

## **Effects of Class IV laser therapy on fibromyalgia impact and function in women with fibromyalgia.**

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### **Abstract**

#### **OBJECTIVES:**

This study evaluated the effects of Class IV laser therapy on pain, Fibromyalgia (FM) impact, and physical function in women diagnosed with FM.

#### **DESIGN:**

The study was a double-blind, randomized control trial.

#### **SETTING:**

Testing was completed at the university and Rheumatologist office and treatment was completed at a chiropractic clinic.

#### **PARTICIPANTS:**

Thirty-eight (38) women (52±11 years; mean±standard deviation) with FM were randomly assigned to one of two treatment groups, laser heat therapy (LHT; n=20) or sham heat therapy (SHT; n=18).

#### **INTERVENTION:**

Both groups received treatment twice a week for 4 weeks. Treatment consisted of application of LHT or SHT over seven tender points located across the neck, shoulders, and back. Treatment was blinded to women and was administered by a chiropractic physician for 7 minutes.

#### **OUTCOME MEASURES:**

Participants were evaluated before and after treatment for number and sensitivity of tender points, completed the FM Impact Questionnaire (FIQ) and the pain question of the FIQ, and were measured for function using the continuous scale physical functional performance (CS-PFP) test. Data were evaluated using repeated-measures analysis of variance with significance accepted at  $p \leq 0.05$ .

#### **RESULTS:**

There were significant interactions for pain measured by the FIQ (LHT: 7.1±2.3 to 6.2±2.1 units; SHT: 5.8±1.3 to 6.1±1.4 units) and for upper body flexibility measured by the CS-PFP (LHT: 71±17 to 78±12 units; SHT: 77±12 to 77±11 units) with the LHT improving significantly

compared to SHT. There was a time effect for the measure of FM impact measured by the FIQ, indicating that FM impact significantly improved from pre- to post-treatment in LHT ( $63\pm 20$  to  $57\pm 18$  units), while no change was observed in the SHT ( $57\pm 11$  to  $55\pm 12$  units).

#### **CONCLUSIONS:**

This study provides evidence that LHT may be a beneficial modality for women with FM in order to improve pain and upper body range of motion, ultimately reducing the impact of FM.

## **Low-level laser therapy to treat fibromyalgia.**

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#### **Abstract**

Several clinical treatments have been proposed to manage symptoms of fibromyalgia. Low-level laser therapy (LLLT) may be a useful tool to treat this dysfunction. The aim of this study was to evaluate the effects of LLLT in patients with fibromyalgia. A placebo-controlled, randomized clinical trial was carried out with 20 patients divided randomly into either an LLLT group (n = 10) or a placebo group (n = 10). The LLLT group was treated with a GaAlAs laser (670 nm, 4 J/cm<sup>2</sup>) on 18 tender points) three times a week over 4 weeks. Before and after treatment, patients were evaluated with the Fibromyalgia Impact Questionnaire (FIQ), McGill Pain Questionnaire, and visual analog scale (VAS). Data from the FIQ and McGill questionnaire for the treated and control groups were analyzed by paired t tests, and Wilcoxon tests were used to analyze data from the VAS. After LLLT or sham treatment, the number of tender points was significantly reduced in both groups (LLLT,  $p < 0.0001$ ; placebo,  $p = 0.0001$ ). However, all other fibromyalgia symptoms showed significant improvements after LLLT compared to placebo (FIQ,  $p = 0.0003$ ; McGill,  $p = 0.0078$ ; and VAS,  $p = 0.0020$ ). LLLT provided relief from fibromyalgia symptoms in patients and should be further investigated as a therapeutic tool for management in fibromyalgia.

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

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### **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.

## **Effects of low power laser and low dose amitriptyline therapy on clinical symptoms and quality of life in fibromyalgia: a single-blind, placebo-controlled trial.**

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### **Abstract**

The purpose of this study was to examine the effectiveness of low power laser (LPL) and low-dose amitriptyline therapy and to investigate effects of these therapy modalities on clinical symptoms and quality of life (QOL) in patients with fibromyalgia (FM). Seventy-five patients with FM were randomly allocated to active gallium-arsenide (Ga-As) laser (25 patients), placebo laser (25 patients), and amitriptyline therapy (25 patients). All groups were evaluated for the improvement in pain, number of tender points, skin fold tenderness, morning stiffness, sleep disturbance, muscular spasm, and fatigue. Depression was evaluated by a psychiatrist according to the Hamilton Depression Rate Scale and DSM IV criteria. Quality of life of the FM patients was assessed according to the Fibromyalgia Impact Questionnaire (FIQ). In the laser group, patients were treated for 3 min at each tender point daily for 2 weeks, except weekends, at each point with approximately 2 J/cm<sup>2</sup> using a Ga-As laser. The same unit was used for the placebo treatment, for which no laser beam was emitted. Patients in the amitriptyline group took 10 mg daily at bedtime throughout the 8 weeks. Significant improvements were indicated in all clinical parameters in the laser group ( $P = 0.001$ ) and significant improvements were indicated in all clinical parameters except fatigue in the amitriptyline group ( $P = 0.000$ ), whereas significant improvements were indicated in pain ( $P = 0.000$ ), tender point number ( $P = 0.001$ ), muscle spasm ( $P = 0.000$ ), morning stiffness ( $P = 0.002$ ), and FIQ score ( $P = 0.042$ ) in the placebo group. A significant difference was observed in clinical parameters such as pain intensity ( $P = 0.000$ ) and fatigue ( $P = 0.000$ ) in favor of the laser group over the other groups, and a significant difference was observed in morning stiffness ( $P = 0.001$ ), FIQ ( $P = 0.003$ ), and depression score ( $P = 0.000$ ) after therapy. A significant difference was observed in morning stiffness ( $P = 0.001$ ), FIQ ( $P = 0.003$ ), and depression ( $P = 0.000$ ) in the amitriptyline group compared to the placebo group after therapy. Additionally, a significant difference was observed in depression score ( $P = 0.000$ ) in the amitriptyline group in comparison to the laser group after therapy. Our study suggests that both amitriptyline and laser therapies are effective on clinical symptoms and QOL in fibromyalgia and that Ga-As laser therapy is a safe and effective treatment in cases with FM. Additionally, the present study suggests that the Ga-As laser therapy can be used as a monotherapy or as a supplementary treatment to other therapeutic procedures in FM.