

# FOUR WEEKS OF ROLLER MASSAGE TRAINING DID NOT IMPACT RANGE OF MOTION, PAIN PRESSURE THRESHOLD, VOLUNTARY CONTRACTILE PROPERTIES OR JUMP PERFORMANCE

Daniel D. Hodgson<sup>1</sup>

Camila D. Lima<sup>1</sup>

Jonathan L. Low<sup>1</sup>

David G. Behm PhD<sup>1</sup>

## ABSTRACT

**Background:** Roller massagers are popular devices that are used to improve range of motion (ROM), enhance recovery from muscle soreness, and reduce pain under acute conditions. However, the effects of roller massage training and training frequency are unknown.

**Purpose:** The objective was to compare two different roller massage training frequencies on muscle performance.

**Study Design:** Randomized controlled intervention study

**Methods:** Twenty-three recreationally active university students were randomly allocated to three groups: control (n=8;), rolling three (3/W; n=8;) and six (6/W; n=7) times per week for four weeks. The roller massage training consisted of unilateral, dominant limb, quadriceps and hamstrings rolling (4 sets x 30 seconds). Both legs of participants were tested pre- and post-training for active and passive hamstrings and quadriceps range of motion (ROM), electromyography (EMG) activity during a lunge movement, unilateral countermovement jumps (CMJ), as well as quadriceps and hamstrings maximum voluntary isometric contraction (MVIC) forces and electromechanical delay. Finally, they were tested for pain pressure threshold at middle and distal segments of their quadriceps and hamstrings.

**Results:** There were no significant training interactions for any measure with the exception that 3/W group exhibited 6.2% (p=0.03; Effect Size: 0.31) higher CMJ height from pre- (38.6 ± 7.1 cm) to post-testing (40.9 ± 8.1 cm) for the non-dominant limb.

**Conclusions:** Whereas the literature has demonstrated acute responses to roller massage, the results of the present study demonstrate no consistent significant training-induced changes. The absence of change may highlight a lack of muscle and myofascial morphological or semi-permanent neurophysiological changes with rolling.

**Levels of Evidence:** 2c

**Key Words:** self-myofascial release, foam rolling, massage, flexibility, strength,

## CORRESPONDING AUTHOR

Dr. David G Behm

School of Human Kinetics and Recreation,  
Memorial University of Newfoundland,

St. John's Newfoundland, Canada, A1C 5S7

E-mail: dbehm@mun.ca

Tel: 709-864-3408

Fax: 709-864-3979

<sup>1</sup> School of Human Kinetics and Recreation, Memorial University of Newfoundland, St. John's Newfoundland, Canada

The authors declare that we have no conflicting or competing interests in relation to this article.