

Rehabilitation Protocol for Hip Arthroscopy for Femoroacetabular Impingement

This protocol is intended to guide clinicians through the post-operative course for Hip Arthroscopy for Femoroacetabular Impingement (FAI) and osteochondroplasty. This protocol is time based (dependent on tissue healing) as well as criterion based. Specific intervention should be based on the needs of the individual and should consider exam findings and clinical decision making. The timeframes for expected outcomes contained within this guideline may vary based on surgeon's preference, additional procedures performed, and/or complications. If a clinician requires assistance in the progression of a post-operative patient, they should consult with the referring surgeon.

The interventions included within this protocol are not intended to be an inclusive list of exercises. Therapeutic interventions should be included and modified based on the progress of the patient and under the discretion of the clinician.

Post-Operative Considerations:

Many different factors influence the post-operative management of hip labrum repair for FAI rehabilitation outcomes, including if a labrum was repaired or reconstructed. If the labral tissue is inadequate the surgeon may reconstruct the labrum using an autograft or allograft. This information can be accessed in the operative note and will impact rehabilitation. It is recommended that clinicians collaborate closely with the referring physician. One surgical technique that merits special consideration in post-operative rehabilitation is capsular closure. Capsular closure is performed to restore the normal anatomy and minimize the risk of postoperative issues with instability. With the capsular repair closure technique, it is necessary to protect and limit hip external rotation and extension in the early healing phase to protect the integrity of the repair. Capsular integrity has been correlated to improved outcomes after hip arthroscopy with FAI correction.

If the patient develops a fever, unresolving numbness/tingling, excessive drainage from the incision, uncontrolled pain or any other symptoms you have concerns about, the referring physician should be contacted.

Throughout the rehabilitation, particularly in the early phases, every effort should be made to avoid: hip flexor tendinitis, synovitis of operative joint, trochanteric bursitis, or lower back pain or sacroiliac pain.

PHASE I: IMMEDIATE POST-OP (0-2 WEEKS AFTER SURGERY)

Rehabilitation Goals	- Minimize pain and inflammation - Protect integrity of repair - Avoid post-operative adhesions - Improve pain-free AROM/PROM within stated parameters - Attain non-analgesic gait with use of device and appropriate weight bearing - Address muscle inhibition - Patient independence with initial home exercise program
Weight Bearing	Partial weightbearing 20 lbs, foot-flat, step-to gait pattern with crutches
Range of Motion Limitations	- Hip Flexion: 0-90 deg - Hip Extension: 0 degrees, no motion beyond neutral - Hip Abduction: 0-30 degrees - Hip External Rotation: 0-30 degrees - Hip Internal Rotation: 0-30 degrees

Precautions/ Guidelines	• No active straight leg raises • No active hip flexion for days 0-21, hip flexion should be self-assisted for functional mobility • Avoid ambulation to fatigue or pain • No grade III-IV hip joint mobilization • No long axis hip distraction for <u>labral repair</u> or <u>labral reconstruction</u> • Avoid pain and pinching in the hip at all times
Interventions	<i>Patient Education</i> • Activity modification, bed mobility, positioning: ○ No crossing of legs ○ Avoid sitting for more than 30 minutes for first 2 weeks, vary position frequently throughout the day. Gradually increase sitting time as tolerated after first 2 weeks. ○ Sit with hip angle less than 90 degrees by sitting on a highchair or sit slightly reclined ○ Prone lying 15 minutes 2-3 times per day to avoid hip flexor contracture ○ Assist operative leg when getting in/out of bed, in/out of car and for all functional mobility ○ Consider obtaining raised toilet seat to avoid hip flexion greater than 90 degrees when sitting on toilet <i>Manual Therapy</i> • Soft tissue mobilization as appropriate for quadriceps, hamstrings, TFL, gluteus medius, iliacus, psoas, quadratus lumborum, lumbar paraspinals. Avoid suture sites until sutures removed and incisions healed. • Joint mobilizations to lumbar spine/sacrum to address lumbosacral dysfunction as indicated • Grade I-II hip joint mobilizations for pain modulation as appropriate <i>Range of motion/Mobility</i> • PROM small range hip circumduction at 70° Hip Flexion • PROM log rolls to internal rotation/external rotation up to 30 degrees IR/ER <i>Gait Training</i> • Gait training with B axillary crutches maintaining indicated weight bearing • Stair training with step to pattern, maintaining indicated weight bearing with rail/assistive device <i>Modalities</i> • Cryotherapy as needed • Electrical stimulation for pain management as needed <i>Therapeutic Exercise</i> • Supine Ankle Pumps • Supine Quad Set • Supine Glute Set • Prone Knee Flexion • Transversus Abdominis Activation Hooklying • Passive Supine Hip Flexor Stretch (not beyond neutral hip extension) <i>Cardiovascular Exercise</i> • Upright bike up to 20 minutes, 2 x per day, seat slightly elevated if needed to minimize excessive hip flexion and maintain ROM precaution, no/light resistance
Criteria to Progress	• Minimal pain with ambulation • Non-antalgic gait with use of crutches • Minimal pain at rest

