressively; avoid aggressive stretching or repeated end-range flexion/adduction/internal rotation that reproduces a pinch. Following anterior capsular repair/plication, limit excessive extension and external rotation during early healing.
- Minimize iliopsoas overload early. Avoid repeated active straight-leg raising and high-volume hip-flexor dominant exercise until gait and basic hip/trunk control are established.
- Train the trunk and hip together: lumbopelvic control, gluteal activation, hip abductors/extensors/rotators, then integrated squat, hinge, step and single-leg patterns.
- Progress from controlled strength to deceleration, plyometrics, running, change of direction and sport-specific loading. Do not use time alone to clear running or sport.
- Use objective outcomes when available: iHOT-12/iHOT-33, HOS or HAGOS; HHD/isokinetic strength; Y-Balance; step-down/single-leg squat quality; hop testing; and sport-specific conditioning.

Early postoperative red flags

- Wound drainage, progressive erythema, systemic illness or concern for infection.
- Calf swelling/pain, chest pain, shortness of breath or concern for venous thromboembolism.
- New neurological deficit, severe uncontrolled pain, inability to progress weight bearing as expected, or a sudden loss of function.
- Persistent mechanical locking/catching, rapidly increasing rest/night pain, or a substantial deterioration after an initially improving course.

Load-response rule: A mild, short-lived muscular response can be acceptable, but exercise should not reproduce sharp joint pain or persistent pinching. If pain, limp, swelling or stiffness is meaningfully worse later that day or the next morning, reduce range, resistance, volume or complexity and reassess technique.

Procedure-specific protection: check before progressing

Procedure / finding	Typical protection emphasis	Rehabilitation implication
Labral repair	50% weight bearing (WB) 4 weeks; avoid stressing repaired region. Ensure no limping.	Progress WB and ROM according to repair location/extent; anterior repair commonly warrants early ER/extension protection.
Femoral/acetabular osteoplasty	50% WB 4 weeks. Ensure no limping.	Avoid premature impact; restore gait and strength before running.
Capsular closure / plication	Protect extension and ER early. Ensure no limping.	Avoid aggressive anterior capsule stretching; progress rotation deliberately.
Microfracture / cartilage restoration	Protected 50% WB 6 weeks. Ensure no limping.	Delay loaded CKC progression and impact; surgeon instructions determine exact timeline.
Labral reconstruction / revision arthroscopy	Protected 50% WB 6-8 weeks. Ensure no limping.	Use procedure-specific restrictions and later functional progression.

Five-phase rehabilitation pathway

Phase	Typical window	Primary goal	Key exit concept
1 - PROTECT / MANAGE	0-4 weeks	Protect repair, settle pain/swelling, restore early motion	Safe gait within 50% WB restriction; controlled early ROM and activation
2 - RESTORE	4-8 weeks	Normalize gait/ROM; build foundational trunk and hip control	Non-antalgic gait; functional ROM; controlled squat/hinge/step. Keep walking aids if limp.
3 - DEVELOP	8-16 weeks	Build strength, endurance and dynamic single-leg control	~90% strength target where appropriate; impact-readiness criteria
4 - PREPARE	4-6 months	Running, plyometrics, power, agility and sport preparation	Objective RTS battery trending ≥90% with quality and symptom tolerance
5 - RETURN / PERFORM	>6 months	Graded unrestricted practice and performance	Full-speed sport demands, fatigue tolerance, readiness and surgeon clearance

Phase 1 - Protect repair and restore early motion

Typical window: postoperative day 1 to ~3 weeks. Goals: protect repaired tissue, control pain and swelling, maintain safe mobility, restore early pain-free ROM within restrictions, initiate trunk/gluteal activation, and establish an efficient protected gait.

Precautions and mobility

Domain	Guideline	Clinical notes
Weight bearing	Use crutches and the surgeon-prescribed 50% WB status.	Avoid true NWB; hip-flexor activity used to hold the limb off the floor may increase joint compression and irritability. Goal is to normalize gait motion but max 50% WB.
ROM	Use gentle PROM/AAROM within operative restrictions.	Avoid forcing flexion, ER or extension. Circumduction and comfortable cycling can support early motion when permitted.
Sitting / ADLs	Avoid low soft chairs, prolonged sitting and pivoting on the operative limb.	Change position regularly; use higher seating initially.

Domain	Guideline	Clinical notes
Hip flexor	Avoid active SLR and repeated resisted hip flexion early.	Watch for anterior hip pain/iliopsoas irritation.
Stretching	No ballistic or aggressive stretching.	Mobility should be comfortable and controlled.

