

**Evcik D, Kavuncu V, et al. Laser Therapy in the Treatment of Carpal Tunnel Syndrome: A Randomized Controlled Trial. Photomed Laser Surg 2007;25:34-39.**

Design: Randomized clinical trial

Brief summary of results:

- 81 patients (70 women, 11 men, mean age 49, 141 hands, bilateral in 60 patients) treated for carpal tunnel syndrome at a university physical medicine department in Turkey
- Randomized to low level laser therapy (LLLT, n=41) or placebo LLLT (n=40), five times a week for two weeks (10 sessions)
- LLLT administered at wavelength of 830 nm over carpal tunnel area
- Measurements were made at baseline and after 4 weeks and 12 weeks of hand grip, pinch grip, pain VAS, symptom severity scores, and nerve conduction
- Hand grip improved only in the LLLT group
- Pinch grip improved in both groups without significant differences between groups
- Pain scores and symptom severity scores improved in both groups without significant differences between groups
- Only the LLLT group improved sensory and motor distal latency; both groups improved sensory nerve velocity

Authors' conclusions:

- LLLT had no advantage over placebo for pain relief
- LLLT had positive effects on hand and pinch grip strengths
- There is little data on the optimal dosage of laser for CTS

Comments:

- Description of some important information is not clear or lacking: the randomization appears to have been done by patient, and the reader must infer that the 60 patients with bilateral CTS had treatment to both wrists; it is not clear whether the follow-up scores were reported on the basis of patients or wrists
- If both wrists were treated and tested for follow-up, a key assumption of statistical analysis is violated: the outcome measurements are not independent but highly correlated
- If only one wrist was used for assessment of outcome, this is not explained
- When a large number of patients have bilateral CTS, an opportunity presents itself to apply LLLT to one wrist and placebo to the other wrist; this was not done
- The reported difference in hand grip does not appear to have been accompanied by a difference in symptom severity (scale of symptom severity is not clear)
- Pain and symptom severity are not given in tabular form but in Figures 1, 2, and 3; unfortunately, the scanned copy does not display the placebo response clearly

- CTS was diagnosed on the basis of Phalen, Tinel, flick test, and “Buda test;” the latter is presumably another clinical observation whose meaning is lost in translation; this does not affect the validity of the study but remains unclear

Assessment: Inadequate (set-up and analysis of data is unclear; no confidence can be placed in any conclusion that LLLT is more effective than placebo)