

# Study Finds Dermoelectroporation As Effective as Injection Tx

By Bob Kronemyer, Associate Editor



Before Tx

After Tx

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Fibroblasts are very important, key cells when dealing with skin issues. An increased slow down of collagen and elastic fiber secretion from fibroblasts takes place during the course of skin aging on the face, décolleté and neck. Furthermore, the presence and contraction of very small muscular fibers at the cutaneous level cause a progressive superficial skin roughness. “To eliminate these issues I have developed a treatment protocol including 2 ml to 3 ml of Polydesoxyribonucleotidis (PDRN) mixed with 15 to 20 units of botulinum toxin Type A,” explained Maurizio Cavallini, M.D., a plastic surgeon in Milan, Italy.



Maurizio Cavallini, M.D.  
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Previously, Dr. Cavallini would perform micro injections over the entire face, décolleté and neck areas, but then he discovered transdermal delivery through dermoelectroporation with the Ultrapeel Transderm Meso System from Mattioli Engineering (Firenze, Italy) a couple of years ago. This system, providing non-invasive, transdermal delivery of botulinum toxin Type A and other types of formulas, eliminates unwanted side effects or trauma such as erythema or small ecchymosis.

Dermoelectroporation is a transdermal delivery method approved by the U.S. Food and Drug Administration (FDA) which can be used as an alternative to injections for delivery of drugs into the body at hypodermal and dermal levels without injury or damage to the epidermis. To lower the cutaneous impedance and promote the transdermal delivery of any active ingredients this delivery method incorporates preventive microdermabrasion to the surface of the area to be treated.

“I have completed a study (to be published) which enabled me to better evaluate clinical and instrumental efficacy of dermoelectroporation delivery,” noted Dr. Cavallini. The following treatments were conducted to evaluate objective criteria of the cutaneous status, i.e. pH, corneometry, elasticity and sebhometry pre- and post treatment. Each patient underwent four sessions of injection therapy, spaced three weeks apart, on one side of the face, neck and décolleté, and dermoelectroporation treatments on the other side. A cocktail of PDRN mixed with botulinum toxin Type A was used. The Transdermal Meso System delivered a mid to low pulse rate with high vibration selected to hide any electrical pulse perception from the patient. Small circular movements were used to achieve a homogeneous transdermal delivery of the formula.

Results have not proven a significant change in pH, but improvement in the skin's elasticity and hydration from both methods established an efficacy ratio of 75:100 between dermoelectroporation and injections. According to Dr. Cavallini, “dermoelectroporation does require more time for treatments but these study results validate that it is more comfortable for patients due to its non-invasive, less painful delivery method which alleviates redness or any other signs that a treatment has been performed. Dermoelectroporation also requires less experience than injections therefore it can be delegated to ancillary staff.”



Before Tx

After Tx