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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. 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:

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. Additionally, the clinician should consider whether the 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.

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.

Procedures Performed:

☐ Acetabuloplasty
☐ Labral repair
☐ Labral debridement
☐ Labral reconstruction
☐ Chondroplasty
☐ Microfracture
☐ Fibrin glue repair
☐ Femoroplasty
☐ Capsular repair
☐ Iliopsoas Release
☐ Endoscopic Trochanteric Bursa Excision
☐ Endoscopic Abductor Repair

Specific Case Complexity and Limitations**:**
☐***Primary Procedure***
☐***Revision Procedure***
Comments: _____

Pace of Protocol:
☐**ROUTINE**
☐**LESS-AGGRESSIVE**
Comments: _____

PHASE I: IMMEDIATE POST-OP (0-3 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-antalgic gait with use of device and appropriate weight bearing • Address muscle inhibition • Patient demonstrates independence with initial home exercise program
Weight Bearing	• Partial weightbearing 20 lbs, step-to pattern, foot flat gait 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 • Avoid ambulation to fatigue or pain • No active hip flexion for days 0-21, hip flexion should be self-assisted for functional mobility • No Gr III-IV hip joint mobilization for 1st 8 weeks • No long axis hip distraction for first 8 weeks for labral repair • No long axis hip distraction for first 12 weeks for labral reconstruction • Avoid pain and pinching in the hip at all times Throughout rehabilitation period every effort should be made to avoid: • Hip flexor tendinitis • Synovitis of operative joint • Trochanteric bursitis • Lower back pain or sacroiliac pain

Interventions	*Patient Education*
	• 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
	
	Manual Therapy
	• 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
	• Gr I-II hip joint mobilizations for pain modulation as appropriate
	• Initiate small range hip circumduction and passive IR as indicated below
	
	Range of motion/Mobility
	• PROM small range hip circumduction at 70° Hip Flexion
	• PROM log rolls to internal rotation/external rotation
	
	Gait Training
	• Gait training with B axillary crutches maintaining indicated weight bearing

	• Stair training with step to pattern, maintaining indicated weight bearing with rail/assistive device *Modalities* • Cryotherapy as needed • Electrical stimulation for pain management as needed *Therapeutic Exercise* • Supine Ankle Pumps • Supine Quad Set • Supine Glute Set • Transversus Abdominis Activation Hooklying • Prone Knee Flexion • Passive Supine Hip Flexor Stretch *Cardiovascular Exercise* • Upright Stationary Bike
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

PHASE II: INTERMEDIATE POST-OP (4-6 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Progress weight bearing as appropriate per timeline • Progress ROM as tolerated per protocol • Minimize pain and inflammation • Protect integrity of repair • Avoid post-operative adhesions • Improve pain-free AROM/PROM within stated parameters • Attain non-antalgic gait with use of device and appropriate weight bearing • Address muscle inhibition • Patient demonstrates independence with initial home exercise program
Weight Bearing	• Gradually increase weight bearing to WBAT pain-free
Range of Motion Limitations	• Flexion: gradually increase 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 for 8 weeks • No Gr III-IV hip joint mobilization for 1st 6 weeks • No long axis hip distraction for first 8 weeks for labral repair • No long axis hip distraction for first 12 weeks for labral reconstruction • Avoid pain and pinching in the hip at all times • Avoid functional activities that cause hip pain
Additional Interventions **Continue with Phase I interventions*	*Manual Therapy* • Soft tissue mobilization as appropriate per earlier phases • Joint mobilizations to lumbar spine/sacrum to address lumbosacral dysfunction as indicated • Gr I-II hip joint mobilizations as appropriate • Scar mobilization to portal scars as appropriate • PROM small range hip circumduction at 70 degrees flexion • PROM log rolls to internal rotation/external rotation • PROM all motions within allowed ROM

