

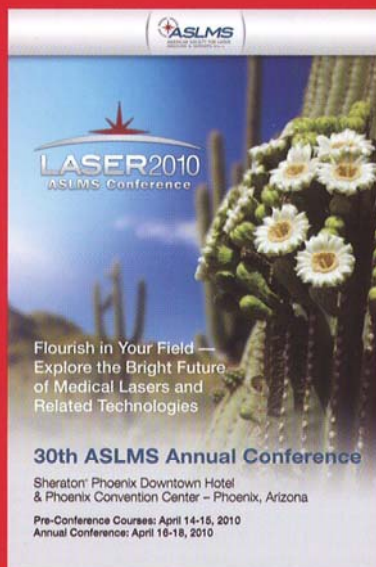
Lasers in Surgery and Medicine

The Official Journal of the



www.aslms.org

Abstracts Issue from the ASLMS Annual Conference
April 14–15, 2010
Phoenix Arizona



Supplement 22, 2010

 **WILEY-BLACKWELL**

ISSN 0196-8092

#191

THE APPLICATION OF LOW-LEVEL LASER THERAPY FOR THE REDUCTION OF ADIPOCYTE-DERIVED HORMONE LEPTIN: A NON-CONTROLLED, NON RANDOMIZED STUDY

Ryan Maloney, Steven Shanks, Jillian Maloney, Edward Zimmerman

Erchonia Medical, McKinney, TX; University of Arizona, Tucson, AZ; Private Practice, Las Vegas, NV

Background: Body weight is regulated by the endocrine and neural components controlling energy intake and expenditure. The complex nature of this regulatory process is responsible for preventing even the smallest of imbalances between energy intake and expenditure. Regulation is a complex interplay of hormonal and neural signals. A major regulator within the body is the adipocyte-derived hormone leptin which acts primarily in the hypothalamus to influence appetite, energy expenditure, and neuroendocrine function. The gene responsible for coding the hormone is *Ob(Lep)* gene. Numerous studies have identified that laser therapy can modulate gene expression; therefore, the objective of this non-controlled, non-randomized study was to evaluate the efficacy of laser therapy in the reduction of serum Leptin levels.

Study: Twenty-two volunteers between 18 to 65 years participated in a non-controlled, non-randomized study. Participants received low-level laser treatments (Zerona, manufactured by Erchonia Medical Inc.) 3 times per week for two weeks. Standard fasting leptin panels were performed pre-procedure and at the two week post-procedure endpoint. Patients were asked to maintain normal eating and exercise habits throughout the entire investigation.

Results: Compared with baseline, all participants (n = 22) demonstrated a numerical reduction in leptin levels at study endpoint. The mean reduction was 14.89 points, a 50% reduction. The mean baseline leptin measurement of 29.49 was reduced to 14.60, a statistically significant change of $p < 0.0001$. Long-term evaluation was not performed.

Conclusion: These data suggest that laser therapy may serve as a non-invasive modality for the reduction of Leptin levels in two weeks, potentially positioning LLLT as a safe means to temporarily suppress appetite. Further study is highly warranted.