



Proximal Hamstring Reattachment Rehabilitation Guideline

This rehabilitation program is designed to return the individual to their activities as quickly and safely as possible. It is designed for rehabilitation following proximal hamstring re-attachment surgery. Modifications to this guideline may be necessary depending on physician-specific instruction, location of repair, concomitant injuries or procedures performed. This evidence-based proximal hamstring re-attachment is criterion-based. Time frames and visits in each phase will vary depending on many factors including patient demographics, goals and individual progress. This guideline is designed to progress the individual through rehabilitation to full sport/ activity participation. The therapist may modify the program appropriately depending on the individual's goals for activity following proximal hamstring re-attachment.

This guideline is intended to provide the treating clinician with a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post-operative care based on exam/ treatment findings, individual progress and/or the presence of concomitant procedures or post-operative complications. If the clinician should have questions regarding post-operative progression, they should contact the referring physician.

General Guidelines/Precautions:

- Axillary crutches with toe touch weight bearing for 4-6 weeks
- Avoid unsafe surfaces or environments
- Avoid hip flexion coupled with knee extension
- ROM restrictive hip/knee braces may be used based on physician preference
- Use appropriate clinical judgment with progressions (timing of progressions may differ slightly based on location/technique of repair and surgeon's preference)
- Expected return to sport at 6 months with:
 - Normal gait and running mechanics
 - >90% hamstring and quad strength vs. non-injured extremity with isokinetic testing **
 - No symptoms with sport-specific dynamic activities

Proximal Hamstring Re-attachment Rehabilitation Guideline (28 weeks)

PHASE	SUGGESTED INTERVENTIONS	GOALS/MILESTONES FOR PROGRESSION
<p>Phase I <i>Patient Education/ Pre-Op Phase</i></p>	<p>Discuss: Anatomy, existing pathology, post-op rehab schedule, bracing and expected progressions</p> <p>Immediate post-operative instructions:</p> <ul style="list-style-type: none"> • Gait training/ assisted device/ brace fitting • Avoid coupled hip flexion with knee extension • Toe touch, weight-bearing w/axillary crutches for up to 6 weeks • Teach patient how to safely transfer with brace on: (supine to sit, sit to stand) 	<p>Goals of Phase:</p> <ol style="list-style-type: none"> 1. Prevention of post-operative complications
<p>Phase II <i>Max Protection Phase</i></p> <p><i>Weeks 0-4</i></p> <p><i>Expected visits: 2-5</i></p>	<p>Weight Bearing:</p> <ul style="list-style-type: none"> • Utilize axillary crutches • Toe touch weight-bearing <p>Brace:</p> <ul style="list-style-type: none"> • Wear brace at all times unless otherwise directed by surgeon <p>Precautions:</p> <ul style="list-style-type: none"> • No Hamstring stretching/long sitting position • Avoid coupled hip flexion with knee extension <p>Suggested Treatments:</p> <p>ROM: Hip, knee, ankle PROM to patient tolerance (hip 0-90°)</p> <p>Manual therapy: Soft tissue & patellar mobilization</p> <p>Modalities as indicated: Edema controlling treatments, NMES</p> <p>Exercise Examples:</p> <ul style="list-style-type: none"> • Quad sets (side-lying), ankle ABCs, core stabilization, passive knee ROM, glute squeezes, passive calf stretching with no hip flexion 	<p>Goals of Phase:</p> <ol style="list-style-type: none"> 1. Provide environment for proper healing of repair site 2. Restore ROM within restricted ranges 3. Prevent muscle inhibition <p>Criteria to Advance to Next Phase:</p> <ol style="list-style-type: none"> 1. Resolution of post-operative swelling/ecchymosis 2. Pain well controlled

