



Orthopedic Surgery, Sports Medicine & Arthroscopy Specialists

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REHABILITATION PROTOCOL- Proximal Hamstring Repair

The rehabilitation guidelines are presented in a criterion based progression program. General time frames are given for reference to the average, but individual patients will progress at different rates depending on their age, associated injuries, pre-injury health status, rehab compliance, tissue quality and injury severity. Specific time frames, restrictions, and precautions may also be given to protect healing tissues and the surgical repair/reconstruction. It should not be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam findings, individual progress, and/or the presence of post-operative complications. The therapist should consult the referring physician with any questions or concerns.

Special attention must be given to impairments that caused the initial problem. For example, if the patient is s/p partial medial meniscectomy and they have a varus alignment, post-operative rehabilitation should include correcting muscle imbalances or postures that create medial compartment stress.

INDIVIDUAL CONSIDERATIONS: S/p ***

PHASE 1- Surgery to 2 weeks

REHAB GOALS	1. Protection of the post-surgical repair 2. Decrease pain and inflammation
PRECAUTIONS	1. Use knee brace locked at 40 deg for 4 weeks, ok to remove briefly for exercises and bathing/dressing 2. Crutches and Toe touch weight bearing for 2 weeks 3. Avoid position of hips flexed and knees extended
RANGE OF MOTION EXERCISES	• Ankle pumps Avoid hamstring stretching
SUGGESTED THERAPEUTIC EXERCISES	• Quad sets- 10-15 min 3x/ day • NMES as necessary • Ankle pumps 20-30/hr
CARDIOVASCULAR EXERCISE	• Upper body circuit training or UBE
PROGRESSION CRITERIA	1. Wound healing 2. No evidence of repair failure (gap at repair site)

PHASE 2- 3-6 weeks postop

REHAB GOALS	1. Protection of repair 2. Minimize effects of immobilization 3. Progress to normal gait
PRECAUTIONS	1. Crutches for 6 weeks total 2. Knee brace locked at 40 degrees for 4 weeks, ok to remove for PT, at 4 weeks unlock brace as tolerated 3. Begin partial weight bearing at 25% body weight, increase by 25% every week for 4 weeks.
RANGE OF MOTION EXERCISES	• Avoid hip flexion and 40 deg of terminal knee extension until week 4 • Passive hip extension and knee flexion at 4 weeks postop, cease if discomfort • Passive knee flexion in prone position • Ankle and Lumbar spine ROM
SUGGESTED THERAPEUTIC EXERCISES	• Quad sets- 10-15 min 3x/ day • NMES as necessary • Ankle pumps 20-30/hr • Gentle isotonic AAROM/AROM at week 4 with avoidance of hip flexion and terminal knee extension
CARDIOVASCULAR EXERCISE	• Upper body circuit training or UBE
PROGRESSION CRITERIA	1. No evidence of repair failure 2. Pain tolerable with limited passive ROM

PHASE 3- 6-10 weeks postop

REHAB GOALS	1. Protection of repair 2. Return of pain free ADLs at home 3. Normal gait 4. Limited pain with gentle strengthening
PRECAUTIONS	1. Discontinue crutches when normal gait established 2. Discontinue knee brace
RANGE OF MOTION	• Avoid combined hip flexion and knee extension • Gentle isolated knee stretches within levels of comfort • Passive knee flexion in prone position

EXERCISES	• Ankle and Lumbar spine ROM • Gentle stretch with hip and knee flexed if patient experiences tightness/cramping
SUGGESTED THERAPEUTIC EXERCISES	• Core, pelvic strength straining with avoidance of hip flexion • Gluteus maximus strengthening, progress from prone to supine • Gluteus medius strengthening, progress from side lying to upright • Increase resistance in isotonics in limited ROM, avoid terminal knee extension • Gait training • Quarter depth squats & heel raises progress from bilateral to unilateral • Standing hamstring curls w/hip in neutral, lower leg moving against gravity in pain free arc. Increase resistance one lb at a time, emphasis on high reps • Initiate unilateral leg press with light resistance (starting hip flexion below 90 deg) • Machine hamstring curls begin at 8-10lbs, high reps when full and pain free knee flexion obtained
CARDIOVASCULAR EXERCISE	• Upper body circuit training or UBE • Pool walking • Step down exercises using progressively higher steps
PROGRESSION CRITERIA	1. Restoration of normal gait 2. Return to complete home ADLs without pain

