

Proximal Hamstring Avulsion Repair Rehabilitation Guidelines

Rehabilitation Precautions

- Non-weight bearing with 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
 - *Bilateral only*, progress eccentric to concentric
 - *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
 - Progress bilateral to unilateral, eccentric to concentric for hamstring strengthening
- Advanced core strength and stabilization program
 - Include single knee balance activities on BOSU
 - 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
 - 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

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, carioccas: 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

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Clanton TO, Coupe KJ: Hamstring Strains in Athletes: Diagnosis and Treatment. *J Am Acad Orthop Surg* (1998); 6: 237-248

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