

## Proximal Hamstring Repair

**Precautions:** Avoid hip flexion combined with knee extension. Avoid unsafe surfaces and environments. Timeframes for each phase may be extended if previous phase goals are not met. Protection of the repaired tendon is most important.

### Phase I (0 – 6 weeks post-op)

- Wound care: Observe for signs of infection
- Modalities: prn for pain and inflammation (ice, IFC)
- Brace: Brace use is determined by the surgeon at the time of surgery. If brace is used, flexion is restricted to 60 degrees
- Gait:
  - Slow progression from 20% to 50%, as tolerated
  - Use axillary crutches for up to 6 weeks, as needed
- Exercises: Quad sets, Ankle pumps, Core isometrics, PROM of the knee with no combination of hip flexion with knee extension, Hip abduction, Hip extension, Balance exercises
  - May start pool walking drills at 3 – 4 weeks post-op.
  - Scar mobilizations as tolerated

### Phase II (6 weeks – 3 months post-op)

- Goals:
  - Normalize gait
  - Good control and no pain with functional movements, including step up/down, squats, and partial lunges (less than 60 degrees of knee flexion)
- Precautions:
  - Avoid dynamic stretching
  - Avoid loading of the hip at deep flexion angles
  - No plyometrics or running
- Exercises:
  - Non-impact balance and proprioceptive drills, beginning with bilateral and slowly progressing to single leg
  - Stationary bike
  - Gait training
  - Begin hamstring strengthening
    - Start by avoiding 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 bridging, standing hip extension, and physioball curls



- Hip and core strengthening
- Cardiovascular exercise on UBE

### **Phase III (3 + months post-op)**

- Progression criteria to enter this phase:
  - Normalization of 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 degrees
- Rehabilitation Goals in the phase:
  - Good control and no pain with sport and work specific movements, including impact motions
- Precautions during this phase:
  - No pain with strength training
  - Post-activity soreness should resolve within 24 hours
- Suggested exercises during this phase:
  - 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 the same foot
  - Movement control exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities
  - Cardiovascular exercise: biking, elliptical machine, Stairmaster, swimming, 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 degrees and 240 degrees per second

### **Final Phase (After previous progression criteria has been met)**

- Physical therapy – as needed
- Rehabilitation goals
  - Good control and no pain with sport and work specific movements, including impact

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- Precautions
  - No pain during strength training
  - Post-activity soreness should resolve within 24 hours
- Exercises:
  - 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

#### **Rehabilitation Guidelines Following Proximal Hamstring Primary Repair**

- 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

Adapted From:

- 1) University of Wisconsin Sports Medicine. Rehabilitation Guidelines Following Proximal Hamstring Primary Repair. 2011.
- 2) Syracuse Orthopedic Specialists, PC. Physical Therapy Prescription and Protocol for Proximal Hamstring Repair. Battaglia MD, MS, T.