

Irvine J, Chong SL et al. Double-blind Randomized Controlled Trial of Low-Level Laser Therapy in Carpal Tunnel Syndrome. Muscle Nerve 2004;30:182-187.

Design: Randomized Clinical Trial

Brief summary of results:

- 15 patients (3 men, 12 women, mean age 46) treated for carpal tunnel syndrome at a physiatry department at the University of Alberta
- Inclusion criteria were clinical and electrophysiological (median nerve symptoms with conduction slowing or block)
- Exclusion criterion was marked axonal loss
- Outcome measures were the Levine CTS Questionnaire (11 items assessing pain, numbness, and hand function) and Purdue pegboard test score
- Outcomes were assessed at baseline, midtreatment, immediately after treatment, and 4 weeks after treatment
- Randomized to low-level laser treatment (LLLT) 3 times a week for 5 weeks (n=7), or placebo LLLT on the same schedule (n=8)
- Levine CTS scores improved in both groups between baseline and end of study; no differences in groups were seen
- Purdue pegboard scores did not change in either group during the study

Authors' conclusions:

- LLLT is no more effective than placebo LLLT in improving CTS symptoms or median nerve function
- A limitation of the study is that the protocol is labor intensive, requiring thrice weekly visits for 5 weeks, limiting the number of patient willing to participate

Comments:

- A significant limitation not mentioned by the authors is the small size of the sample; it is sufficient to have 80% power to detect a difference of 1.4 standard deviations between groups (a fairly large effect size)
- The authors report no significant difference in age between the groups (50±4 for the control and 43±4 for the LLLT group); this 7 year difference yields a value of t of 3.38 with 13 degrees of freedom, for a p value of .005—the control group was older

Assessment: methodologically sound, but underpowered (therefore inadequate) to support an evidence statement that LLLT does not differ from placebo