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Research Article

New treatment of cellulite with infrared-LED illumination applied during high-intensity treadmill training

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Pages 166-171 | Received 03 May 2011, Accepted 14 May 2011, Published online: 08 Jul 2011

Download citation | <https://doi.org/10.3109/14764172.2011.594065>

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Abstract

Phototherapy improves cellular activation which is an important factor for the treatment of cellulite. The objective of this research was to develop and evaluate the effects of a new (noninvasive and nonpharmacological) clinical procedure to improve body aesthetics: infrared-LED (850 nm) plus treadmill training. Twenty women (25–55 years old) participated in this study. They were separated in two groups: the control group, which carried out only the treadmill training ($n = 10$), and the LED group, with phototherapy during the treadmill training ($n = 10$). The training was performed for 45 minutes twice a week over 3 months at intensities between 85% and 90% maximal heart rate (HR_{max}). The irradiation parameters were 39 mW/cm² and a fluence of 106 J/cm². The treatment was evaluated by interpreting body composition parameters, photographs and thermography. This was primarily a treatment for cellulite with a reduction of saddlebag and thigh circumference. At the same time, the treadmill training prevented an increase of body fat, as well as the loss of lean mass. Moreover, thermal images of the temperature modification of the thighs are presented. These positive effects can result in a further improvement of body aesthetics using infrared-LED together with treadmill training.

Q Key Words: body composition | cellulite | infrared-LED | thermography | treadmill training

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Acknowledgements

The authors acknowledge the Fundação de Amparo a Pesquisa do Estado de São Paulo (FAPESP) – Grant no. 98/14270-8, Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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