	Gait Training • 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. • Wean from crutches by 6-8 weeks as tolerated. *Modalities* • Cryotherapy as needed • Electrical stimulation for pain management as needed *Therapeutic Exercise* *Continuation of Phase 1 Exercises as deemed appropriate by treating physical therapist* • Quadruped Rocking • Hip rotations on stool IR/ER • Prone B hip IR • Hook-lying Lumbar Rotation (small range) • Hip ABD/ADD Isometrics Hook-lying • Hook-lying Gluteal Set • Standing Knee Flexion • Quadruped Hip Extension Knee Slides for Operative Leg w/TrA Activation • Quadruped 'Cat and Camel' Exercise • Supine Modified Thomas Stretch (operative leg straight) • Sidelying Piriformis Stretch • Bilateral Bridging • Standing Hip Abduction • Quadruped Hip Extension for Operative Leg • Standing Hip Extension to Neutral • Counter Plank • Single Leg Balance • Sidelying Clamshell in Neutral • Hip Internal Rotation Prone with Resistance *Cardiovascular Exercise* • 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 (7-12 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Performance 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	• 6-8 weeks post-op: Gradually wean from crutches, decrease to single crutch, then without device as tolerated
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 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 extreme combined hip ROM • Avoid symptom provocation during ambulation, ADLs, or therapeutic exercise and avoid post-activity soreness • Avoid pinching in operative hip with range of motion exercises
Additional Interventions **Continue with Phase I-II Interventions*	*Manual Therapy* • Soft tissue mobilization per earlier phases • Joint mobilizations to lumbar spine/sacrum to address lumbosacral dysfunction as indicated • Gr 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 • PROM small range hip circumduction at 70 degrees flexion • PROM log rolls to external and internal rotation • PROM all motions within allowed ROM *Gait Training* • Normalize gait without device. • If patient has pain with ambulation continue to use 1 crutch and wean as tolerated *Modalities* • Cryotherapy as needed • Electrical stimulation for pain management as needed. *Therapeutic Exercise* • Sidelying Hip Abduction • Bridge with Aternating Leg Extension • Side Plank- modified (knees/forearm) • Modified Plank (knees/forearms) • Quadruped Alternating Leg Extension (progress to opposite arm/leg as tolerated) • Partial Range Squats (gradually increase to 90 degree squats) • Prone Hip Extension • Single Leg Forward Weight Shifts (progressing to Romanian dead lift) • Lateral Band Walk • Backwards Monster Walk with Band • 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 • Standing IT Band Stretch *Cardiovascular Exercise:* • 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 within normal limits pain-free • Alternate 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	• Independent home exercise program • Optimize ROM • >=4/5 LE strength, >=4/5 trunk strength • Improved dynamic balance • Pain-free ADL • Pain-free hip flexion with ADLs and functional mobility
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 plyometrics • 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 **Continue with Phase I-III interventions*	*Manual Therapy* • Soft tissue mobilization as appropriate per earlier phases • Joint mobilizations to lumbar spine/sacrum to address lumbosacral dysfunction as indicated • Gr III-IV hip joint mobilization as needed to address joint hypomobility • Long axis hip distraction if needed *Modalities* • Cryotherapy as needed • Electrical stimulation for pain management as needed *Therapeutic Exercise* • 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 • Sport specific plyometrics and agility exercises as appropriate • Progress core strengthening as deemed appropriate by therapist *Cardiovascular Exercise* • 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	• 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	*Please note: Individuals who do not engage in higher level activities may not need to progress to advanced and sport specific activities.* • Progress to sport specific training without pain • Progress to jogging pain free when cleared by surgeon • Independent home exercise program • Optimize ROM •5/5 LE strength, >=4/5 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 decreased • Avoid joint inflammation • Focus on quality of movement and exercise
Additional Interventions **Continue with Phase II-IV interventions*	*Manual Therapy* • Soft tissue mobilization as appropriate for per earlier phases • Joint mobilizations to lumbar spine/sacrum to address lumbosacral dysfunction as indicated • Gr III-IV hip joint mobilization as needed to address joint hypomobility • Long axis hip distraction as needed for labral repair or reconstruction *Modalities* • Cryotherapy as needed • Electrical stimulation for pain management as needed *Therapeutic Exercise* • Progress strength, proprioception, dynamic balance, agility, and power to address sport specific demands. Sport specific retraining as tolerated. *Cardiovascular Exercise* • 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: gradually progress time and swimming strokes at tolerated • Jogging: initiate at 16-18 weeks as indicated by referring surgeon and patient status
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 *Outcome Measures:* • Hip Outcome Score (HOS) ○ If unavailable, Lower Extremity Functional Scale (LEFS) may be used

Contact	

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