

## Fibromyalgia

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### **Physical therapy modalities in management of fibromyalgia.**

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The etiology of fibromyalgia syndrome (FM) is uncertain and the prognosis for symptomatic recovery is generally poor. A wide variety of interventions are used in the management of FM. There is, however, no clear consensus on the treatment of choice and FM remains relatively refractory to treatment. Therefore, prevention, causal therapy and rehabilitation are not possible. FM patients frequently use alternative therapies, indicating dissatisfaction or ineffectiveness of traditional medical therapy. Alternative therapies are generally perceived to be more "natural" and as a result, to have fewer adverse effects. Despite the positive results found, the number of publications related to the application of physical therapy modalities such as acupuncture, transcutaneous electrical stimulation, laser, biofeedback, electrotherapy and magnetic field is still scant, especially concerning FM treatment. The demonstration of a long-term effective intervention for managing the symptoms associated with FM is needed. Multidisciplinary approaches to management include physical and medical therapeutic strategies. Treatment modalities should be individualised for patients based on target symptoms and impairment in functioning. Patience and positive attitude on part of the physician and active involvement of patients and their families in treatment are likely to enhance improvement. It can be concluded that there is a need for larger, more systematic and methodologically sound randomised controlled clinical trials to evaluate the effectiveness of physical therapy modalities of managing FM. We will review some of the existing studies of physical therapy relevant in the treatment of FM and give some practical advice for their use.

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### **Low-power laser treatment for shoulder pain.**

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**OBJECTIVE:** The objective of this study is to investigate the effect of low-power gallium-arsenide laser treatment on the patients with shoulder pain. **BACKGROUND DATA:** Low-energy laser therapy has recently been popularized in the treatment of various rheumatologic, neurologic, and musculoskeletal disorders such as osteoarthritis, rheumatoid arthritis, fibromyalgia, carpal tunnel syndrome, rotator cuff tendinitis, and chronic back pain syndromes. **METHODS:** A total of 40 patients who applied to our clinic with shoulder pain and complied with the selection criteria were included in the study. The patients were randomly assigned into Group I (n = 20, laser treatment) and Group II (n = 20, control). In Group I, patients were given laser treatment and an exercise protocol for 10 sessions during a period of 2 weeks. Laser was applied over tuberculum majus and minus, bicipital groove, and anterior and posterior faces of the capsule, regardless of the existence of sensitivity, for 1 min at each location at each session with a frequency of 2000 Hz using a GaAs diode laser instrument (Roland Serie Elettronica Pagani, wavelength 904 nm, frequency range of 5-7000 Hz, and maximum peak power of 27 W, 50 W, or 27 x 4 W). In Group II, placebo laser and the same exercise protocol was given for the same period. Patients were evaluated according to the parameters of pain, palpation sensitivity, algometric sensitivity, and shoulder joint range of motion before and after treatment. **RESULTS:** Analysis of measurement results within each group showed a significant posttreatment improvement for some active and passive movements in both groups, and also for algometric sensitivity in Group I ( $p < 0.05-0.01$ ). Posttreatment palpation sensitivity values showed improvement in 17 patients (85%) for Group I and six patients (30%) for Group II. Comparison between two groups showed superior results ( $p < 0.01$  and  $p < 0.001$ ) in Group I for the parameters of passive extension and palpation sensitivity but no significant difference for other parameters. **CONCLUSIONS:** The results of our study have shown better results in palpation sensitivity and passive extension, but no significant improvement in pain, active range, and algometric sensitivity in laser treatment group compared to the control group in the patients with shoulder pain.

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

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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.

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### **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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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.

Ugeskr Laeger. 1991 Jun 17;153(25):1801-4.

### **[Low energy laser treatment--effect in localized fibromyalgia in the neck and shoulder regions]**

[Article in Danish]

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The effect of low-level laser therapy (GaAlAs, 830 nm, continuous) for chronic myofascial pain in the neck and shoulder girdle was assessed in a double-blind randomized study with 36 female participants. Treatments were given six times during two weeks with a total effect of 4.5-22.5 J per treatment depending on the number of tender points. No significant effect was found, neither in pain relief nor in tablet intake between the laser and the placebo group. None of the participants reported any side-effects.