

Randomized Controlled Trial > Lasers Surg Med. 2009 Dec;41(10):799-809.

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## Low-level laser therapy as a non-invasive approach for body contouring: a randomized, controlled study

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### Abstract

**Background and objective:** Transmission electron microscopic images have demonstrated the formation of transitory pores in adipocyte cell membranes followed by the collapse of adipose cells subsequent to laser irradiation of 635 nm. The objective is to evaluate the application of a 635 nm and 17.5 mW exit power per multiple diode laser for the application of non-invasive body contouring of the waist, hips, and thighs.

**Study design/patients and methods:** Double-blind, randomized, placebo-controlled trial of a 2-week non-invasive laser treatment conducted from May 2007 to June 2008 across multiple-private practice sites in the United States of America. Sixty-seven volunteers between the ages of 18-65 with a body mass index (BMI) between 25 and 30 kg/m(2) and who satisfied the set inclusion criteria participated. Eight of the 67 subjects did not have circumference measurements recorded at the 2-week post-procedure measurement point. Participants were randomly assigned to receive low-level laser treatments or a matching sham treatment three times per week for 2 weeks. Reduction in the total combined inches of circumference measurements of the waist, hip and bilateral thighs from baseline to the completion of the 2-week procedure administration phase was assessed.

**Results:** Participants in the treatment group demonstrated an overall reduction in total circumference across all three sites of -3.51 in. (P < 0.001) compared with control subjects who revealed a -0.684 reduction (P < 0.071745). Test group participants demonstrated a reduction of -0.98 in. (P < 0.0001) across the waist, -1.05 in. (P < 0.01) across the hip, and -0.85 in. (P < 0.01) and -0.65 in. (P < 0.01) across the right and left thighs from baseline to 2 weeks (end of treatment). At 2 weeks post-procedure, test group subjects demonstrated a gain of 0.31 total inches collectively across all three sites.

**Conclusion:** These data suggest that low-level laser therapy can reduce overall circumference measurements of specifically treated regions.

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