Muscle Injury & Rehabilitation

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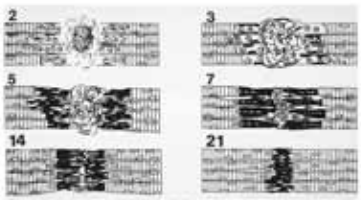
Overall Timeline

Healing Phases of Soft Tissue (Kannus, 2000)	
Phase	Days after Injury
Inflammation	0 to 7
Proliferation	7 to 21
Maturation	>21

Muscle Healing Process

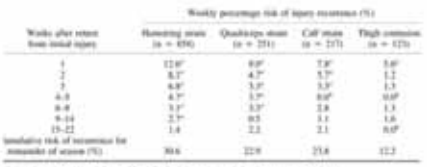
(Jarvinen et al. 2005)



EBM Standpoint

An Early Return vs. The Risk of Recurrence

(Orchard, 2002)



Immobilization
(Jarvinen, 2005)

- Early mobilization (Dr. Woodward, 1954)
- Histologic & Biomechanical changes
- A short period of immobilization

Immediate Treatment

- Rest
- Ice
- Compression
- Elevation

Sub-acute Phase Treatment

- Isometric
- Isotonic
- Isokinetic

Return to Sport-Specific Training

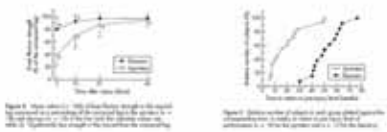
- The ability to stretch the injured muscle
- The pain-free use of the injured muscle in basic movements

What Does the Literature Say?
(Askling et al. 2006)


ORIGINAL ARTICLE

Type of acute hamstring strain affects flexibility, strength, and time to return to pre-injury level

Results
(Askling et al., 2006)



A Comparison of 2 Rehabilitation Programs in the Treatment of Acute Hamstring Strains

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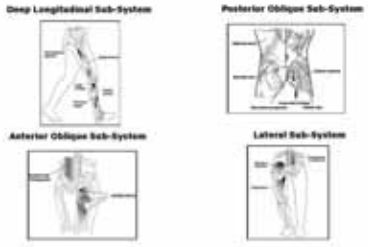
Thomas M. Best, MD, PhD†

Results

(Sherry & Best, 2004)

Results: The average (±SD) time required to return to sports for athletes in the STST group was 37.4 ± 27.6 days, while the average time for athletes in the PATS group was 22.2 ± 8.3 days. This difference was not statistically significant ($P = .2455$). In the first 2 weeks after return to sports, reinjury rate was significantly greater ($P = .0034$3, Fisher's exact test) in the STST group, where 6 of 11 athletes (54.5%) suffered a recurrent hamstring strain after completing the stretching and strengthening program, as compared to none of the 13 athletes (0%) in the PATS group. After 1 year of return to sports, reinjury rate was significantly greater ($P = .0059$, Fisher's exact test) in the STST group. Seven of 10 athletes (70%) who completed the hamstring stretching and strengthening program, as compared to only 1 of the 13 athletes (7.7%) who completed the progressive agility and trunk stabilization program, suffered a recurrent hamstring strain during that 1-year period.

Muscle Training vs. Movement Training



Summary

- Only a few clinical studies
- RICE principle
- A short immobilization
- Early Mobilization
- Clinical evaluation after 5 to 7 days
- Eccentric Exercises
- Progressive agility and trunk stabilization exercises