Proximal Hamstring Avulsion Repair
Rehabilitation Guidelines

These are rehabilitation guidelines for OSU Sports Medicine patients. Please contact us at 614-293-2385 if you have any questions.

Rehabilitation Precautions
- Non-weight bearing without bracing for 2 weeks. Toe-touch weight bearing Weeks 2-4
- No terminal/end-range hamstring stretching for 6 weeks
- Avoid long-sitting position for 6 weeks
- No isolated isotonic hamstring strengthening for 8 weeks

Weeks 0-2 (Days 1-14)
- Home exercises only
- Maintain non-weight bearing status
- Compression, cryotherapy, ankle pumps

Goals:
1. Control pain and inflammation
2. Wound healing

Weeks 2-4
- Begin physical therapy
- Toe-touch weight bearing using crutches or walker
- Initiate gentle hip, knee and ankle PROM within patient tolerance → avoid lengthened hamstring positions
- Initiate quad sets, straight leg raises in abduction only
- Initiate gentle soft-tissue mobilization at proximal insertion/incision site, if wound is fully closed

Goals:
1. Full hip, knee, and ankle PROM in protected positions, avoiding lengthened hamstrings
2. Good quad control in non-weight bearing position
3. Continue pain and inflammation control

Weeks 4-6
- Begin weight bearing progression, per patient tolerance
- Aquatic activities (if available): forward and retro ambulation, gentle AROM (avoid terminal stretching), gentle partial weight bearing squats (small range)
- Initiate gentle PROM straight leg hamstring stretching per patient tolerance
- Continue soft tissue mobilization
- Initiate single leg stance and static proprioceptive activities
- Initiate sub-maximal hamstring isometrics. Avoid lengthened hamstring positions initially. Begin at 30°, 45°, 60°, 90° knee flexion, patient supine.
- Initiate closed-chain terminal knee extensions (resisted quad sets)
• Straight leg raises in flexion (0° to 30° maximum ROM), abduction, adduction, per patient tolerance
• Initiate core strengthening program: pelvic tilts, transverse abdominus activation

Goals:
1. Normalization of gait at 6 weeks
2. Achieve 45° SLR PROM
3. SLR without quad lag

Weeks 6-8
• Initiate terminal/end-range hamstring stretching, per patient tolerance
• Progress full lower extremity stretching program per patient tolerance
• Initiate gentle isotonic resistive hamstring exercises
  o Bilateral only, progress eccentric to concentric
  o Begin with mid-range strengthening initially. Avoid lengthened hamstring position initially.
• Progress core strengthening/dynamic lumbar stabilization program
• Progress proprioceptive activities: Include single leg stance on various surfaces, single leg stance with perturbations (“steamboats”)

Goals:
1. Full range of motion at each lower extremity joint
2. SLR 0°-70° PROM
3. Improved closed chain proprioception/stability without symptom increase

Weeks 8-12
• Full hamstring and quad strengthening program, per patient tolerance
  o Progress bilateral to unilateral, eccentric to concentric for hamstring strengthening
• Advanced core strength and stabilization program
  o Include single knee balance activities on BOSU
  o Bridging, Swiss ball bridging
• Advanced dynamic proprioceptive activities
• Initiate partial weight bearing plyometrics on shuttle or Total Gym
• Resisted ambulation, all directions, with cable-column or resistance bands – use caution with resisted forward ambulation due to increased hamstring activation

Goals:
1. SLR range of motion within normal limits
2. 5/5 straight plane strength in MMT positions
3. Tolerate PWB plyometrics on shuttle without symptom increase

Week 12
• Progress to FWB hop-downs, light, per patient tolerance
  o Begin with 1 to 2 inch height box/step. Progress slowly to higher step. Progress from bilateral to unilateral.
• Lunges: Forward and retro
• Slide Board

Goal:
Perform hop-downs with appropriate mechanics, no evidence of dynamic instability, and without symptom increase in order to progress difficulty and/or intensity.

**Weeks 12-16**
- Continue progression of full-weight bearing plyometric activities
  - Double leg side/side and diagonals
  - Single leg multi-directional
- Continue core stabilization program
  - Swiss ball lower extremity curl-ups
- Initiate walk-jog progression
  Criteria to begin jogging:
  1. Perform hop-downs with appropriate mechanics, no evidence of dynamic instability, and without symptom exacerbation.
  2. Perform 10 single-leg hops on involved side, with good mechanics, without symptom increase, and symmetrical with uninvolved side.

**Goal:**
Jog on treadmill and even surfaces with symmetrical mechanics and no symptoms.

**Weeks 16-20**
- Continue multi-directional/advanced plyometric program
  - Hops to/from BOSU, multi-directional
- Initiate sport-specific drills, per patient tolerance
  ➢ *Patient must tolerate all above activities without symptom increase prior to initiating sport-specific activities.*
  - Include in sport-specific progression: running, cutting/diagonals, carriocas: progress 50% to 75% to full-speed
  - Resisted forward running

**Weeks 16-28: Criteria to return to sports:**
- Functional testing: Must demonstrate >85% performance of involved side when compared with uninvolved.
  - Include single-leg hop for distance test, 3-single-leg hop for distance
- Isokinetic testing:
  - Must demonstrate >85% strength of involved side versus uninvolved side at 60°/sec, 180°/sec, and 300°/sec testing.
  - Demonstrate hamstring to quadriceps strength ratio of 55-65% bilaterally
- No symptom increase with sport-specific progression or testing as described above

**References**
O Mohamed *et al*: Relationship between wire EMG activity, muscle length, and torque of the hamstrings. *Clinical Biomechanics* (2002); 17: 569-579

*OSU Sports Medicine Revised 2010*