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Foam rollers use in strength training and conditioning:
Which scientific evidences in 2015 ?

Introduction

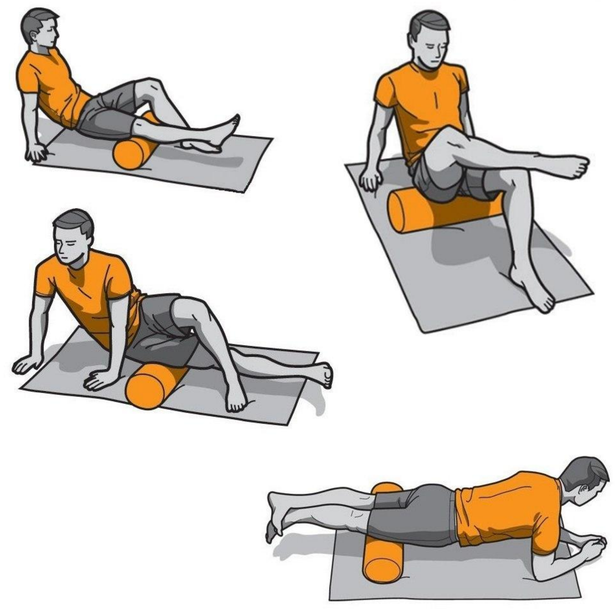
Foam Rolling (FR) or Self-induced myofascial release (SMR) is a new technique to treat soft tissues restrictions.[1]

It consists for an individual to exert pressure on the soft tissues with his/her own body mass using a foam roller. FR is primarily used pre- or post-workout.

Their popularity is growing and manufacturers warrant **benefits** on range of motion, including effects on connective tissue (fascia), performance and recovery.

Scientific literature on the topic is **poor**.

The purpose of this study is **to expose the current peer-reviewed data on the subject.**



Methods

A review of the literature was conducted on PubMed concerning papers published until december 2014. The terms „Foam roller", „Foam rolling", „Self myofascial release", „Roller massager" and „Myofascial rollers" were used. Studies were read and main outcomes were highlighted

Results

12 studies were found and included in this review. The table below exposes the conclusions on the different parameters tested.

Performance	**NO?**	No significant differences in 4 athletic tests after FR or planking warm-up[2] FR had no significant effect on hamstrings strength vs. no FR[3] FR increased neuromuscular efficiency during a lunge[4] FR led to small improvements in calf maximal voluntary contraction force relative to static stretching at 10 min post-intervention[5]
Recovery	**YES?**	FR attenuated perceived muscle soreness while improving post-exercise vertical jump height, muscle activation and passive and dynamic ROM in comparison with control group. Benefits are primarily accrued through neural responses and connective tissue[6] FR reduced perceived DOMS and associated decrements in most dynamic performance measures[7]
Range of motion (ROM)	**YES!**	Knee-joint ROM was 16% greater after 5x60-second of FR on the quadriceps compared to control group[5] Both FR and static stretching increased ROM immediately and 10 min post-intervention[2] FR on the quadriceps enhanced knee joint ROM without a concomitant deficit in muscle performance[1, 4] FR in combination with a static stretching protocol had a better effect on the ROM versus a static stretching protocol[8]
Vascular endothelial function	**YES?**	FR would reduce arterial stiffness and would improve vascular endothelial function[9]

Proposed recommendations for use based on current scientific knowledge

Use FR before exercising to enhance ROM
Use FR after exercising to attenuate perceived muscle soreness and reduce loss of performance in following efforts
Perform FR with 1 to 5 bouts of 20 to 60 seconds on targeted muscular groups

Conclusion: encouraging results but still poor evidences

- Encouraging results on acute muscular flexibility, recovery and vascular function, but effect on performance is unclear.
- Easy to use and without known adverse effects.
- Only a few studies evaluate its efficacy. Evidences on the subject are poor and more studies are needed about immediate and long term effects of FR on performance, flexibility and recovery.

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