Exercise menu

Exercise	Technique / intent	Dose	Progression / modification
Ankle pumps + circulation	Frequent ankle motion; short walking bouts 50% WB restriction	20-30 reps, several times/day	Increase ADL walking only if gait and symptoms remain controlled
Gentle hip circumduction	Passive small circles in comfortable flexion	2-3 x 30-60 sec	Increase arc gradually; never force
Upright bike - no resistance	High seat; smooth cadence; no pinching	5-15 min, if surgeon permits	Increase time before resistance
Glute set	Supine/prone; gentle bilateral contraction without lumbar extension	2-3 x 8-12, 5-sec hold	Bridge only when cleared and hip flexor quiet
Quadriceps set	Full knee extension; avoid compensatory hip flexion	2-3 x 10-15	Add terminal knee extension in standing later
Dead-bug heel slide / abdominal brace	Ribs stacked; move heel without pelvic rotation	2-3 x 6-10/side	Longer lever only if no hip-flexor irritation
Supported weight shift	Side-to-side / forward-back within WB restriction	2 x 60-90 sec	Progress toward symmetrical loading when cleared

Phase 1 progression criteria

- Incisions healing and postoperative pain/swelling controlled; no red flags.
- Compliant with 50% weight-bearing and ROM precautions.
- Able to perform basic transfers and protected gait without repeated hip hiking or excessive trunk compensation.
- Early ROM progressing without sharp pain or persistent pinching.
- Able to activate gluteal and deep trunk musculature without dominant hip-flexor substitution.

Phase 2 - Restore gait, motion and foundational strength

Typical window: 4-8 weeks. Goals: progress weight bearing, normalize walking mechanics, restore functional ROM, improve trunk/pelvic control, develop hip abductor/extensor endurance, retrain balance and basic movement patterns, and build low-impact cardiovascular fitness.

ROM, gait and cardiovascular progression

- Wean crutches only when permitted and when the patient can walk without a meaningful limp, Trendelenburg pattern or pain escalation.
- Progress PROM/AAROM to active ROM. Use quadruped rock-back, heel slides and controlled rotation rather than forceful end-range stretching.
- Bike: progress duration, then light resistance. Pool walking/aquatic exercise may be added once wounds are fully healed.
- Manual therapy, when used, should be gentle and directed at restoring comfortable motion; avoid high-velocity hip manipulation during early healing.

Core and hip strength

Exercise	Technique / intent	Dose	Progression	Modify if symptomatic
Bridge	Ribs down; hip extension from glutes	3 x 8-15	Band abduction -> marching bridge	Reduce lift / return to glute set

Exercise	Technique / intent	Dose	Progression	Modify if symptomatic
Knee-supported side plank	Shoulder-hip-knee line; pelvis stacked	3 x 15-30 sec/side	Long-lever side plank	Wall side plank
Bird dog	Reach long; resist pelvic rotation	2-3 x 6-10/side	3-sec holds / band	Move one limb only
Standing hip abduction	Tall pelvis; no trunk lean	2-3 x 10-15/side	Band/cable resistance	Wall press isometric
Lateral band walk	Shallow athletic stance; quiet feet	2-3 x 8-12 steps each way	Lower band / more tension	Higher stance / lighter band
Sit-to-stand / squat to box	Hip-knee-foot alignment; comfortable depth	3 x 8-12	Lower box / add load	Higher surface
Step-up	Whole foot; pelvis level; controlled lower	3 x 8-12/side	Higher step / load	Lower step / rail

Proprioception and movement control

Exercise	Technique / intent	Dose	Progression
Single-leg stance	Tripod foot; level pelvis; light hand support initially	3 x 20-30 sec	No support -> head turns -> reach
Clock taps	Stand on involved limb; tap free foot in multiple directions	2 x 4-6/direction	Increase reach / reduce support
Hip hinge to wall	Push hips back; neutral trunk; shin relatively vertical	3 x 8-12	Add light external load
Split squat - supported	Vertical pelvis; comfortable hip depth	3 x 6-10/side	Reduce hand support -> add load

Phase 2 progression criteria

- Full weight bearing when permitted, with non-antalgic gait and no clinically meaningful Trendelenburg pattern.
- Comfortable functional ROM; mild residual stiffness may be acceptable if steadily improving.
- 10 controlled sit-to-stands/squats and step-ups without hip pinch or repeated pelvic collapse.
- Single-leg stance 30 seconds with level pelvis and good foot/knee control.
- Hip abduction/adduction/IR/ER strength trending toward ≥75-80% limb symmetry when HHD testing is appropriate.
- Exercise load can progress without a meaningful next-day flare.

Phase 3 - Develop strength, endurance and dynamic single-leg control

Typical window: ~8-16 weeks. Goals: restore higher-capacity hip and trunk strength, improve eccentric control, integrate multiplanar loading, develop single-leg control, and prepare for impact and running.

