

Mattioli Develops New Approach to Cellulite Reduction

By Bob Kronemyer, Associate Editor

Among the various methods available to treat cellulite that can either be substituted or combined is Dermoelectroporation, a simple technique developed by Mattioli Engineering Italia SpA (Firenze, Italy) with its Ultrapeel Transderm device.

The technique of Dermoelectroporation is based on intuition that some American dermatologists had during the 1970s. "They found that a brief electrical impulse of adequate duration could cause an alteration in the polarization of the cell membrane," said Maurizio Cavallini, M.D., a plastic surgeon from Milan, Italy. "This process managed to open 'special accesses' to the passing of different molecules through the cell wall."

Ultrapeel Transderm favors the transdermal absorption of many molecules, "thanks to electrical impulses given at controlled intensity," Dr. Cavallini explained. "Such impulses don't damage the cell membrane, while at the same time they allow the opening of 'hydroelectropores' (electrical passages through which biologically active substances can pass)." This phenomenon has been verified by recent clinical studies confirming the passing of both micromolecules

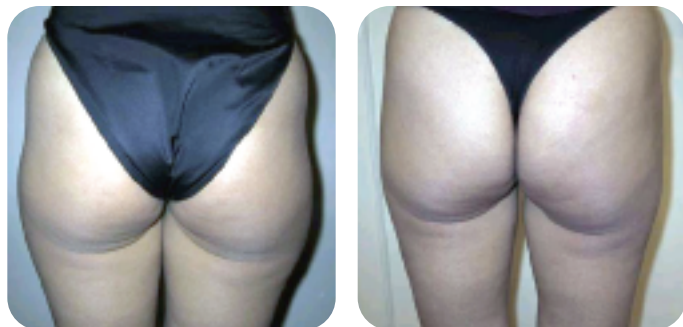


Maurizio Cavallini, M.D.

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and macromolecules like lidocaine, collagen, the precursors of collagen and elastin, and ribonucleic-polides for different areas and clinical applications.

"I tried to take maximum advantage of a substance already known in the field of cellulite treatments: L-carnitine," Dr. Cavallini said. "This substance was identified in 1905 as a natural component of cells, where it plays an important role in the utilization of the lipidic substratum." Carnitine is synthesized by amino acids such as lysine and methionine.



Before Tx

After Tx

"To understand the role of L-carnitine in the treatments against cellulite, it is important to remember that this substance is the only means whereby fat acids can pass through the mitochondrial membrane with beta-oxidation as their final target," Dr. Cavallini said. "L-carnitine is the only way that the process of lipolysis transforms the triglyceride in glycerol and fat acids, which must move from the cytoplasm to the mitochondria, in order to be destroyed."

Dr. Cavallini has adopted a usage of L-carnitine via Dermoelectroporation. He often combines treatment with mesotherapy (lipolytic drugs). "Mesotherapy is a widely used procedure to treat cellulite. It consists of an intradermal penetration of medications capable of melting fat away through microinjections."

In 12 women, Dr. Cavallini applied two to four grams of L-carnitine through a programmable dispenser. Dermoelectroporation was administered on the trochanteric areas and on the internal part of the thighs.

"At the beginning, the application of L-carnitine was immediately followed by mesotherapy with teofiline," Dr. Cavallini said. "But now, a high dose of L-carnitine has been necessary to favor the demolition of fat acids. This is why I currently apply Dermoelectroporation with carnitine before mesotherapy. After 12 applications, the results have been satisfactory, with reductions both in the volume and in the aesthetic appearance of the treated areas."

Dr. Cavallini stressed that cellulite must be considered a complex metabolic disorder affecting the fat tissue. "When cellulite is combined with other complications, the situation can become gradually worse." ■