

CELLULITE: *THE SCIENTIFIC* *GUARANTEE OF* endermologie®

Cellulite, originally called panniculosis in 1904 is an extremely common progressive condition in women, affecting approximately 80% to 98% of postpubertal women.

Visible alterations on the surface of the skin (dimpling) affect the hypodermis and dermis and combine complex mechanisms involving venolymphatic circulation (**stasis**), adipocyte (**hypertrophy**) and connective tissue (**fibrosis**).



Cellulite, characterised by an “**orange peel**” appearance of varying severity, is localized particularly in the gluteofemoral areas. Resistant to low-calorie diets and physical exercise, cellulite is likely to cause aesthetic and psychological impairment or even obsessive suffering for 30% of women.

The **circulatory, anti-oedematous and dermotropic** effects of endermologie® are well documented⁽¹⁻⁷⁾ and make it possible to explain the clinical results observed on cellulite. Multiple studies have reported **a loss of thigh perimetry**, and a reduction in the **skin fold**. These improvements are also correlated with the number of sessions performed (dose dependent effect). endermologie® also improves liposuction results by reducing post-surgery irregularities and residual cellulite^(8,9,10).

In 2004⁽¹¹⁾, a randomised, controlled study using several evaluation techniques, including 20MHz ultrasound, inely quantify the above-mentioned **morphological changes**, and patient satisfaction. The results, of course, report a significant decrease in the **circumference of the thighs** and the **skin fold** (1 cm and 0.8 cm on average, respectively) with a time-dependent effect. In addition, all the other parameters measured dimpled aspect of the skin, microcirculation - exhibit an improvement correlated with the number of sessions. The study highlights the benefit of different maintenance modalities (1 or 2 sessions per month) for a **lasting** effect.

THE ANTI-CELLULITE EFFECT was confirmed in a Turkish study⁽¹²⁾ involving 118 subjects. The most satisfied patients were those with the highest degree of cellulite (grade 2). 99% of the patients saw their body circumferences decrease by an average of 2.9 cm. These reductions were particularly significant in:

- **THE ABDOMEN (-3.7CM)**
- **THE ARMS (-1.8CM)**
- **THE HIPS (-4.2CM)**
- **THE WAIST (3.5CM)**
- **THE BUTTOCKS (-3.7CM)**
- **THE THIGHS (-2.7CM)**

THIGHS
-2.7 cm⁽¹²⁾

endermologie® also has an effect on adipocytes, making them more capable of releasing fat by acting on the beta receptors **that stimulate lipolysis by 70%**⁽¹³⁾. This was found in a study conducted at the Clinical Investigation Centre in Toulouse in collaboration with Prof. Max Lafontan. Adipocytes in the gluteofemoral area were observed by microdialysis. This technique makes it possible to measure lipolysis directly, particularly the functioning of beta receptors. This study also demonstrated the total safety of endermologie: The Action on adipose tissue fully protects the integrity of the cells.

Other studies have shown the effectiveness of endermologie® in the treatment of fibrosis⁽¹⁵⁻¹⁷⁾, which is one of the components of cellulite when the tissue is hard and painful.

Finally, in 2017, a study carried out by DermScan laboratories in Lyon demonstrated the slimming, redensifying and smoothing effect of the new Alliance treatment head⁽¹⁴⁾ using various objective evaluation techniques, such as BODYSCAN®, ultrasound with DermaScan C® and 3D PRIMOS® Pico system.

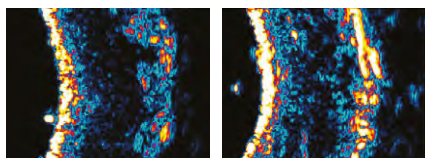
3-IN-1 EFFECT:

**SLIMMING
RESENSIFYING
AND SMOOTHING**



THE RESULTS OF THE STUDY SHOWED:

- A significant **slimming effect** with a decrease in thigh circumference after 12 sessions and a decrease in thigh volume after 3, 6 and 12 sessions.
- A significant **redensifying effect** with a decrease in the proportion of low density areas after 3 sessions.

