Seminars in
Cutaneous
Medicine
and Surgery

Body Contouring Using 635-nm Low Level Laser Therapy

Mark S. Nestor, MD, PhD,[*,†] Jessica Newburger, DO,[†,‡] and Matthew B. Zarraga, DO[†]

Noninvasive body contouring has become one of the fastest-growing areas of esthetic medicine. Many patients appear to prefer nonsurgical less-invasive procedures owing to the benefits of fewer side effects and shorter recovery times. Increasingly, 635-nm low-level laser therapy (LLLT) has been used in the treatment of a variety of medical conditions and has been shown to improve wound healing, reduce edema, and relieve acute pain. Within the past decade, LLLT has also emerged as a new modality for noninvasive body contouring. Research has shown that LLLT is effective in reducing overall body circumference measurements of specifically treated regions, including the hips, waist, thighs, and upper arms, with recent studies demonstrating the long-term effectiveness of results. The treatment is painless, and there appears to be no adverse events associated with LLLT. The mechanism of action of LLLT in body contouring is believed to stem from photoactivation of cytochrome *c* oxidase within hypertrophic adipocytes, which, in turn, affects intracellular secondary cascades, resulting in the formation of transitory pores within the adipocytes' membrane. The secondary cascades involved may include, but are not limited to, activation of cytosolic lipase and nitric oxide. Newly formed pores release intracellular lipids, which are further metabolized. Future studies need to fully outline the cellular and systemic effects of LLLT as well as determine optimal treatment protocols.
Semin Cutan Med Surg 32:35-40 © 2013 Frontline Medical Communications

KEYWORDS low level laser therapy, noninvasive body contouring, fat reduction, circumference reduction

Striving for a youthful appearance has become so important in Western society that even small imperfections on the body are now scrutinized. Tissue laxity and generalized and localized subcutaneous fat deposits are increasingly common complaints among cosmetic patients. As a result, the number of procedures performed for body contouring has increased exponentially. Chronologic aging, photoaging, or substantial changes in body dimensions experienced during pregnancy or weight loss can all contribute to the formation of localized and generalized fat deposits as well as lax skin.[1,2] Additionally, over the past 10 years, the population as a whole has become increasingly overweight, and at the same time, have become more accepting of advances in esthetic technology, including nonsurgical management of fat and body contouring.[3]

From the advent of liposuction in the late 1970s and early 1980s, the practice of body contouring has seen the growth of more effective and less risky liposuction techniques, and has evolved in the direction of minimally invasive procedures. Noninvasive body contouring is one of the most appealing aspects of cosmetic surgery today owing to the demand for safer and less-invasive procedures that offer a quicker recovery, fewer side effects, and less discomfort. Helping drive noninvasive body contouring are new therapeutic modalities that offer patients a less-invasive alternative. Accordingly, cosmetic patients are becoming more reluctant to undergo surgical procedures that involve hospitalizations, anesthetics, pain, swelling, longer recovery periods, and, in general, the risks involved with surgery.[3]

*Department of Dermatology and Cutaneous Surgery, University of Miami Miller School of Medicine, Miami, FL.
†Center for Clinical and Cosmetic Research, Aventura, FL.
‡Center for Cosmetic Enhancement, Aventura, FL.
Disclosures: Dr. Nestor serves on the advisory board as well as being a speaker, consultant, and investigator for Medicis Pharmaceutical Corporation, and he is a consultant and investigator for Ulthera and Erchonia Corporation. Additionally, Dr. Nestor has been a speaker and served on an advisory board for Solta Medical, Inc; a speaker, consultant, and investigator for Human Med, AG; as well as a speaker for Zeltiq. Dr. Newburger and Dr. Zarraga have no conflicts of interest to declare.
Correspondence: Mark S. Nestor, MD, PhD, Center for Clinical and Cosmetic Research, 2925 Aventura Boulevard, Suite 205, Aventura, FL 33180. E-mail: nestormd@admcorp.com