



## SELF-MYOFASCIAL RELEASE / FOAM ROLLING



William Bonsall, 1948 Olympic Games

### WHAT IS FASCIA?

Fascia is a sheet of collagenous connective tissue that envelopes muscles and organs.

### WHAT CAUSES SOFT TISSUE TIGHTNESS AND SORENESS?

Soft tissue tightness may arise from different sources, but typically is from muscle spasm, soft tissue adhesions, disease, inactivity, scar tissue or in response to inflammation.

### WHAT IS A TRIGGER POINT?

Defined as a hypersensitive palpable nodule within a taut band of muscle tissue, most often found in the belly of a muscle. Active myofascial trigger points produce symptoms locally or may refer pain, whereas a latent trigger points will only be painful when stimulated. The negative side effects are pain, but also abnormal muscle mechanics (abnormal movement patterns).

Source (Human Kinetics Journal)

### RECOMMENDED MODE

- Foam rolling 30-60 sec/session
- Roller massager for 5-120 sec/session
- Longer periods have not been researched.
- May have better effects when combined with static stretching **after** exercise or following a dynamic warm-up.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4637917/>

### BENEFITS

- *Short-term benefits* of increased sit and reach scores (i.e. hamstring flexibility) and joint range of motion (ROM) without affecting muscle performance
- Decreased perception of fatigue
- Enhancing joint flexibility as pre-exercise warmup and cool down

### HOW

- It is hypothesized that ROM changes may be a result of:
  - altered viscoelastic and thixotropic property (gel-like) of the fascia
  - increased muscular temperature
  - improved blood and lymphatic circulation
  - alterations in muscle-spindle length or the muscle stretch reflex resulting in a relaxation of the muscles.

Source (International Journal of Sports Physical Therapy)



Helens Stephens and Jesse Owens, 1936 Olympic Games

**WHAT IS DOMS?**

Delayed-onset muscle soreness (DOMS) is classified as a type I muscle strain, producing tenderness or stiffness to palpation or movement.

**WHAT DOES DOMS FEEL LIKE?**

Sensations associated with DOMS are highly variable and range from slight muscle stiffness that subsides with regular daily activity to severely debilitating pain that restricts any movement.

**HOW LONG WILL DOMS LAST?**

Typically, the intensity increases within the first 24 hours (post-exercise), peaks between 24 and 72 hours, and subsides and disappears in five to seven days.

**IS DOMS BAD?**

In terms of athletic performance, it commonly causes muscle soreness, but can also cause structural damage to muscles and/or connective tissue. It can alter muscle function and joint mechanics. Thereby, reducing performance or optimal training intensity for athletes.

Source (Journal of Athletic Training)

**TIPS**

- See figure 1 below for lower extremity examples.
- Nearly all areas of the upper and lower extremities can be targeted with SMR.
- Athletes should ensure proper hydration for greatest benefits.
- Techniques may include rolling through the muscle or finding a taut muscle and maintaining pressure to release that area before continuing.
- Various tools can be used (foam rollers, balls, shot put, etc.)
- Use caution over boney areas, areas of injury or inflammation and areas of nerve bundles.

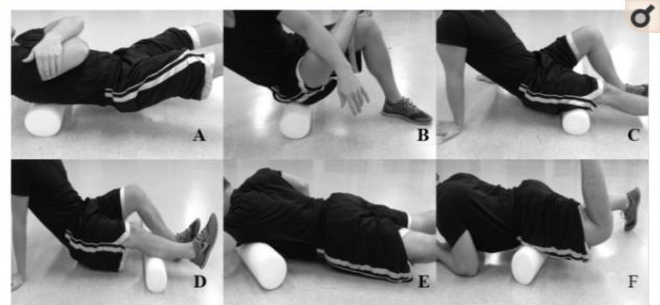


Figure 1  
SMR full body foam rolling progression order includes (A) thoracic/lumbar, (B) gluteal, (C) hamstring, (D) calf, (E) pectoral, (F) quadriceps/flexor regions. \*Figure 1 taken for rolling demonstration purposes only.

**DOES SELF-MYOFASCIAL RELEASE HELP REDUCE DOMS AFTER INTENSE EXERCISE?**

SMR after high-intensity exercise does:

- Reduce drop-off in lower-extremity muscle performance.
- Reduce perceived pain.

\* When the post-exercise intervention period ranges from 10 to 20 minutes.

- Continued foam rolling (20 minutes per day) over three days may further decrease a patient's pain level and using a roller massager for 10 minutes may reduce pain up to 30 minutes.

\*This has only been tested in the lower extremities

Source (International Journal of Sports Physical Therapy)

**BEFORE ACTIVITY:**  
Focus on shorter duration for muscle activation.

**AFTER ACTIVITY:**  
Focus on longer duration for myofascial release.