
ORIGINAL RESEARCH

SPECIFIC AND CROSS-OVER EFFECTS OF FOAM ROLLING ON ANKLE DORSIFLEXION RANGE OF MOTION

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ABSTRACT

Background: Flexibility is an important physical quality. Self-myofascial release (SMFR) methods such as foam rolling (FR) increase flexibility acutely but how long such increases in range of motion (ROM) last is unclear. Static stretching (SS) also increases flexibility acutely and produces a cross-over effect to contralateral limbs. FR may also produce a cross-over effect to contralateral limbs but this has not yet been identified.

Purpose: To explore the potential cross-over effect of SMFR by investigating the effects of a FR treatment on the ipsilateral limb of 3 bouts of 30 seconds on changes in ipsilateral and contralateral ankle DF ROM and to assess the time-course of those effects up to 20 minutes post-treatment.

Methods: A within- and between-subject design was carried out in a convenience sample of 26 subjects, allocated into FR (n = 13) and control (CON, n = 13) groups. Ankle DF ROM was recorded at baseline with the in-line weight-bearing lunge test for both ipsilateral and contralateral legs and at 0, 5, 10, 15, 20 minutes following either a two-minute seated rest (CON) or 3 × 30 seconds of FR of the plantar flexors of the dominant leg (FR). Repeated measures ANOVA was used to examine differences in ankle DF ROM.

Results: No significant between-group effect was seen following the intervention. However, a significant within-group effect ($p < 0.05$) in the FR group was seen between baseline and all post-treatment time-points (0, 5, 10, 15 and 20 minutes). Significant within-group effects ($p < 0.05$) were also seen in the ipsilateral leg between baseline and at all post-treatment time-points, and in the contralateral leg up to 10 minutes post-treatment, indicating the presence of a cross-over effect.

Conclusions: FR improves ankle DF ROM for at least 20 minutes in the ipsilateral limb and up to 10 minutes in the contralateral limb, indicating that FR produces a cross-over effect into the contralateral limb. The mechanism producing these cross-over effects is unclear but may involve increased stretch tolerance, as observed following SS.

Levels of Evidence: 2c

Key Words: Flexibility, self-massage, self-myofascial release

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