



## Rehabilitation of Hamstring Strains

### I. PHASE I: ACUTE PHASE

Goals: Diminish pain and inflammation  
Gradually improve flexibility and ROM  
Retard muscular atrophy and strength loss  
Enhance healing of muscular strain

#### Immediately following injury:

- Cryotherapy, compression wrap
- High voltage stimulation to control swelling
- Light massage when tolerable (day 2-3)
- ROM exercises:
  - Seated active and passive knee extension
  - Gradually decrease hip flexion angle
  - Initiate hamstring stretch (gentle and gradual as tolerated)
- Stretch hip flexors, quadriceps, calf and hip adductors
- Strengthening exercises:
  - Quad sets
  - Straight leg raises (3 directions)
  - Active knee extensions
  - Toe calf raises
  - Isometric hamstring contractions (knee flexion 45°)
  - Bicycle when able
- Stretch and ROM exercises: perform post-exercises regimen
- Modalities for pain

### II. PHASE II: SUBACUTE PHASE

Goals: Improve flexibility and ROM  
Enhance muscular strength and endurance  
Promote healing of injured structures  
Control any inflammation and pain

- Superficial heat to injured hamstring or contrast heat/cold
- Ultrasound over injured area
- Soft tissue mobilization and massage
- Active warm-up bicycle
- Stretch lower extremity musculature – manual & self-stretches (stretch hamstrings seated and supine)
- Initiate isotonic strengthening program
  - Leg press
  - Hip abd/add
  - Hip flex/ext
  - Knee extensions

- Wall squats
- Hamstring curls
- Front lunges
- Lateral lunges
- Backward lunges
- Lateral step-overs
- Forward/backward step-overs
- Toe-calf raises

- Initiate core stabilization drills (abdominal and back)
- Stairmaster
- Initiate proprioception drills
- May initiate pool exercises and running in pool
- Stretch
- Cryotherapy
- Use neoprene sleeve following workouts

### III. PHASE III: DYNAMIC PHASE

Goals: Improve dynamic (ballistic) flexibility of hamstrings  
Normalize static flexibility  
Normalize muscular strength

- Active warm-up – bicycle or jog
- Stretch all major muscle groups lower extremity (stretch hamstrings seated and supine)
- Continue strengthening exercises listed above
- Initiate ballistic stretching maneuvers

- Plyometric leg press
- Fast speed hamstring work with sport cord
- Plyo front lunges
- Scissor jumps
- Scissor jumps onto box
- Side to side box jumps (plyos)
- Skip lunges
- Fast speed lateral step-overs
- Knee high running (forward) (ropes)

- Stretch after workout
- Cryotherapy
- Consider neoprene sleeve during drills

### IV. PHASE IV: SPORTS SPECIFIC AND AGILITY DRILL PHASE

Goals: Normalize ballistic flexibility  
Normalize muscular strength and agility  
Gradual return to sport participation

- Active warm-up or jog
- Stretch all lower extremity muscles
- Continue strengthening program
- Continue selected ballistic stretching drills

- Initiate sport specific program
  - Side shuttles
  - Carciacos
  - Backward running
  - Forward running
  - Interval running
  - Progress to sprints
  - Running and cutting drills
  - Gradually increase intensity of running
    - Jog → run → sprint
- Stretch following drills
- Consider neoprene sleeve during drills
- Gradually return to sport participation