

ORIGINAL RESEARCH

THE EFFECTS OF INSTRUMENT ASSISTED SOFT TISSUE MOBILIZATION ON LOWER EXTREMITY MUSCLE PERFORMANCE: A RANDOMIZED CONTROLLED TRIAL

Nicole MacDonald, DrPH, ATC, CSCS¹Russell Baker, DAT, ATC²Scott W. Cheatham, PhD, DPT, PT, OCS, ATC, CSCS³

ABSTRACT

Background: Instrument-Assisted Soft Tissue Mobilization (IASTM) is a non-invasive therapeutic technique used to theoretically aid in scar tissue breakdown and absorption, fascial mobilization, and improved tissue healing. Researchers have hypothesized that utilizing IASTM will improve muscular efficiency and performance; yet previous investigations has been focused on treating injury.

Objective: The purpose of this investigation was to explore the effects of IASTM on muscle performance to assess if typical treatment application affected measures of muscular performance.

Design: A pretest-posttest randomized control design.

Participants: A convenience sample of 48 physically active adults (mean age 24 ± 4 years), randomly assigned to one of three groups: quadriceps treatment group, triceps surae treatment group, or control group.

Interventions: Participants performed a five-minute warm-up on a Monark bicycle ergometer before performing three countermovement vertical jumps (CMJ). Immediately after, the IASTM treatment was applied by one researcher for three minutes on each leg at the specified site (e.g., quadriceps) for those assigned to the treatment groups, while the control group rested for six minutes. Immediately following treatment, participants performed three additional CMJs. Pre- and post-testing included measures of vertical jump height (JH), peak power (PP) and peak velocity (PV).

Results: There were no statistically significant differences found between treatment groups in JH, PP, or PV or across pre- and post-test trials.

Conclusions: These preliminary findings suggest that standard treatment times of IASTM do not produce an immediate effect in muscular performance in healthy participants. This may help clinicians determine the optimal sequencing of IASTM when it is part of a pre-performance warm-up program. Future research should be conducted to determine the muscle performance effects of IASTM in individuals with known myofascial restriction and to determine optimal treatment parameters, such as instrument type, amount of pressure, and treatment time necessary to affect muscular performance.

Level of Evidence: 1b

Keywords: Massage, myofascial release, instrument-assisted

CORRESPONDING AUTHOR

Nicole MacDonald
California Baptist University
8432 Magnolia Ave.
Riverside, CA 92504
(951) 343-4379
E-mail: nmacdona@calbaptist.edu

¹ California Baptist University, Riverside, CA, USA

² University of Idaho, Moscow, ID, USA

³ California State University Dominguez Hills, Carson, CA, USA