

The Effect Of Low-Level Laser Therapy On Musculoskeletal Pain: A Meta-Analysis

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Pain. 1993 Jan;52(1):63-6.

A meta-analysis was undertaken of low-level laser therapy (LLLT) on musculoskeletal pain. A literature search revealed 23 LLLT trials and of these 17 were controlled trials. Ten were double blind and 7 were insufficiently blinded. Within the studies identified pain was assessed by visual analogue scale or by "some other indices of pain". Nine double-blind trials and 4 controlled trials presented results in a form which allowed pooling of data. In the double-blind trials, the mean difference in pain between LLLT and placebo was 0.3% (S.E.(d) 4.6%, confidence limits -10.3-10.9%). In the insufficiently blinded trials the mean difference in pain was 9.5% (S.E.(d) 4.5%, confidence limits -2.9- 21.8%). We conclude that LLLT has no effect on pain in musculoskeletal syndromes.

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Low Level Laser Therapy For Myofascial Pain In The Neck And Shoulder Girdle. A Double-Blind, Cross-Over Study

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Scand J Rheumatol. 1992;21(3):139-41.

In a controlled, cross-over study the effect of low level laser therapy (LLLT) was evaluated. During a five weeks period forty-seven female laboratory technicians received six laser and six placebo treatments to tender points in the neck and shoulder girdle. Subjects rated the placebo treatment significantly more beneficial than LLLT ($p = .04$). There was no reduction in consumption of analgesics associated with either laser or placebo treatment. The results indicate no beneficial effect of LLLT for myofascial pain.

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Low Level Laser Therapy With Trigger Points Technique: A Clinical Study On 243 Patients

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Among the various methods of application techniques in low level laser therapy (LLLT) (HeNe 632.8 nm visible red or infrared 820-830 nm continuous wave and 904 nm pulsed emission) there are very promising "trigger points" (TPs), i.e., myofascial zones of particular sensibility and of highest projection of focal pain points, due to ischemic conditions. The effect of LLLT and the results obtained after clinical treatment of more than 200 patients (headaches and facial pain, skeletomuscular ailments, myogenic neck pain, shoulder and arm pain, epicondylitis humery, tenosynovitis, low back and Radicular pain, Achilles tendinitis) to whom the "trigger points" were applied were better than we had ever expected. According to clinical parameters, it has been observed that the rigidity decreases, the mobility is restored (functional recovery), and the spontaneous or induced pain decreases or even disappears, by movement, too. LLLT improves local microcirculation and it can also improve oxygen supply to hypoxic cells in the TP areas and at the same time it can remove the collected waste products. The normalization of the microcirculation, obtained due to laser applications, interrupts the "circulus vitiosus" of the origin of the pain and its development (Melzak: muscular tension > pain > increased tension > increased pain, etc.). Results measured according to VAS/VRS/PTM: in acute pain, diminished more than 70%; in chronic pain more than 60%. Clinical effectiveness (success or failure) depends on the correctly applied energy dose--over/underdosage produces opposite, negative effects on cellular metabolism. We did not observe any negative effects on the human body and

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the use of analgesic drugs could be reduced or completely excluded. LLLT suggests that the laser beam can be used as monotherapy or as a supplementary treatment to other therapeutic procedures for pain treatment.

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