

# **Systematic review of the literature of low-level laser therapy (LLLT) in the management of neck pain.**

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## **Abstract**

### **BACKGROUND AND OBJECTIVES:**

Low-level laser therapy (LLLT) is widely used in the treatment of musculoskeletal pain. However, there is controversy over its true efficacy. We aimed to determine the efficacy of LLLT in the treatment of neck pain through systematically reviewing the literature.

### **STUDY DESIGN/MATERIALS AND METHODS:**

A search of computerized bibliographic databases covering medicine, physiotherapy, allied health, complementary medicine, and biological sciences was undertaken undertaken from date of inception until February 2004 for randomized controlled trials of LLLT for neck pain. A comprehensive list of search terms was applied and explicit inclusion criteria were developed a priori. Twenty studies were identified, five of which met the inclusion criteria.

### **RESULTS:**

Significant positive effects were reported in four of five trials in which infrared wavelengths ( $\lambda = 780, 810-830, 904, 1,064 \text{ nm}$ ) were used.

Heterogeneity in outcome measures, results reporting, doses, and laser parameters precluded formal meta-analysis. Effect sizes could be calculated for only two of the studies.

### **CONCLUSIONS:**

This review provides limited evidence from one RCT for the use of infrared laser for the treatment of acute neck pain ( $n = 71$ ) and chronic neck pain from four RCTs ( $n = 202$ ). Larger studies are required to confirm the positive findings and determine the most effective laser parameters, sites and modes of application.

## **Efficacy of low power laser therapy in fibromyalgia: a single-blind, placebo-controlled trial.**

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Lasers Med Sci. 2002;17(1):57-61.

### **Abstract**

Low energy lasers are widely used to treat a variety of musculoskeletal conditions including fibromyalgia, despite the lack of scientific evidence to support its efficacy. A randomised, single-blind, placebo-controlled study was conducted to evaluate the efficacy of low-energy laser therapy in 40 female patients with fibromyalgia. Patients with fibromyalgia were randomly allocated to active (Ga-As) laser or placebo laser treatment daily for two weeks except weekends. Both the laser and placebo laser groups were evaluated for the improvement in pain, number of tender points, skinfold tenderness, stiffness, sleep disturbance, fatigue, and muscular spasm. In both groups, significant improvements were achieved in all parameters ( $p < 0.05$ ) except sleep disturbance, fatigue and skinfold tenderness in the placebo laser group ( $p > 0.05$ ). It was found that there was no significant difference between the two groups with respect to all parameters before therapy whereas a significant difference was observed in parameters as pain, muscle spasm, morning stiffness and tender point numbers in favour of laser group after therapy ( $p < 0.05$ ). None of the participants reported any side effects. Our study suggests that laser therapy is effective on pain, muscle spasm, morning stiffness, and total tender point number in fibromyalgia and suggests that this therapy method is a safe and effective way of treatment in the cases with fibromyalgia.