	• Patient able to perform exercise program without increase in baseline pain • Patient compliant with weight bearing, home exercise program, and activity precautions
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PHASE II: INTERMEDIATE POST-OP (3-5 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Progress weight bearing as appropriate per timeline • Attain non-analgesic gait without use of assistive device • Progress ROM as tolerated per protocol • Minimize pain and inflammation • Protect integrity of repair • Avoid post-operative adhesions • Address muscle inhibition • Patient independence with home exercise program
Weight Bearing	• Gradually increase weight bearing to WBAT pain-free • Wean from crutches by 6-8 weeks as tolerated.
Range of Motion Limitations	• Flexion: gradually increase as able in pain free manner • Extension: 0-10 degrees • Abduction: 0-45 degrees • External Rotation: 0-45 degrees • Internal Rotation: 0-45 degrees
Precautions/Guidelines	• No active straight leg raises • No grade III-IV hip joint mobilization • No long axis hip distraction for <u>labral repair</u> or <u>labral reconstruction</u> • Avoid pain and pinching in the hip at all times • Avoid functional activities that cause hip pain
Additional Interventions <i>*Continue with Phase I interventions as indicated</i>	<i>Manual Therapy</i> • Scar mobilization to portal scars as appropriate • PROM all motions within allowed ROM <i>Gait Training</i> • Increase to weightbearing as tolerated with bilateral axillary crutches and normalize gait pattern. Avoid contralateral pelvic drop. • As tolerated decrease to single crutch and normalize gait pattern. <i>Therapeutic Exercise</i> • <u>Quadruped Rocking</u> • <u>Hip rotations on stool IR/ER</u> • <u>Prone B hip IR</u> • <u>Hook-lying Lumbar Rotation</u> (small range) • <u>Hip ABD/ADD Isometrics Hook-lying</u> • <u>Hook-lying Gluteal Set</u> • <u>Standing Knee Flexion</u> • <u>Quadruped Hip Extension Knee Slides for Operative Leg w/TrA Activation</u> • <u>Quadruped 'Cat and Camel'</u> • <u>Bilateral Bridging</u> • <u>Standing Hip Abduction</u> • <u>Sidelying Clamshell in Neutral</u> • <u>Quadruped Hip Extension for Operative Leg</u> • <u>Standing Hip Extension to Neutral</u> • <u>Counter Plank/Plantar-grade Plank</u> • <u>Single Leg Balance</u> if able to maintain level pelvis • <u>Hip Internal Rotation Prone with Resistance</u> • <u>Supine Modified Thomas Stretch</u> (operative leg straight) • <u>Sidelying Piriformis Stretch</u>

	<i>Cardiovascular Exercise</i> Upright bike up to 20 minutes, 2 x per day with seat slightly elevated to minimize excessive hip flexion, no resistance
Criteria to Progress	- ROM within functional limits - Ascend/descend 8-inch step with good pelvic control - Good pelvic control during single-limb stance - Normalized gait without an assistive device - No joint inflammation, muscular irritation, or pain - Good neuromuscular control and optimal muscle firing patterns

PHASE III: LATE POST-OP (6-11 WEEKS AFTER SURGERY)

Rehabilitation Goals	- Progression of exercise program without hip pain - Normalize hip ROM through appropriate ROM progression as outlined - Good activation of hip musculature without evidence of muscle inhibition - Normalized soft tissue of hip and lumbopelvic region - Normal gait without evidence of gait deviations
Weight Bearing	Should be ambulating with proper gait without assistive device to progress to this phase
Range of Motion	- Continue to increase hip flexion gradually in a pain-free manner - Increase hip extension, abduction, external rotation, and internal rotation ROM to full as tolerated
Precautions/Guidelines	- No active straight leg raises (until 8 weeks) - No Grade III-IV hip joint mobilization (until 8 weeks post-op) - No long axis hip distraction (until 8 weeks for labral repair and 12 weeks for labral reconstruction) - No extreme combined ROM (e.g. flexion/IR, flexion/ER) - No plyometrics - No running - No squatting below 90 degrees - Avoid painful ROM - No pivoting on operative leg - Avoid symptom provocation during ambulation, ADLs, or therapeutic exercise and avoid post-activity soreness - Avoid pinching in operative hip with range of motion exercises and exercises
Additional Interventions <i>*Continue with Phase I-II Interventions as indicated</i>	<i>Manual Therapy</i> - Grade III-IV hip joint mobilization as needed to address joint hypomobility - Long axis hip distraction if needed beginning at 8 weeks for labral repair - No long axis hip distraction for first 12 weeks for labral reconstruction <i>Gait Training</i> - Normalize gait without device. - If patient has pain with ambulation continue to use 1 crutch and wean as tolerated <i>Therapeutic Exercise</i> <i>Gradually introduce below exercises as tolerated ensuring proper form</i> <u>Submaximal hip flexor isometrics</u> <u>Sidelying Hip Abduction</u> <u>Bridge with Alternating Leg Extension</u> <u>Side Plank- modified (knees/forearm)</u> <u>Modified Plank (knees/forearms)</u> <u>Quadruped Alternating Leg Extension (progress to opposite arm/leg as tolerated)</u> <u>Partial Range Squats (gradually increase to 90 degree squats)</u> <u>Prone Hip Extension</u> <u>Single Leg Forward Weight Shifts (progressing to Romanian dead lift)</u> <u>Lateral Band Walk</u> <u>Backwards Monster Walk with Band</u>

