



Low Level Laser Therapy & superficial wound healing

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Low-Level Laser Therapy Facilitates Superficial Wound Healing in Humans: A Triple-Blind, Sham-Controlled Study

J. Ty Hopkins*; Todd A. McLoda†; Jeff G. Seegmiller‡; G. David Baxter§ *Brigham Young University, Provo, UT; †Illinois State University, Normal, IL; ‡Ohio University, Athens, OH; §University of Ulster, Belfast, Northern Ireland J. Ty Hopkins, PhD, ATC; Todd A. McLoda, PhD, ATC/L; and Jeff G. Seegmiller, EdD, ATC/L, contributed to conception and design; acquisition and analysis and interpretation of the data; and drafting, critical revision, and final approval of the article. G. David Baxter, DPhil, contributed to conception and design and critical revision and final approval of the article. Address correspondence to J. Ty Hopkins, PhD, ATC, Department of Physical Education, Brigham Young University, Provo, UT 84602-2070. Address e-mail to tyhopkins@byu.edu.

Objective: Low-level laser therapy (LLLT) has been promoted for its beneficial effects on tissue healing and pain relief. However, according to the results of in vivo studies, the effectiveness of this modality varies. Our purpose was to assess the putative effects of LLLT on healing using an experimental wound model.

Design and Setting: We used a randomized, triple-blind, placebo- controlled design with 2 within-subjects factors (wound and time) and 1 between-subjects factor (group). Data were collected in the laboratory setting. Subjects: Twenty-two healthy subjects (age 5 21 6 1 years, height 5 175.6 6 9.8 cm, mass 5 76.2 6 14.2 kg).

Measurements: Two standardized 1.27-cm² abrasions were induced on the anterior forearm. After wound cleaning, standardized digital photos were recorded. Each subject then received LLLT (8 J/cm²; treatment time 5 2 minutes, 5 seconds; pulse rate 5 700 Hz) to 1 of the 2 randomly chosen wounds from either a laser or a sham 46-diode cluster head. Subjects reported back to the laboratory on days 2 to 10 to be photographed and receive LLLT and on day 20 to be photographed. Data were analyzed for wound contraction (area), color changes (chromatic red), and luminance.

Results: A group 3 wound 3 time interaction was detected for area measurements. At days 6, 8, and 10, follow-up testing revealed that the laser group had smaller wounds than the sham group for both the treated and the untreated wounds (P, .05). No group 3 wound 3 time differences were detected for chromatic red or luminance.

Conclusions: The LLLT resulted in enhanced healing as measured by wound contraction. The untreated wounds in subjects treated with LLLT contracted more than the wounds in the sham group, so LLLT may produce an indirect healing effect on surrounding tissues. These data indicate that LLLT is an effective modality to facilitate wound contraction of partial-thickness wounds.

Qlaser Wellness Solutions
Michael F. Lagana, President
708 Route 35 N., Neptune, NJ 07753
732 866-4226
Michael@Qlaserws.com