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The Acute Effect of Different Self-Myofascial Release Modalities on Anaerobic Sports Performance and Functional Movement

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Self-myofascial release (SMR) has known benefits for accelerating post-exercise recovery and enhancing acute flexibility, but is emerging in popularity as a pre-exercise technique to enhance anaerobic athletic performance. There is little research on the topic and no standardized recommended method of SMR that optimize athletic performance. **PURPOSE:** To determine if an acute bout of SMR using two different myofascial rollers will improve lower body anaerobic sports performance and functional movement in male and female NCAA Division III soccer players. **METHODS:** Male and female collegiate soccer players ($n = 20$; 10 men and 10 women; weight: 70.55 ± 2.51 kg; height: 174.31 ± 1.76 cm) participated in a crossover, repeated measures study where they were randomized to either a control (CON), conventional Bio-foam roller (BFR), or rigid roller (RR) condition. A dynamic warm-up was performed before each experimental session. For each trial, subjects performed a functional movement screen (FMS), vertical jump (VJ), pro-agility test (PA), and 30 meter sprint (30M). Participants performed an SMR technique bi-laterally on the major muscle groups of the lower body using both myofascial rollers. Subjects rolled each lower extremity muscle for three sets of 30s prior to performing the anaerobic tests. Each trial was separated by seven days. **RESULTS:** There was no significant improvement between the CON and either myofascial roller on any of the anaerobic sports performance tests (VJ: $p = 0.993$; PA: $p = 0.676$; 30M: $p = 0.246$). There was a significant difference between CON, BFR, and RR conditions for composite FMS scores ($p = 0.013$). The RR condition had a significantly lower FMS composite score compared to the CON condition ($p = 0.023$) and the BFR condition ($p = 0.022$). In addition, significant difference were noted between CON, BFR, and RR conditions in the three categories of the FMS: fundamental mobility ($p = .046$), fundamental stability ($p = 0.004$), and functional movement ($p = 0.023$). **CONCLUSION:** SMR through the use of foam rollers does not enhance athletic performance when used before exercise and a more rigid modality of SMR reduces functional movement. The dynamic warm up alone may have been sufficient for optimal performance.