

The Efficacy of Sustained Heat Treatment on Delayed-Onset Muscle Soreness

Jerrold Petrofsky, Lee Berk, Gurinder Bains, Iman Akef Khowailed, Haneul Lee, Michael Laymon

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Delayed-onset muscle soreness (DOMS) is a relatively common phenomenon experienced by people who are new to exercise, or essentially anyone who exceeds their normal workout intensity. DOMS can range from mild irritation to severe pain that can form a significant barrier inhibiting performance, or exercise participation altogether. Furthermore, previous research has shown that DOMS is greater in intensity and duration in older individuals and individuals with diabetes, which is a particularly important patient population within family medicine. This cross-sectional repeated measure design study was performed to assess the impact on DOMS of heat applied for 8 hours immediately or 24 hours after exercise.

60 subjects aged 20-40 who were physically inactive for 6 weeks and had BMI's less than 40 were divided randomly into 3 groups (control, ThermaCare heat wraps applied immediately after exercise, and ThermaCare heat wraps applied 24 hours after exercise). To provoke DOMS, the subjects completed squats in 3, 5-minute bouts with 3 minutes of rest in-between each bout. Visual analog pain scales, blood myoglobin, muscle strength, range of motion, and stiffness of the quads were the main outcome measures of the study.

The results revealed a significant reduction in soreness in the group that had the heat wraps applied immediately after exercise ($P < 0.01$). This was corroborated by blood myoglobin, algometer and muscle stiffness data. In addition, there was some benefit to applying the heat 24 hours after exercise when compared to control.

In summary, low-level continuous heat wraps left for 8 hours after heavy exercise can reduce the effects of DOMS (assessed by both subjective and objective measures). Although cold therapy is commonly used after heavy exercise to reduce soreness, heat seems to have the added benefit of increasing flexibility of tissue and tissue blood flow. The authors note that for the purposes of reducing joint swelling, it is still probably better to use cold therapy.

Sean Mindra MD, CCFP

PGY3 – Sport and Exercise Medicine, University of Ottawa

Advisor: Dr. Taryn Taylor BKin, MSc, MD, CCFP (SEM), Dip Sport & Exercise Medicine