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### Effects of Different Muscle Recovery Techniques following a Delayed Onset Muscle Soreness-Inducing Exercise Protocol

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Muscle recovery following a muscle damage-inducing protocol is often difficult to quantify. Muscle recovery is subjective and each individual who experiences muscle damage is likely to report a greater or lesser degree of soreness depending on their tolerance to pain. While numerous muscle recovery techniques exist to help alleviate soreness, the most effective technique is unclear. **PURPOSE:** To quantify muscle recovery following a damage-inducing exercise protocol by examining the effects of static stretching, foam rolling, and electrical stimulation and their effect on muscle swelling, range of motion, and perceived pain following exercise. **METHODS:** Subjects were randomly divided into four groups; passive recovery (PR), static stretching (SS), foam rolling (FR), and electrical stimulation (ES). All subjects completed a standardized lower body exercise protocol aimed at inducing delayed onset muscle soreness (DOMS) and measurements of thigh girth, range of motion of the knee, and perceived pain were assessed before (Pre), immediately post (IP), 24, 48, and 72 hours following the lower body workout. Comparisons were made using a two-way ANOVA with repeated measures.  $P \leq 0.05$  was considered statistically significant. **RESULTS:** There were no significant differences with regards to range of motion or thigh circumference between any of the experimental groups or times examined. However, there was a significant difference in perceived pain ( $P=0.012$ ). The SS group saw a 4.5 decrease in perceived pain from IP to 72 hours post lower body workout when compared to the ES (-3.5), FR (-3), and PR (-1.5) groups, respectively. **CONCLUSION:** Static stretching following exercise appears to improve perceived pain of DOMS better than foam rolling, electrical stimulation, or passive recovery. **SIGNIFICANCE/NOVELTY:** The novelty of this study was that it examined multiple muscle recovery techniques across time instead of just one recovery technique versus a control group.