

Hamstring Repair – Rehab Protocol

PHASE I (1-6 weeks postop)

** Typically, we will not have patients start formal PT until 4-6 weeks postop

** Patient will perform HEP including DVT prevention and isometric exercises to allow time for optimal healing

Rehabilitation Goals

Protection of the repaired tendon(s) Pain control

Weight Bearing

Use axillary crutches for up to 8 weeks

Post-operative weeks 0-2: Touch down weight bearing

Brace: hinged knee brace locked at 45-50 degrees at all times until week 4-6 (based on physician order)

Precautions

Avoid hip flexion coupled with knee extension (hamstring stretch) - AVOID

Avoid unsafe surfaces and environments

Suggested Therapeutic Exercise

Quad sets

Ankle pumps

Abdominal isometrics

Passive knee range of motion (ROM) with no hip flexion during knee extension

Post-operative weeks 3-4: Begin pool walking drills (if incision healed, without hip flexion coupled with knee extension), hip abduction, hip extension, and balance exercises

Scar mobilizations

Cardiovascular Exercise: Upper body circuit training or upper body ergometer (UBE)

Progression Criteria: 6 weeks post-operative

PHASE II (begin after meeting Phase I criteria, usually 6 weeks after surgery)

Appointments: 2x/week for 5-12 weeks

Rehabilitation Goals

Post-operative weeks 4-8: Unlock hinged knee brace to 30 degrees flexion for several days, then 0 degrees flexion/extension. Progress weight bearing as tolerated with weaning from crutches

Normalize gait

Good control and no pain with functional movements, including step up/down, squat, partial lunge (do not exceed 60° of knee flexion)

Precautions

Avoid dynamic stretching

Avoid loading the hip at deep flexion angles
No impact or running

Suggested Therapeutic Exercise

Non-impact balance and proprioceptive drills - beginning with double leg and gradually progressing to single leg

Stationary bike

Gait training

Begin hamstring strengthening - start by avoidance of lengthened hamstring position (hip flexion combined with knee extension) by working hip extension and knee flexion moments separately; begin with isometric and concentric strengthening with hamstring sets, heel slides, double leg bridge, standing leg extensions, and physioball curls

Hip and core strengthening

Cardiovascular Exercise: Upper body circuit training or UBE

Progression Criteria

Normal gait on all surfaces

Ability to carry out functional movements without unloading the affected leg or pain while demonstrating good control

Single leg balance greater than 15 seconds

Normal (5/5) hamstring strength in prone with the knee in a position of at least 90° knee flexion

PHASE III (begin after meeting phase II criteria, usually three months after surgery)

Appointments 2x/week for 12-16 weeks

Rehabilitation Goals

Good control and no pain with sport and work specific movements, including impact

Precautions

No pain during strength training

Post-activity soreness should resolve within 24 hours

Suggested Therapeutic Exercise

Continue hamstring strengthening - progress toward strengthening in lengthened hamstring positions; begin to incorporate eccentric strengthening with single leg forward leans, single leg bridge lowering, prone foot catches, and assisted Nordic curls

Hip and core strengthening

Impact control exercises beginning 2 feet to 2 feet, progressing from 1 foot to the other and then 1 foot to same foot

Movement control exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities

Initiate running drills, but no sprinting until Phase IV

Cardiovascular Exercise: Biking, elliptical machine, Stairmaster, swimming, and deep water running

Progression Criteria

Dynamic neuromuscular control with multi-plane activities at low to medium velocity without pain or swelling

Less than 25% deficit for side to side hamstring comparison on Biodex testing at 60° and 240° per second

PHASE IV (begin after meeting phase III criteria, usually 4-5 months after surgery)

Appointments: 1-2x/week for 16+ weeks

Rehabilitation Goals

Good control and no pain with sport and work specific movements, including impact

Precautions

No pain during the strength training

Post-activity soreness should resolve within 24 hours

Suggested Therapeutic Exercise

Continue hamstring strengthening - progress toward higher velocity strengthening and reaction in lengthened positions, including eccentric strengthening with single leg forward leans with medicine ball, single leg dead lifts with dumbbells, single leg bridge curls on physioball, resisted running foot catches, and Nordic curls

Running and sprinting mechanics and drills

Hip and core strengthening

Impact control exercises beginning 2 feet to 2 feet, progressing from 1 foot to other and then 1 foot to same foot

Movement control exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities

Sport/work specific balance and proprioceptive drills

Stretching for patient specific muscle imbalances

Cardiovascular Exercise: Replicate sport or work specific energy demands

Return to Sport/Work Criteria

Dynamic neuromuscular control with multi-plane activities at high velocity without pain or swelling

Less than 10% deficit for side to side hamstring comparison on Biodex testing at 60° and 240° per second

Less than 10% deficit on functional testing profile