Progressive strength

Exercise	Technique / intent	Dose	Progression
Loaded squat	Comfortable depth; symmetrical pressure; pelvis controlled	3-4 x 6-10	Increase load before chasing depth
Split squat / reverse lunge	Control femur and pelvis; avoid painful pinch	3-4 x 6-10/side	Dumbbells -> rear-foot elevated if appropriate
Single-leg RDL	Hinge around stance hip; pelvis square	3-4 x 6-10/side	Increase external load
Lateral step-down	Slow 3-sec lowering; knee tracks over foot	3 x 6-10/side	Increase step height / load
Hip thrust	Finish with glutes, not lumbar extension	3-4 x 6-12	Increase load -> single-leg variation
Standing cable/band abduction	Stable stance; controlled return	3 x 8-15/side	Increase load / lever
Side plank + hip abduction	Maintain trunk line and pelvic control	3 x 6-10 or 20-40 sec	Band resistance
Suitcase carry	Tall gait; resist lateral trunk shift	3 x 20-40 m/side	Increase load/distance

Dynamic balance and deceleration

Exercise	Dose	Key standard
Y-Balance / star reach practice	2-3 x 3-5 each direction	Maintain tripod foot and level pelvis; improve symmetry
Single-leg squat to target	3 x 6-10	No repeated trunk shift, pelvic drop or dynamic knee collapse
Step-and-hold / low amplitude landing	2-3 x 4-6/direction	Quiet landing; stabilize 2-3 sec
Lateral bound-and-stick	3 x 4-6/side	Begin small; absorb through hip/knee/ankle

Impact and return-to-run readiness

Running should be criteria-based and surgeon-cleared rather than started automatically at a fixed week. In many contemporary protocols, low-amplitude impact is introduced around 12 weeks and running follows when symptoms, strength and movement criteria are met.

- Full or near-full pain-free functional ROM; no persistent joint pinch.
- Normal walking gait and ability to brisk-walk 30 minutes without symptom escalation.
- Good single-leg squat/step-down mechanics through repeated trials.
- Hip strength preferably $\geq 80\%$ LSI before sustained running; $\geq 90\%$ is a stronger target for higher-demand athletes.
- Tolerates low-amplitude bilateral and then unilateral pogo/landing drills without pain, apprehension or next-day flare.
- No procedure-specific restriction that delays impact (especially cartilage restoration/microfracture).

Example graded return-to-run

Stage	Session	Advance when
1	Walk 4 min / jog 1 min x 5	No pain/limp during; baseline by next morning
2	Walk 3 min / jog 2 min x 5	Same response rule
3	Walk 2 min / jog 3 min x 5	Same response rule
4	Walk 1 min / jog 4 min x 5	Same response rule
5	Continuous easy run 20-30 min	No reactive symptoms; mechanics maintained

Running progression: Use level, predictable surfaces initially. Increase duration before speed. Avoid adding running volume, heavy lower-body strength and new plyometric volume simultaneously.

Phase 4 - Prepare for sport and high-level activity

Typical window: ~4-6 months. Goals: develop power, rate of force development, repeated landing/deceleration capacity, multidirectional movement, planned and reactive change of direction, and sport-specific conditioning.

Power and plyometric progression

Level	Examples	Progression standard
1 - Bilateral	Pogo, snap-down, squat jump, low box landing	Quiet symmetrical landing; no pain or next-day flare
2 - Unilateral controlled	Step-off stick, single-leg pogo, forward/lateral hop-and-stick	Pelvis/knee/foot controlled; no apprehension
3 - Repeated / multiplanar	Repeated hops, lateral bounds, rotational bounds	Maintain mechanics under increasing speed and fatigue
4 - Sport-specific	Acceleration/deceleration, cutting, reactive agility, position-specific drills	Full-speed quality, appropriate conditioning and load tolerance

Strength and movement targets before unrestricted sport

- Pain-free ROM appropriate for the sport; when comparing sides, consider contralateral morphology and baseline limitations.
- HHD or isokinetic hip strength $\geq 90\%$ LSI in abduction, adduction, flexion/extension and rotation when feasible.
- Y-Balance: anterior reach difference < 4 cm and strong overall symmetry; interpret alongside movement quality.
- Hop testing (forward/triple/medial/lateral as appropriate): generally $\geq 90\%$ LSI, with acceptable landing strategy and no pain.
- Single-leg drop landing, step-down and squat demonstrate stable pelvis/femur mechanics, including under fatigue.
- Patient-reported function/readiness should be high; iHOT-12/HOS-Sport and psychological readiness can identify residual limitations not captured by strength alone.