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<p>Phase III Protection Phase</p> <p>Weeks 4-6</p> <p>Expected visits: 6-10</p>	<p>Weight Bearing:</p> <ul style="list-style-type: none"> Begin weight bearing progression (50%) per patient tolerance Begin to wean from axillary crutches at 5-6 weeks <p>Brace:</p> <ul style="list-style-type: none"> Continue to wear brace at all times up to 6 weeks unless otherwise directed by surgeon to discontinue <p>Precautions:</p> <ul style="list-style-type: none"> No Hamstring stretching/long sitting position Avoid coupled hip flexion with knee extension <p>Suggested Treatments:</p> <p>ROM: Progress PROM, begin gentle AROM of hip and knee</p> <p>Manual therapy: Soft tissue, patellar, scar mobilizations</p> <p>Modalities as indicated: NMES if showing quad inhibition</p> <p>Exercise Examples: (Continue with Phase II Exercises)</p> <ul style="list-style-type: none"> Gentle LE AROM exercises (no hamstring contraction), side-lying hip abd/add, hip abduction isometrics, clamshells <p>Other Activities:</p> <ul style="list-style-type: none"> Initiate aquatic exercises if available (Fwd/retro ambulation, LE AROM avoiding terminal stretching, partial WB mini-squats) 	<p>Goals of Phase:</p> <ol style="list-style-type: none"> Improve ADLs (stand, stairs, walking, etc.) Improve ROM Progress weight bearing <p>Criteria to Advance to Next Phase:</p> <ol style="list-style-type: none"> Full weight bearing pain free Level ground ambulation with minimal faults by week 6
<p>Phase IV Motion and Muscle Activation Phase</p> <p>Weeks 6-12</p> <p>Expected visits: 11-20</p>	<p>Weight Bearing:</p> <ul style="list-style-type: none"> Progress to full weight-bearing without use of assistive device <p>Brace:</p> <ul style="list-style-type: none"> Discontinue use of brace <p>Precautions:</p> <ul style="list-style-type: none"> No running or high-impact activities <p>Suggested Treatments:</p> <p>ROM: Gentle progressive static stretching, gradually working towards end range</p> <p>Strengthening: Begin with mid-range, avoid lengthened hamstring position initially (isometric, eccentric, concentric)</p> <p>Equipment use: Stationary bike, elliptical, stair master, treadmill walking when gait mechanics are normal</p> <p>Exercise Examples: (Continue with phase III exercises)</p> <ul style="list-style-type: none"> 6-8 weeks: Submax hamstring various angle isometrics, heel raises, single leg balance/proprioceptive activities, hip ext/flex SLR, terminal knee extension, step-ups, standing SLRs, supine heel slides 8-12 weeks: Fwd lunge, SL RDLs, KB swings, bridges, hamstring curls, step-downs, leg press 	<p>Goals of Phase:</p> <ol style="list-style-type: none"> Restore full ROM & pain free functional movements Normal gait mechanics Improve muscular strength and endurance SLR PROM >70 <p>Criteria to Advance to Next Phase:</p> <ol style="list-style-type: none"> Pain free ambulation Full hip, knee and ankle ROM Restoration of full hip strength 5/5 with MMT

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<p>Phase V Advanced Movement and Impact Phase</p> <p>Weeks 12-16</p> <p>Expected visits: 21-30</p>	<p>Specific Instructions:</p> <ul style="list-style-type: none"> No pain during strength training Soreness should resolve within 24 hours <p>Suggested Treatments:</p> <ul style="list-style-type: none"> Progress FWB double to single leg plyometrics Progress strengthening & core stability, begin isokinetics, modified, progressive Nordic hamstring exercises <p>Exercise Examples: (Continue with phase IV exercises)</p> <ul style="list-style-type: none"> Progressive height hop-downs, lunge matrix, slide board, BOSU, etc. <p>Other Activities:</p> <ul style="list-style-type: none"> Aquatic or alter-G progressive jogging in partial weight-bearing environment 	<p>Goals of Phase:</p> <ol style="list-style-type: none"> Normal pain-free ADLs Improved hamstring/quad strength Improved single leg proprioception (85% or greater on anterior and posterior lateral reach of Y balance test) <p>Criteria to Advance to Next Phase:</p> <ol style="list-style-type: none"> Met all previous phase goals No evidence of dynamic instability with hop-downs Cleared by surgeon
<p>Phase VI Return to Sport Phase</p> <p>Weeks 16-28</p> <p>Expected Visits: 30-36</p>	<p>Specific Instructions:</p> <ul style="list-style-type: none"> Initiation of dry land jogging at 16 weeks progressing to running to improve/normalize form and shock absorption Progression to higher level activities and sports-specific activities as strength and control dictate <p>Exercise Examples:</p> <ul style="list-style-type: none"> Initiate deceleration Initiate cutting activities Initiate agility (floor ladder and cone drills) and sport-specific activities 	<p>Suggested Criteria for Discharge:</p> <ol style="list-style-type: none"> 90% LSI for hamstring and quad strength with isokinetic testing No pain or complaints of instability with functional progression of sport-specific skills Prefer HS:Q ratio at 50-60% on both sides

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Updated: 11/2016, 8/2023

