

FC12-02:

**The Use of a *Jet-Phoresis*
Transderm Delivery System for
Delivery of Actives**

FC12 Cosmetic Dermatology II
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Michael H. Gold, M.D.

Gold Skin Care Center, Tennessee Clinical Research Center
Clinical Assistant Professor, Vanderbilt University

Department of Dermatology
School of Medicine, School of Nursing
Nashville, TN USA

Conflict of Interest

- Dr. Gold is a Visiting Professor of Dermatology, Huashan Hospital, Fudan University (Shanghai Medical University), Shanghai, China (12/06), and The First Hospital of China Medical University, Shenyang, China (11/08)
- Dr. Gold is a consultant, speaker and has performed research for TavTech
- Dr. Gold is also a consultant, performs research and speaks on behalf of numerous pharmaceutical and medical device companies

Barophoresis in Skin Rejuvenation

What Patients Want in 2011 When it Comes to Treating the Skin & Making One Look Better

- Improvement in their skin
- Subtle not dramatic changes
- Gradual improvement
- Minimal downtime
- No pain
- No risks

Jet Peel's key features

1. The painlessness of its mechanical peeling procedures
2. Its ability to perfuse sanative supplements transcutaneous without needles
3. The performance controlled deep 3 dimension painless peeling, by using mild acids
4. The treatments of local lesions – aging and sun damage spots, pigmentations, wrinkles
5. Assistance in new scars development and old scars diminution
6. Acne and post acne scars treatment
7. Enhancing lasers, lights and RF technologies
8. Absence of hyperemia and skin shedding, viral and septic complications

Jet Peel's new features

1. The use of the Jet Peel for drug delivery
 - A. That implies many different agents can be infused with the device
 - B. Topical anti-aging products
 - C. Perhaps toxins and other medicines
 - D. Lidocaine for pain control without needles

The JetPeel

Multi-Function Skin Rejuvenation System

- Lymphatic drainage
- 3DVC - Multi-dimensional exfoliation
- Deep cleansing
- Oxygen and CO2 therapy
- Transcutaneous supplementation



What is JetPeel?

An innovative, personalized, treatment program,
based on advanced technologies

- Simultaneously introduces active nutrients, oxygen, and physiological stream into the skin, using pressure and air

JetPeel - Basic principles

- Pressurized gas is used to accelerate a liquid agent (saline).
- Water droplets accelerated to supersonic velocities (200 m/s)
- The mixture of liquid and gas is emitted through a special nozzle unit.
- The high velocity jet exfoliates the superficial layers of the skin
- * Patented