	• Banded Hip Clamshell • Single Leg Balance with Clock Taps • Single Leg Balance with Hip ABD and Band Resistance • Single Leg Balance with Hip Ext and Band Resistance • Paloff Press <i>Cardiovascular Exercise:</i> • Upright stationary bicycle: gradually increase time and resistance as tolerated • Elliptical training: pedaling forward and backward if pain-free, gradually increase time and resistance as tolerated • Swimming: initiate flutter kick as tolerated, avoid frog kicking
Criteria to Progress	• ROM at least 90% contralateral side, pain-free • Reciprocal Ascend/Descend 8-inch step with good pelvic control no UE support • Good pelvic control during single-limb stance and dynamic balance • Normalized gait pain-free without an assistive device • No pain at rest, ADL/IADL nor walking • Strength of operative hip 75% of contralateral hip • No joint inflammation, muscular irritation, or pain • Good neuromuscular control and optimal muscle firing patterns

PHASE IV: TRANSITIONAL (12+ WEEKS AFTER SURGERY)

Rehabilitation Goals	• Independence with home exercise program • Optimize ROM • $\geq$ to 4/5 LE strength, $\geq$ to 4/5 trunk strength • Improved dynamic balance • Pain-free hip flexion with ADLs and functional mobility • Initiate treadmill running if criteria to do so achieved and cleared by surgeon
Range of Motion	• If full hip ROM still not attained, continue to progress as tolerated
Precautions/Guidelines	• No extreme combined ROM (e.g. flexion/IR, flexion/ER) • No running • No squatting below 90 degrees • Avoid painful ROM • Avoid extreme combined hip ROM • No symptom provocation during ambulation, ADLs, or therapeutic exercise • Avoid pinching in operative hip with range of motion exercises
Additional Interventions <i>*Continue with Phase I-III interventions as indicated</i>	<i>Manual Therapy</i> • Long axis hip distraction if needed for labral reconstruction <i>Therapeutic Exercise</i> • Progressive lower extremity and core exercises- progress exercises from prior phases by increasing challenge and resistance • Advanced balance exercises as appropriate for sport or desired recreation • Initiate sport specific plyometrics and agility exercises as appropriate • Progress core strengthening as deemed appropriate by therapist <i>Cardiovascular Exercise</i> • Continue to progress time and intensity with above cardiovascular activity
Criteria to Progress	• Y Balance Test limb symmetry index 80% of uninvolved side • Strength of operative hip 90% of uninvolved side • Perform progressed exercise program without pain • No joint inflammation, muscular irritation, or pain

PHASE V: EARLY RETURN TO SPORT (4+ MONTHS AFTER SURGERY)

Rehabilitation Goals	<i>Please note: Individuals who do not engage in higher level activities may not need to progress to advanced and sport specific activities.</i> - Progress to sport specific training without pain - Progress to jogging without pain when cleared by surgeon - Independent home exercise program 5/5 LE strength and trunk strength - Normal Muscle Length of B LE - Good, dynamic unilateral balance of operative extremity - Pain-free with all activities
Precautions/Guidelines	- Avoid pain in hip joint with functional activities or exercises - If post-exercise joint pain or limping occurs, activity level should be modified/decreased - Avoid joint inflammation - Focus on quality of movement and exercise
Additional Interventions <i>*Continue with Phase II-IV interventions as indicated</i>	<i>Manual Therapy</i> - Continue from prior phases as needed <i>Therapeutic Exercise</i> - Progress strength, proprioception, dynamic balance, agility, and power to address sport specific demands. Sport specific retraining as tolerated. - Add dual-task activities including cognitive dual-task <i>Cardiovascular Exercise</i> - Continue to progress time and intensity with above cardiovascular activity - Swimming: gradually progress time and swimming strokes at tolerated - Jogging: initiate return to run program at 16-18 weeks as indicated by referring surgeon and patient status. - Must meet above criteria as well as ability to perform SL hop with no contralateral pelvic drop, genu valgum, or pain
Criteria for Discharge	- Cross over triple hop for distance 90% of uninvolved side - Y Balance Test Limb symmetry index 80% of uninvolved side - Patient able to jog 30 minutes - Patient able to perform sport specific drills without pain - Good neuromuscular control and optimal muscle firing patterns <i>Outcome Measures:</i> - Hip Outcome Score (HOS) - If unavailable, Lower Extremity Functional Scale (LEFS) may be used

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Contact	Please email MGHSportsPhysicalTherapy@partners.org with questions specific to this protocol
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References:

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