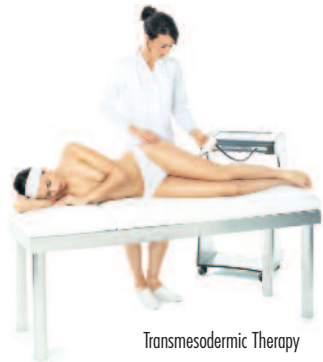


# Novel Transmesodermic Therapy System Provides Highly Effective Anti-Aging Program

By Birgit Hansen, Contributing Editor



Transmesodermic Therapy

"This is a highly effective method of improving the penetration of pharmacological substances into the deeper layers of the skin."

Jean Luc Levy, M.D., of Centre Laser Dermatologique in Marseille, France has been engaged in a clinical multi-center study on the novel approach of electrophoresis assisted anti-aging treatment. The most recent results of the Transmesodermic Therapy (TMT®) system (TMT Systems, Barcelona, Spain) were presented to attending specialists and physicians at the annual *European Academy of Dermatovenereologists* (EADV) meeting in Vienna, Austria.

According to Dr. Levy, TMT's mechanism of action permits a better and deeper penetration of the skin, using topical application of pharmacological substances. "This is essential if we are to effectively overcome the skin barrier function." One approach to this is electrically assisted. The system applies two different electrical stimuli to the skin which in turn evokes two biological approaches: electroporation and iontophoresis (electro-osmosis). "Electroporation evokes a fully reversible appearance of aqueous pathways into the lipid matrix of the stratum corneum. Iontophoresis, on the other hand, increases the transdermal passage of ionic and non-ionic substances, basically through the skin annex," he explained. The electrical impact on the cells modifies their membranes and intercellular spaces, therefore the ultramicropores at the molecular level increases the permeability of the stratum corneum for ionized and non-ionized substances.



Jean Luc Levy, M.D.  
Centre Laser Dermatologique  
Marseille, France

Mesogel and Mesolift are two substances used with the TMT system – each of which possess four active ingredients known to be effective in the treatment of skin aging. Mesogel contains acetylhexapeptide-3, a biosynthetic polypeptide that is found to reduce deep wrinkles, increase skin softness and extinguish fine lines. The tensor, or surfactant, is a water soluble

hydrolyzed wheat gluten which has a tightening and moisturizing effect on the skin. The ascorbic acid has a high antioxidant capacity and hyaluronic acid acts as a healing, firming and regenerative agent with excellent moisturizing properties. Mesolift contains organic silicon which induces metabolic regulation and cellular division, and L-carnitine which acts as a catalyst, oxidizing fatty acids and preventing them from forming triglycerides. Further ingredients are glucosamine for maintenance of the dermal structure and thioctic or alpha-lipoic acid for strong antioxidant action.

Penetration of Mesogel and Mesolift is achieved via a roll-on electrode. The design of this electrode is vital for effective drug access and exhibits a very good voltage tolerance without the risk of skin burning. "In our study, we investigated the permeation of molecular sodium ascorbylphosphate (SAP) – an anti-stretch, anti-aging and anti-flaccidity product – and the quantity of SAP present in the skin following active TMT treatment compared to a control test using passive exposure to the same substance." The procedure involved 20 minutes of TMT treatment using a free program at negative polarity (level five using 30% of maximum power) and a control test with 20 minutes under passive conditions.

"Using fluorescent laser scanning confocal microscopy (LSCM), we deduced that 20 minutes of TMT treatment resulted in a seven fold increase of the amount of sodium ascorbylphosphate accumulating in the skin," Dr. Levy noted. LSCM studies with calcein (also known as fluorexon) demonstrated that treatment with the TMT system increased skin permeability, evident by the presence of fluorescence at deeper skin levels. "This is a highly effective method of improving the penetration of pharmacological substances into the deeper layers of the skin," Dr. Levy summarized.