PHYSIOMED ELEKTROMEDIZIN AG

ADDRESS
Hutweide 10
91220 Schnaittach/Laipersdorf
Germany

PHONE +49 (0) 91 26 / 25 87 - 0
FAX +49 (0) 91 26 / 25 87 - 25
E-MAIL info@physiomed.de
WEB www.physiomed.de

# Literature

This article should be cited as follows:
KORKINA, L. ET AL. TREATMENT OF GYNOID LIPODYSTROPHY (CELLULITE) WITH DEEP OSCILLATION®: A PILOT CLINICAL STUDY, 29th. Annual Meeting of The Bioelectromagnetics Society, Kanazawa, Japan, 2 (2007).

Institution:
Istituto Dermopatico dell'Immacolata (IDI IRCCS), Roma, Italy

## Abstract

BACKGROUND AND RATIONALE
Gynoid lipodystrophy (cellulite) is a common condition in 85% of post-adolescent women for which treatment is frequently required. There are numerous treatments offered to female population concerned by unsightly appearance of the cellulite-affected thighs, buttocks, and hips. All treatment modalities attempt either to attenuate the aggravating factors (obesity, bad habits, and the lack of physical exercise), or to induce lipolysis, or to disrupt altered fibrous septae, or improve microcirculation, or diminish the local inflammation. The physical and mechanical methods including massage, pulsative suction, radiofrequency fields, infrared heat and laser light, and pharmacological agents applied topically or by intradermal injections are among the most popular although low efficient treatments of cellulite. A very high concern has been raised recently about the safety and efficacy of unreasonably expensive methods for the cellulite treatment.

MATERIAL AND METHODS
A pilot open randomized clinical trial was carried out in the Department of Dermatology, Cosmetology, and Skin Pathophysiology of the Dermatology Institute to prove both safety and clinical efficacy of the DEEP OSCILLATION® method (PHYSIOMED ELEKTROMEDIZIN AG, Germany). The physiotherapeutic method is based on the use of intermittent electrostatic fields of low intensity (U = 100-400V; I = 150μA) and extremely low frequency (F = 5-200Hz) which create deep oscillation in the underlying tissues (epidermis, derma, subcutaneous layer, and myofibrils). Thoroughly studied molecular and cellular mechanisms of DEEP OSCILLATION® method allowed us to develop several protocols focused on pathophysiological features of cellulite: (1st protocol) to improve microcirculation in the dermal and subcutaneous layers; (2nd protocol) to diminish inflammation and edema; (3d protocol) to disrupt or/and prevent the formation of fibrous septae; and (4th protocol) to diminish number of estrogen receptors on the skin cells. Thirty women (age = 39.0±9,6y; weight = 58,0±6,1 kg; BMI =1,63±0,07 ) with clinical features of cellulite of I-III grade (Grade I – 14; Grade II – 12; and Grade III – 4) were recruited after their informed consent and approval of the local Ethical Committee. They were treated with the DEEP OSCILLATION® anti-cellulite protocols twice a week for three months (the total duration of the treatment was 500-540 minutes). The clinical features were assessed by three independent

dermatologists using high resolution digital photographs. The instrumental assessment included repeated measurements of circumferences (upper third of thigh, lower third of thigh, and upper third of leg), cutometry (the measurement of skin elasticity), ultrasound determination of microcirculation and fibrous tissue presence.

RESULTS

The pilot study confirmed the absolute safety of the method (there were no any immediate or remote adverse effects or complaints from the participants), its high efficacy in 93% (n=28) of the women (the circumferences diminished from 59,0 to 57,1 cm, upper thigh, $p<0.0002$; from 51.4 to 49.8 cm, lower thigh, $p<0.0001$; from 40.7 to 38.5 cm, upper leg, $p<0.003$). The elasticity characteristics were improved in 48% (n=14) of the patients; the edema, lymphostasis, and fibrous heterogeneity of subcutaneous layer were improved remarkably in 80% (n=24) of the patients.

CONCLUSIONS

The general conclusions of the experts were that the DEEP OSCILLATION® method was efficient in more than 80% of the cases with moderate (grade I-II) cellulite.