Sports & Orthopaedic Specialists
Physical Therapy Protocol:
Proximal Hamstring Strain

This protocol is intended to provide generalized guidance in the rehabilitation of an athlete with a proximal hamstring strain. Individualized needs of the patient and their activity should be taken into consideration.

The therapeutic exercise listed in this protocol conveys the appropriate load for a patient following a proximal hamstring strain. This is not a complete listing of rehabilitation strategies.

As a part of physical therapy, focus on patient education throughout the recovery process:

-Mean recovery time following injury via eccentric load with muscle belly pain is 16 weeks

-Mean recovery time following injury via extreme stretch with ischial tuberosity pain is 50 weeks

PHASE I

Goal: Protect hamstrings, re-establish pain free midrange movement patterns
Avoid: End range lengthening of hamstrings
Ice: 2-3 times per day

Therapeutic Exercise	Completed daily
Stationary bike	10 minutes at gentle/comfortable cadence/resistance
Clam shell	No band to light band
Bridge	Double leg
Front plank	Knees to feet
Side plank	Knees to feet
Side stepping	Small steps. Slow to moderate pace
Retro walking	Small steps. Slow to moderate pace
Grapevine	Slow to moderate pace
Step up	Four to eight inches
Side step up	Four to eight inches
Single leg balance	Eyes open to closed

Manual Therapy

None.

Criteria for progression to Phase 2:

-No gross deviations in biomechanics with gait

-Pain free isometric contraction against sub-maximal (50-70%) resistance during prone hamstring manual muscle testing with knee flexed to 90 degrees

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PHASE 2

Avoid: End range lengthening of hamstrings **if** weakness is present
Ice: After exercise

Therapeutic Exercise	Completed 5-7 times per week
Stationary bike	10 minutes at moderate resistance. Cadence of 85+
Bridge	With marching
Functional squats	Isometric holds
Lunges	Upright trunk
Front plank	On feet
Side plank	On feet
Marching	In place vs forward
Quick feet	In place on flat ground
Side shuffle	Progress step size. Moderate to fast pace
Back pedaling	Normalized step size. Moderate to fast pace
Grapevine	Moderate to fast pace
Single leg balance	With reaching
Romanian dead lift	On single leg to 45 degree trunk angle
Hamstring stretch	GENTLE static stretch **IF** hamstring length (popliteal angle) is more than 20 degrees limited as compared to contralateral extremity

Initiate and progress through return to run program

Manual Therapy
Transverse friction massage with max pain of 3/10
Instruction in use of foam roller

Criteria for progression to Phase 3:

-No gross deviations in biomechanics with jogging

-Full strength (5/5) and pain free with prone hamstring manual muscle testing with knee flexed to 15 degrees

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PHASE 3

Protection: Avoid full intensity of pain/tightness/stiffness is present
Ice: After exercise as needed

Therapeutic Exercise	Completed 3-5 times per week
Stationary bike	10 minutes at challenging resistance. Cadence of 85+
Functional squats	Repetitions
Lunges	Forward trunk lean
Front plank	On one foot
Side plank	On one foot (top leg abducted to horizontal)
Frankensteins	Mid range to end range kicks
Quick feet	Onto step
Side shuffle	With quick/unexpected direction changes
Back pedaling	Fast pace
Grapevine	Fast pace
Skips	Progress from closed to open knee angle
Romanian dead lift	Single leg to 90 degree trunk angle
Nordic curls	Small to medium range of motion
Hamstring stretch	GENTLE static stretch **IF** hamstring length (popliteal angle) is more than 20 degrees limited as compared to contralateral extremity

Sport appropriate drills/skills/challenges

Manual Therapy
Transverse friction massage
Instruction in use of foam roller