



**AMERICAN COLLEGE**  
**of SPORTS MEDICINE**

## Presentation Abstract

**Presentation:** The Efficacy of Class IV Laser Treatment for Epicondylitis; A Randomised Controlled Trial

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**Abstract:** Low level lasers (LLL) have been shown to decrease PGE2 levels (Bjordal et al, 2006), increase nitric oxide synthase activity (Samoilova et al, 2008) and collagen turnover (Lopes-Martins et al, 2007). Previous studies have used class IIIb lasers with power outputs of less than 0.5W; here we evaluate a dual wavelength (980/808 nm) class IV laser with a power output of 10W.

**Purpose:** To determine the efficacy of class IV laser therapy to alleviate the pain and dysfunction associated with chronic epicondylitis.

**Methods:** Fifteen subjects volunteered for a double blind randomized study using laser therapy (LT) (LiteCure LCT-1000), or an identical sham. Subjects underwent clinical examination (pain, range of motion, strength and ultrasonic imaging) to confirm chronic tendinosis of the extensor carpi radialis brevis tendon followed by eight treatments of 10 J/cm<sup>2</sup> over 18 days. The exam was repeated at 0, 3, 6 and 12 months post-treatment.

**Results:** No differences were seen between the two groups prior to treatment. In the year following treatment, pain and strength measures consistently improved significantly in the LT group but not in the Sham group.

**Conclusion:** These findings suggest that LT is efficacious for the long term relief of the symptoms associated with chronic epicondylitis. The potential for a fast, safe and effective treatment warrants further investigation.

**Table: Post-LT pain and strength scores (Mean±SD)**

Handgrip (kg)	Initial	Post-treat	3 mo-post	6 mo-post	12 mo-post
Sham	29±9	26±10	28±11	29±11	
LT	27±11	28±11	32±13	41±11	41±10
<b>Functional Impairment (1-5, 5 = useless)</b>					
Sham	2.3±1	2.3±1	1.9±1	2.2±1	
LT	3.0±1	2.1±1	1.6±0.5	1.0±1	0.7±0.5
<b>Pain Handgrip (VAS 1-10)</b>					
Sham	4.3±3	4.0±3	2.3±3	2.7±2	
LT	4.4±2	3.6±2	1.3±1	0.9±1	0.8±1
<b>Pain Lateral Palpation (VAS 1-10)</b>					
Sham	5.1±2	3.4±3	3.3±3	4.1±2.5	
LT	5.8±2	4.5±2	3.1±2	1.4±1.5	0.9±1
<b>Pain Extension Middle Finger (VAS 1-10)</b>					
Sham	5.3±1	4.4±1	3.7±2	3.4±2	
LT	5.3±2	3.8±2	2.6±1	0.4±1	0.1±0.1

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