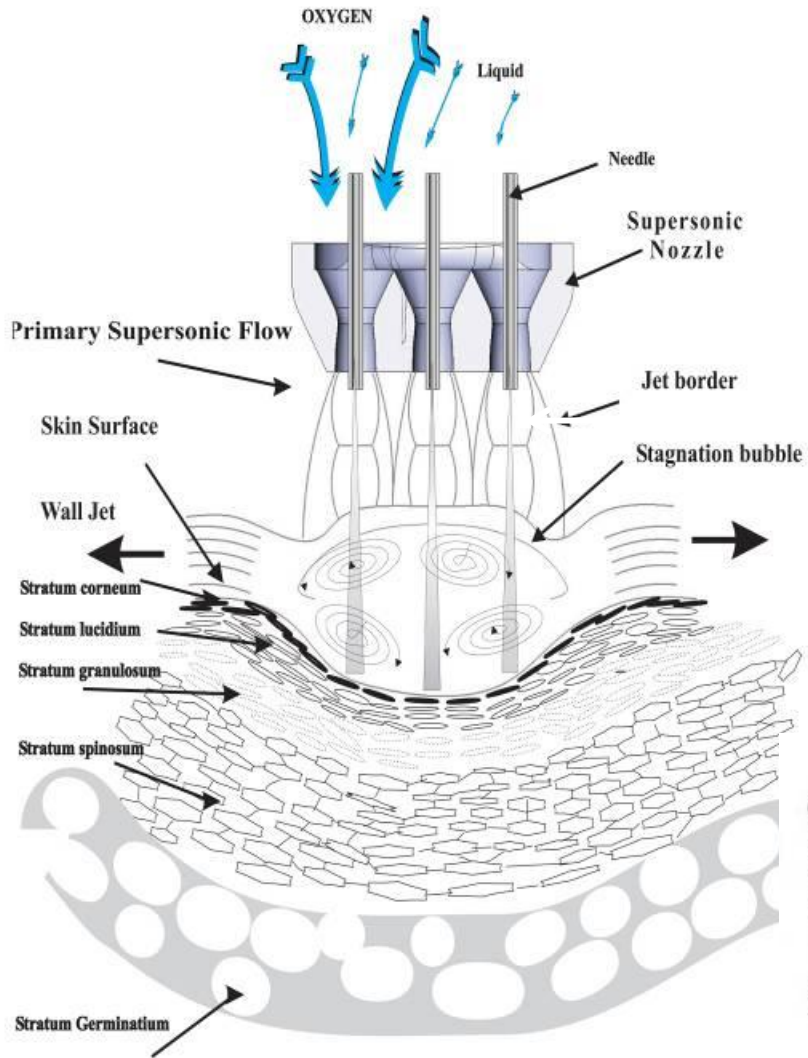
Supersonic Jet Technology

- Supersonic two-phase jet directed onto the skin with specialized handpieces and nozzles.
- Jet Spray consists of micro droplets of saline or supplements and gas (air, oxygen or CO₂).
- High velocity spray induces skin rejuvenation through exfoliation and supplementation.

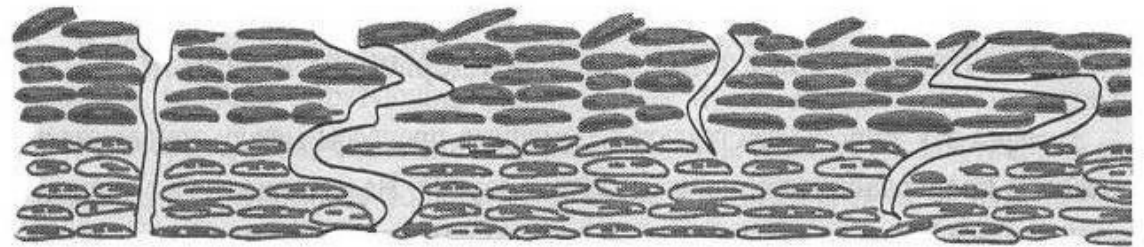
JetPeel - Basic principles – Video



JetPeel - Basic principles



Supersonic jet flow
Opens intercellular channels



Skin Rejuvenation

Goal:

- Restore youthful function and appearance

How:

- Reduce cellular buildup
- Exercise and strengthen capillary respiration
- Remove metabolic waste from tissues
- Hydrate, oxygenate tissues
- Provide nutritional support and protection
- Energize cell renewal and wound healing process

Where Innovation, Science and Results Meet



The nutritional elements that are used include:

- Hyaluronic acid, which enriches the natural connective tissue
- Vitamin C, which improves the cell's ability to even out pigment

Vitamins E, B, and A, which are important ingredients for the proper functioning of cells



Barophoresis in Skin Rejuvenation - JetPeel

Before



After 3 treatments
(2 weeks after
last session)



Barophoresis in Skin Rejuvenation

Before



After three treatments



Barophoresis in Skin Rejuvenation - JetPeel



65 year old woman : Crow's feet
Before and after one treatment

Study Design – Pain Control Using Barophoresis

- Prospective clinical study to compare lidocaine jet-phoresis trans-cutaneous anesthesia to EMLA 5% topical cream
- 20 patients that were scheduled to undergo needling roller for upper lip rhytids enrolled into study
- Each patient served as own control – so 40 lips evaluated

Results

- Statistically significant advantage of pain control in the lidocaine jet-phoresis group compared to EMLA group ($p < 0.005$)
- Jet-phoresis lidocaine pain control was better or comparable to EMLA in $> 82\%$ of lips
- Further confirmed reversing the sides of the tested lips in the same subjects