PHASE 4- 10-14 weeks postop

REHAB GOALS	1. Return to unrestricted pain free ADLs (excluding heavy labor) 2. Non-impact cardiovascular exercise 3. Transition hamstring strengthening from machines to exercises combining strength and balance
PRECAUTIONS	1. Avoid combined hip flexion/knee extension
RANGE OF MOTION EXERCISES	• Passive knee flexion and hip flexion and extension • Passive hip extension and knee flexion at 4 weeks postop, cease if discomfort • Passive knee flexion in prone position • Ankle and Lumbar spine ROM
SUGGESTED THERAPEUTIC EXERCISES	• Core, pelvic strength straining with avoidance of hip flexion • Continue gluteus medius & maximus strengthening • Increase resistance in isotonics with progression to full ROM • Unilateral half depth squats & heel raises progress, progression to half depth walking lunges & half depth multidirectional step lunges • Standing hamstring curls w/increasing reps, resistance, frequency

	• Leg press with increasing resistance, reps, frequency • Machine hamstring curls with increasing resistance • Double leg Swiss ball curl
CARDIOVASCULAR EXERCISE	• Upper body circuit training or UBE, step down exercises • Pool walking, elliptical, stationary bike
PROGRESSION CRITERIA	1. Pain free participation in ADLs at home and at work (excluding heavy labor) 2. Performance of nonimpact cardiovascular exercise 3. Tolerance of strength and balance exercises

PHASE 5- 14-24 weeks postop

REHAB GOALS	1. Return to work, including heavy labor 2. Hamstring 75% of contralateral 3. Initiation of light jogging
PRECAUTIONS	1. ROM within levels of comfort
RANGE OF MOTION EXERCISES	• Gentle initiation of hip flexion/knee extension stretching • Passive hip extension and knee flexion at 4 weeks postop, cease if discomfort • Passive knee flexion in prone position • Ankle and Lumbar spine ROM
SUGGESTED THERAPEUTIC EXERCISES	• Continue core, pelvic and hip stabilizer strengthening • Continue step down exercises • Increase resistance in isotonic with progression to full ROM • Unilateral full depth squats & heel raises progress, progression to full depth walking lunges & full depth multidirectional step lunges • Standing hamstring curls w/increasing reps, resistance, frequency • Leg press with increasing resistance, reps, frequency • Machine hamstring curls with increasing resistance • Progress to single leg Swiss ball curl • Knee pushups with hip extensions • Initiation of resisted inclined hip extensions and Romanian dead lifts
CARDIOVASCULAR EXERCISE	• Slow introduction of jogging on soft surfaces • Jump rope
PROGRESSION CRITERIA	1. Complete return to all home and work activities 2. Successful initiation of jogging and light plyometrics 3. Hamstring strength 75% of contralateral

PHASE 6- 24+ weeks postop

REHAB GOALS	Return to sport
SUGGESTED THERAPEUTIC EXERCISES	• ROM exercises within comfort • Advance previous level strengthening exercises • Ball toss exercises, medicine balls, rapid repositioning drills, reaction movement drills • Single leg stance and movement on unstable surfaces • Side to side jumps, box jumps, agility drills, sport specific training • Stretching for patient specific muscle imbalances
CARDIOVASCULAR EXERCISE	Progress from light jogging to running, then progress to speedwork as tolerated
PROGRESSION CRITERIA- RETURN TO SPORT	Hamstring strength 90% of contralateral, single leg hop distance 90% of contralateral, ability to complete sport specific activities without pain