

CAT: Improving outcomes in patients with acute hamstring strains

Clinical Bottom Line:

Adding trunk stability exercises and agility training to treatment program for patients with hamstring strains may improve outcomes and prevent re-injury.

Citation: Sherry MA, Best, TM. A comparison of 2 rehabilitation programs in the treatment of acute hamstring strains. *J Orthop Sports Phys Ther.* 2004; 34(3): 116-125.

Three/four part clinical question:

What is the best treatment for a young, active soldier with a hamstring strain to speed recovery and prevent re-injury?

The study: Prospective randomized comparison of 2 rehabilitation programs

The study patients:

23 subjects average age: 24.3 (Control), 23.2 (Experimental)

Average days past injury: 3.4 days (Control), 4.1 days (Experimental)

Inclusion criteria:

- Grade I-II hamstring strain (+ Selective tissue tension test, TTP M-T juncture, limited daily or sport activity)
- ≥ 14 y/o, < 50 y/o
- Days past injury: ≤ 10 days
- No other injury/ disease or condition that would limit participation in program
- At least 70% compliant with HEP
- No other treatment during study, no NSAID use

Control Group(s):

Control group (N = 11; 11 analyzed):

Phase I: Low intensity stationary biking, supine & standing static hamstring stretch, contract relax hamstring stretch, submax isometric hamstring sets, ice. (Progress when symmetrical gait, no pain with static high knee march in place.)

Phase II: Moderate intensity biking and walking, supine & standing hamstring stretch, prone leg curls w/ weights, hip extension standing using t-band, NWB standing kick, symptom free practice (no high speed maneuvers), ice.

Experimental Group

Experimental group (N = 13; 13 analyzed):

Phase I: Low/moderate intensity sidestepping, low/moderate intensity grapevines, low/moderate intensity forward/backward step over tape while walking sideways, prone body bridge, supine extension bridge, side bridge, ice. (Progress to phase II when symmetrical gait, no pain with static high knee march in place.)

Phase II: Moderate/high intensity sidestep, moderate/high intensity grapevine, moderate/high intensity steps forward/backward while moving sideways, single leg stand windmill, push up stabilization with trunk rotation, fast feet in place, PNF pull downs to R and L with t-band, symptom free practice (no high speed maneuvers), ice.

The evidence:

Post Test Measure	Control Mean	SD	Experimental Mean	SD	Difference	P-value
Injury to Return to Sport	37.4 days	27.6	33.3 days	25.9	3.1 days	.2455
Re-injury at 2 weeks	54.5% (n=6)	-	0% (n=0)	-	54.5%	.00343
Re-injury at 1 year	70% (n=7)	-	7.7% (n=1)	-	62.3%	.0059

Comments:

1. Consider incorporating trunk stability and agility training into hamstring strain treatment programs to improve outcomes and prevent re-injury (particularly early re-injury) in an athletic population.
2. A larger scale study is needed to confirm these results.

Appraised by: CPT Christine Iverson, SPT

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