Suggested objective test battery

Domain	Test	Suggested criterion / interpretation
ROM	Active + passive hip ROM	Pain-free; within $\sim 5^\circ$ of contralateral side when contralateral hip is a valid reference
Strength	HHD in major hip planes	$\geq 90\%$ LSI; also inspect absolute force and compensations
Trunk/hip capacity	Single-leg bridge; side plank; front plank	Quality + endurance; compare sides rather than relying on a single cutoff
Dynamic balance	Y-Balance	$> 94\%$ symmetry and anterior reach difference < 4 cm is a commonly proposed RTS threshold
Movement quality	Step-down / single-leg squat	Minimal deviations across repeated trials
Hop / power	Triple, medial, lateral hop tests	$\geq 90\%$ LSI plus good landing mechanics
PROs	iHOT-12; HOS-Sport; Hip-RSI if available	Use serially; proposed RTS frameworks often target $\sim 90\%$, but no universally validated cutoff exists
Time / healing	Postoperative interval	High-demand RTS generally not before ~ 5 -6 months; many athletes return later

Important limitation: No return-to-sport battery has yet been fully validated for hip arthroscopy. LSI can also overestimate readiness if the uninvolved limb is deconditioned. Use symmetry together with absolute strength, movement quality, workload tolerance, sport demands and clinical judgment.

Phase 5 - Return to sport, activity and performance

Typical window: > 6 months, individualized. The goal is not simply to 'pass' a test but to tolerate the progressive volume, intensity, speed, contact and fatigue demands of the intended activity.

Graded sport integration

- Individual skill work $\rightarrow$ controlled team drills $\rightarrow$ non-contact or limited-contact practice where relevant $\rightarrow$ full practice $\rightarrow$ restricted competition exposure $\rightarrow$ normal competition load.
- Increase one major training variable at a time: volume, intensity/speed, complexity, contact or frequency.
- Monitor 24-hour response: joint pain, stiffness, limp, loss of ROM and decline in movement quality are signals to reduce load.
- For cutting/pivoting athletes, include planned change of direction before reactive/unplanned agility and progress toward sport-specific approach speeds and angles.
- For endurance athletes, rebuild weekly running/cycling volume before high-intensity intervals and competition-specific density.
- For high-level athletes, consider force-plate or 3D biomechanical assessment when available, particularly when asymmetry or movement-quality concerns persist.

Return-to-sport clearance checklist

Criterion	Target
Symptoms	No clinically important pain, catching, instability or reactive next-day flare with full training progression
ROM	Pain-free functional ROM appropriate for sport

Criterion	Target
Strength	≥90% LSI in key hip planes; higher-level athletes should also meet sport-appropriate absolute strength targets
Balance / control	Y-Balance and single-leg movement quality acceptable
Power / hop	≥90% LSI on selected hop tests with good landing mechanics
Running / COD	Full-speed linear running, deceleration and sport-specific change of direction without symptoms
Fitness	Conditioning adequate for expected practice and competition demands
Readiness	Athlete reports confidence/readiness; PROs demonstrate minimal residual limitation
Medical	Surgeon clearance and no unresolved procedure-specific restriction

Common postoperative problems and rehabilitation responses

Problem	Common contributors	Rehabilitation response
Anterior hip / iliopsoas irritation	Too much active hip flexion, SLR, high cycling load, rapid walking/running progression	Reduce hip-flexor volume; restore glute/trunk contribution; adjust bike and sitting; reload gradually.
Lateral hip pain	Rapid WB increase, pelvic drop, excessive side-lying compression or abductor volume	Modify compression/load; improve gait; dose abductors progressively.
Persistent stiffness	Overprotection, inadequate early controlled motion, guarding	Reassess operative restrictions; use frequent gentle ROM; consider surgeon review if plateauing.
Pinching with flexion	Excessive depth, poor pelvic control, irritability	Reduce depth; improve hinge/pelvic strategy; do not force impingement range.
Trendelenburg / limp	Insufficient abductor capacity, pain inhibition, premature crutch weaning	Restore assistive device temporarily if needed; targeted abductor and gait retraining.
Next-day flare after strengthening	Too much load/volume/novelty	Reduce 20-30%; maintain tolerable exercises; rebuild one variable at a time.

Recommended outcome tracking

Time point	Patient-reported	Objective
Pre-op / baseline	iHOT; pain; activity goals	ROM; gait; HHD strength; squat/step-down; balance
6-8 weeks	Pain/irritability; iHOT as useful	ROM; gait; early strength; single-leg balance
12-16 weeks	Function and confidence	HHD strength; Y-Balance; step-down; impact readiness
4-6 months	iHOT; psychological readiness	Strength; hop/power; landing; running/COD
>6 months / RTS	Sport function, confidence, workload tolerance	Full RTS battery; conditioning; sport-specific testing

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