Conclusions

- Study supports observation for the jet-phoresis system allowing penetration of the cutaneous barrier and delivering actives into the skin
- Lidocaine in this study worked better with jet-phoresis than topical lidocaine in this small prospective study
- Further, larger clinical trials needed to determine optimal strengths of lidocaine which can be used and for other actives to be delivered into the skin

Jet-Phoresis

Lasers Surg Med 2010; 22:97



#754

THE USE OF A JET-PHORESIS TRANSDERMAL DELIVERY SYSTEM FOR PAIN CONTROL

Michael Gold, Ram Burvin

Gold Skin Care Center, Tennessee Clinical Research Center, Nashville, TN, Craniofacial Plastic Surgery, Jerusalem, Israel

Background: Conventional cutaneous numbing using topical xylocaine formulations is an extremely popular practice prior to medical or cosmetic procedures obviating the use of sub-dermal needle injections.

Study: This prospective study was undertaken to compare prospectively lidocaine jet-phoresis trans-cutaneous anesthesia to

THE USE OF A JET-PHORESIS TRANSDERMAL DELIVERY SYSTEM FOR PAIN CONTROL

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maximal anesthetic effect. The contra-lateral portion of the lip was treated with lidocaine 3% jet-phoresis for 5 minutes. Pain in the upper lip was elicited with needling roller uniformly applied to the whole of the upper lip. Pain response was measured using standardized pain ruler.

Conclusion: There was statistically significant advantage of pain control in the lidocaine jet-phoresis group compared to the EMLA group ($p < 0.005$). Jet-phoresis lidocaine pain control was better or comparable to EMLA cream, in more than 82% of lips (In 14 lips better, in 19 lips comparable, and in 7 lips less). This was further confirmed reversing the sides of the tested lips in the same subjects. We noticed marked improvement in anesthetic effect using higher 3% lidocaine concentration. This study confirmed that: 1) Jet-phoresis facilitates cutaneous pre-operative anesthesia in a very short 5 min. application, in contrast to common practiced non-invasive time consuming methods, and 2) Jet-phoresis concept is painless, soothing experience, and easily applicable in an out-patient office setting.

Jet Peel – The Future

1. Jet Peel – Lidocaine infusion ✓
2. Jet Peel – Botulinum Toxin for hyperhidrosis

TavTech Research Project – 2010
Tennessee Clinical Research Center, Nashville, TN

- The Safety and Efficacy Evaluation of the JetPeel Device in Transdermal Delivery of Glycolic Acid as a Skin Conditioning Agent
 - IRB Study
 - One treatment; 16 patients enrolled
 - Follow-up evaluations at 7 days and 4 weeks
 - Physician and patient assessments
 - Results strong for safety and efficacy

TavTech Research Project – 2010
Tennessee Clinical Research Center, Nashville, TN

- Results:
 - Skin Radiance: 87.5% improvement in 1 week; 93.8% improvement at 4 weeks
 - Skin Smoothness: 100% improvement at 1 week
 - Pore Appearance: 81.3% improvement at 1 week
 - Evenness: 81.3% improvement at 1 week
 - Overall Appearance: 87.5% improvement at 1 week; 100% improvement at 4 weeks

TavTech Research Project – 2010
05 RCW – One month post treatment



Photos courtesy of Michael H. Gold, M.D.
Tennessee Clinical Research Center, Nashville, TN

TavTech Research Project – 2010
05 RCW – One month post treatment



Photos courtesy of Michael H. Gold, M.D.
Tennessee Clinical Research Center, Nashville, TN

TavTech Research Project – 2010
05 RCW – One month post treatment



Photos courtesy of Michael H. Gold, M.D.
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Thank you

Michael H. Gold, M.D.

Gold Skin Care Center, Tennessee Clinical Research Center

Clinical Assistant Professor, Vanderbilt University

Department of Dermatology

School of Medicine, School of Nursing

Nashville, TN USA

goldskin@goldskincare.com

www.goldskincare.com

