

A RANDOMIZED CONTROLLED TRIAL FOR THE EFFICACY OF THERAPEUTIC CLASS IV LASER TREATMENT FOR TENDINOSIS

Authors: Delia Roberts, FACSM, Selkirk College, Castlegar, BC, Canada; Roger Kruse, FACSM, Matthew Petznick, Jacklyn Kiefer, Peter Alaskym, Stephen Stoll, ProMedica, Toledo, OH

CLASS IV LASER THERAPY CASE REPORT

ABSTRACT:

There is little consensus regarding effective treatments for tendinosis. Low level laser therapy (LLLT) has been shown to be effective at the cellular level, increasing cytochrome C oxidase production and reversing the effects of cellular inhibitors of respiration. Previous studies on LLLT have used class III lasers (output less than 0.5W); however, recently a dual wavelength (980/808 nm) class IV laser has been developed for use in LLLT (power output 10W). These instruments can deliver 8-9 J/cm², achieving a photochemical biomodulatory dose in only minutes. The potential for a fast, safe and effective treatment warrants further investigation.

PURPOSE:

To determine the efficacy of a class IV laser for the treatment of chronic epicondylitis.

METHODS:

Ten subjects volunteered to participate in a double blinded randomized study using LLLT (LiteCure LCT 1000), or an identical sham in which the laser was replaced with a red incandescent light. Subjects underwent clinical examination (measures of pain, range of motion, strength and ultrasonic imaging) to confirm the diagnosis of chronic tendinosis of the

extensor carpi radialis brevis tendon followed by eight treatments of 10 J/cm² over 18 days. The clinical exam was/will be repeated at completion of the treatments and at 3, 6 and 12 months post-treatment.

RESULTS:

No differences were noted between the two groups for any parameter before treatment. The mean duration of symptoms was 14.5±12 months, all subjects displayed pain and loss of strength and range of motion on the afflicted side, as well as ultrasonic evidence consistent with chronic tendinosis. There was a trend for increased strength (control change = -0.4±5.3 kg; LLLT change +0.8±3.7 kg; p<0.07) and decreased pain rating (change control = +0.6±3.3 units, 1/5 decreased pain; change LLLT= -2.6±3.3 units, 4/5 decreased pain; p<0.06) in the treatment group compared to the placebo group at the first post treatment exam.

CONCLUSION:

Preliminary results suggest that LLLT is efficacious for the treatment of chronic epicondylitis. However, it remains to be seen whether statistical significance will be achieved with a larger group and whether the ultrasonographic evidence will indicate improved tendon health at 3 months.



ABOUT THE AUTHORS

Dr. Delia Roberts is an Instructor for the Biology & Kinesiology Programs at Selkirk College and President & Chief Research Scientist, FitSafe Solutions Inc. She earned a BSc (Distinction) MSc in Exercise Biochemistry, and a PhD – Medical Science (U of Calgary). She is also a Fellow of the American College of Sports Medicine, Biology, NISOD 2007. Email: droberts@selkirk.ca

Roger Kruse, MD is a board certified Family Medicine and Sports Medicine and a member of ProMedica Physicians in Regenerative Medicine. Nationally and Internationally known for leadership in Sports Medicine and Musculoskeletal Medicine, Dr. Kruse utilizes his philosophy of “treat the whole patient individually”. This philosophy of diet, exercise, preventive medicine, and now Regenerative Medicine has been used on patients and athletes throughout the country.

ProMedica Regenerative Medicine
2865 N. Reynolds Rd., Suite 142
Toledo OH, 43615
Phone: 419-578-7515
Email: ProMedicaRegenerativeMedicine@ProMedica.org

Source of Study: AspenLasers.com



877-817-0365 • info@aspenslasers.com • aspenslasers.com