SYSTEMATIC REVIEW

DURATION OF MYOFASCIAL ROLLING FOR OPTIMAL RECOVERY, RANGE OF MOTION, AND PERFORMANCE: A SYSTEMATIC REVIEW OF THE LITERATURE

Garrett A. Hughes1,2
Leanne M. Ramer2

ABSTRACT

Background: Knowledge of the body’s response to and recovery from exercise is rapidly increasing. State-of-the-art equipment and facilities allow recreationally active adults to seek innovations to enhance performance and shorten recovery time. Myofascial rolling (MR) is a relatively new practice, providing acute benefits for muscle pain and range of motion (ROM). However, there is no consensus on optimal MR duration.

Purpose: The purpose of this systematic review is to determine the optimal MR duration using a foam roller or a roller massager for muscle pain, ROM, and athletic performance via qualitative review.

Study Design: Systematic Review of the Literature

Methods: A systematic search was conducted using PubMed, EMBASE, EBSCOHost and PEDro (July 2018). Twenty-two studies met the inclusion criteria and were appraised using the PEDro scale. Studies were grouped by outcome measure, with a total number of subjects of n=328 for pain/soreness, n=398 for ROM, and n=241 for performance. Heterogeneity of data prohibited a formal meta-analysis: studies were manually reviewed and classified as providing evidence for benefit of MR (i.e., significant positive effect) or not (i.e., null or negative effect) for each of the studied outcomes.

Results: The most evidence-based benefit of MR is the alleviation of muscle soreness; seven of eight studies assessing pain/soreness resulted in a short-term reduction, and a minimum dose of 90 seconds per muscle appeared beneficial. While ten of 17 studies involving ROM showed acute improvements, the results were inconsistent and highly variable. No significant effects on performance were detected.

Conclusion: Available data indicate that MR for 90 seconds per muscle group may be the minimal duration to achieve a short-term reduction in pain/soreness, with no upper limit found. Results do not support increases in chronic ROM or performance, and data are insufficient to provide a conclusive recommendation for impacting acute ROM. The heterogeneity of the literature highlights the need for additional research to determine optimal dose of MR.

Level of evidence: 2a- (Systematic Review with heterogeneity).

Keywords: Athletic performance; dose; movement system; myofascial rolling; pain; range of motion

1 Department of Physical Therapy, University of British Columbia, Vancouver, BC, Canada
2 Department of Biomedical Physiology and Kinesiology, Simon Fraser University, Burnaby, BC, Canada

The authors gratefully acknowledge Antonio Zenone for providing invaluable clinical expertise and input on the manuscript. We also thank Damian Herft for photography and fruitful discussion.

The authors listed above declare no conflicts of interest.

CORRESPONDING AUTHOR

Leanne M. Ramer
Department of Biomedical Physiology and Kinesiology, Simon Fraser University
8888 University Drive, Burnaby, BC, Canada
V5A 1S6.
lramer@sfu.ca

DOI: 10.26603/ijspt20190845