

## Low-level laser therapy for acute neck pain with radiculopathy: a double-blind placebo-controlled randomized study.

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### Abstract

**Objective.** The objective of the study was to investigate clinical effects of low-level laser therapy (LLLT) in patients with acute neck pain with radiculopathy.

**Design.** Double-blind, randomized, placebo-controlled study.

**Setting.** The study was carried out between January 2005 and September 2007 at the Clinic for Rehabilitation at the Medical School, University of Belgrade, Serbia.

**Patients and Intervention.** Sixty subjects received a course of 15 treatments over 3 weeks with active or an inactivated laser as a placebo procedure. LLLT was applied to the skin projection at the anatomical site of the spinal segment involved with the following parameters: wavelength 905 nm, frequency 5,000 Hz, power density of 12 mW/cm<sup>2</sup>, and dose of 2 J/cm<sup>2</sup>, treatment time 120 seconds, at whole doses 12 J/cm<sup>2</sup>.

**Outcome measures.** The primary outcome measure was pain intensity as measured by a visual analog scale. Secondary outcome measures were neck movement, neck disability index, and quality of life. Measurements were taken before treatment and at the end of the 3-week treatment period.

**Results.** Statistically significant differences between groups were found for intensity of arm pain ( $P = 0.003$ , with high effect size  $d = 0.92$ ) and for neck extension ( $P = 0.003$  with high effect size  $d = 0.94$ ).

**Conclusion.** LLLT gave more effective short-term relief of arm pain and increased range of neck extension in patients with acute neck pain with radiculopathy in comparison to the placebo procedure.