

# Comparing the effects of exercise program and low-level laser therapy with exercise program and polarized polychromatic non-coherent light (biopton light) on the treatment of lateral elbow tendinopathy.

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## Abstract

### BACKGROUND DATA:

The use of low-level laser therapy (LLLT) and polarized polychromatic non-coherent light as supplements to an exercise program has been recommended for the management of lateral elbow tendinopathy (LET).

### OBJECTIVE:

To investigate whether an exercise program supplemented with LLLT is more successful than an exercise program supplemented with polarized polychromatic non-coherent light in treating LET.

### MATERIALS AND METHODS:

Patients with unilateral LET for at least 4 wk were sequentially allocated to receive either an exercise program with LLLT or an exercise program with polarized polychromatic non-coherent light. The exercise program consisted of eccentric and static stretching exercises of wrist extensors. In the LLLT group a 904-nm Ga-As laser was used in continuous mode, and the power density was 130 mW/cm<sup>2</sup>, and the dose was 0.585 J/point. In the group receiving polarized polychromatic non-coherent light the Biopton 2 was used to administer the dose perpendicularly to the lateral epicondyle at three points at an operating distance of 5-10 cm for 6 min at each position. The outcome measures were pain and function and were evaluated at baseline, at the end of the treatment (week 4), and 3 mo after the end of treatment (week 16).

### RESULTS:

Fifty patients met the inclusion criteria. At the end of treatment there was a decline in pain and a rise in function in both groups compared with baseline ( $p < 0.0005$  on the paired t-test). There were no significant differences in the reduction of pain and the improvement of function between the groups at the end of treatment and at the 3-mo follow-up ( $p > 0.0005$  on the independent t-test).

### CONCLUSIONS:

The results suggest that the combination of an exercise program with LLLT or polarized polychromatic non-coherent light is an adequate treatment for patients with LET. Further research to establish the relative and absolute effectiveness of such a treatment approach is needed.