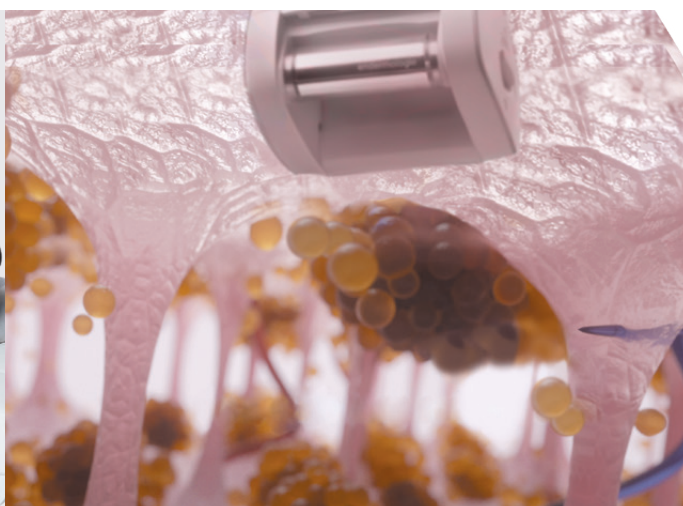


Before

After 3 sessions

Ultrasound of the skin after 3 sessions, showing a visible reduction in black areas, characterising a redensification.

- A significant **smoothing effect**, with a decrease in skin roughness after 12 sessions, a decrease in the maximum amplitude of the dimpling surface after 3, 6 and 12 sessions and a decrease of the dimpled aspect of the skin after 6 and 12 sessions.



Thus, thanks to its original tissue mechanisation process, endermologie® targets the three components of cellulite. Through its action on venolymphatic circulation, potential fibrosis and lipolysis, endermologie® has a real effective action on “cellulite”, a common complaint among women.

SOURCES:

1. Physiological effects of Endermologie®: A Preliminary Report. Watson J et al. *Aesthetic Surg J* 1999, 19 (1); 27-33.
2. Analysis of the effects of deep mechanical massage in the porcine model. Adcock D et al. *Plast. Reconstr. Surg.* 2001 Jul, 108 (1); 233-40.
3. Evidenza delle modificazioni cutanee indotte dalla Tecnica LPG® mediante analisi d'immagine. Innocenzi D et al. *DermaCosmetologia*- anno II- numero 1- gennaio-marzo 2003, p.9-15.
4. Alterazioni morfologiche della cute indotte con la Tecnica LPG®. Innocenzi D et al. *DERMOtime* Settembre-Ottobre 2002, anno XIV, n°7/8; p. 25-27.
5. Noninvasive Mechanical Body Contouring: Endermologie® A One-Year Clinical Outcome Study Update. Chang P et al. *Aesth. Plast. Surg.* 1998, 22; 145-53
6. A new instrumental method of cellulite treatment. Daver J. *Médecine au féminin* 1991, n°39, p.25-34.
7. LPG technique and oedema treatment. Big leg drainage. Leduc O. and Leduc A. *Lymphokinetics* Ed.2001, p.83-87.
8. A combined Program of Small-volume Liposuction, Endermologie® and Nutrition: A Logical Alternative. Dabb R.W. et al. *Aesthetic Surg J* 1999, 19 (5); 388-97.
9. Endermologie® versus Liposuction with External Ultrasound Assist. La Trenta G. et al. *Aesthetic Surg J* 1999, 19 (6); 452-58.
10. Endermologie® after External Ultrasound-assisted lipoplasty (EUAL) versus EUAL alone. La Trenta G. et al. *Aesthetic Surg J* 2001, 21 (2); 128-36.
11. Treatment of cellulite: Effectiveness and sustained effect at 6 months with Endermologie/Traitement de la cellulite : Efficacité et rémanence à 6 mois de l'Endermologie Ortonne J.P., Queille-Roussel C., Duteil L., Emiliozzi C., Zartarian M. *Nouv. Dermatol.* 2004; 23: 261-269.
12. An alternative treatment modality for cellulite: LPG endermologie. Kutlubay Z. et al. *J Cosmet Laser Ther.* 2013 Oct; 15(5): 266-70.
13. Impact of a mechanical massage on gene expression profile and lipid mobilization in female gluteofemoral adipose tissue. Marques MA et al. *Obes Facts* 2011; 4(2):121-9.
14. Alliance Study. *Dermscan Report* 2017.
15. Benefit of endermology on indurations and panniculitis/lipoatrophy during relapsing-remitting multiple sclerosis long-term treatment with glatiramer acetate. Marquez-Rebollo C. et al. *Adv Ther.* 2014 Aug; 31(8): 904-14.
16. Endermology: A treatment for injection-induced lipoatrophy in multiple sclerosis patients treated with subcutaneous glatiramer acetate. Lebrun C. et al. *Clin Neurol Neurosurg.* 2011 Nov; 113(9): 721-4.
17. Effectiveness of LPG treatment in morphea. Worret W.I. & Jessberger B. *J Eur Acad Dermatol Venereol.* 2004 Sep; 18(5): 527-30.
18. Insights Into the Pathophysiology of Cellulite: A Review. *Dermatol Surg.* 2020 Oct;46 Suppl 1(1):S77-S85.

