

# Effect of Phototherapy on Delayed Onset Muscle Soreness

*Douris P, Southard V, Ferrigi R, Grauer J, Katz D, Nascimento C, Podbielski P.*

Department of Physical Therapy, School of Health Professions, Behavioral and Life Sciences, New York Institute of Technology, Old Westbury, New York 11568-8000, USA.

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## Abstract

**OBJECTIVE:** The purpose of this study was to investigate the effects of phototherapy on delayed onset muscle soreness (DOMS) as measured using the Visual Analog Scale (VAS), McGill Pain Questionnaire, Resting Angle (RANG), and girth measurements.

**BACKGROUND DATA:** Previous research has failed to prove the beneficial effects of phototherapy on DOMS.

**METHODS:** This was a randomized double-blind controlled study with 27 subjects (18-35 years) assigned to one of three groups. The experimental group received 8 J/cm<sup>2</sup> of phototherapy each day for five consecutive days using super luminous diodes with wavelengths of 880 and visible diodes of 660 nm at three standardized sites over the musculotendinous junction of the bicep. The sham group received identical treatment from a dummy cluster. The controls did not receive treatment. The study was completed over five consecutive days: on day one baseline measurements of RANG and upper arm girths were recorded prior to DOMS induction. On days 2-5, RANG, girth, and pain were assessed using VAS and the McGill Pain Questionnaire.

**RESULTS:** The experimental group exhibited a significant decrease in pain associated with DOMS compared to the control ( $p=0.01$ ) and sham groups ( $p=0.03$ ) based upon the VAS at the 48-h period. The McGill Pain Questionnaire showed a significant difference in pain scores at the 48-h period between the experimental and the sham groups ( $p=0.01$ ). There were no significant differences day to day and between the groups with respect to girth and RANG.

**CONCLUSION:** The results of this study provide scientific evidence that phototherapy as used in this study provides a beneficial effect to patients who may experience DOMS after a novel exercise session.