Light and Heat Energy for Skin Care

Skin Rejuvenation Application
Skin Rejuvenation: a non-ablative procedure that results in cosmetic and clinical changes of the skin, making it look younger, healthier.

- Pigment lesions
- Skin texture and fine lines
- Vascular lesions
Skin Physiology

- The skin is the largest organ of our body (up to 16% of our total weight).
- The skin structure has 3 layers, each with its own functions and purposes; Epidermis (outer layer), Dermis and Hypodermis.
Factors That Influence The Aging Process

External: sun, chemicals, pollution, etc.

General skin problems: such as poor blood circulation

Medication: taken over the years can effect the skin

Environmental: changes expose the skin to new allergens

Mental: stress can damage the skin
Skin Texture and Fine Lines

- Due to the dermis ability to stretch and shrink it serves as a flexible base that supports the epidermis layer of the skin.
- Aging causes collagen to decrease and become less elastic, leading to uneven support of the epidermis, resulting in wrinkles.
- The rejuvenation process occurs as a result of new collagen fibers replacing the old ones following exposure to micro thermal trauma.
Improving Skin Texture and Fine Lines

- Using the LHE technology, we selectively apply short pulses of Light and Heat Energy into the dermal-epidermal joining area, triggering a wound-healing process caused by a controlled injury.

- During the recovery process, new collagen is being produced, leading to structural changes that better support the epidermis and make the skin look younger and healthier.

Micro-trauma
Skin Rejuvenation

Histology

- Biopsy of a skin type IV, 60 year old female with moderate photo aging:
  - Increase in collagen fiber density
  - Realignment and organization

(original magnification x400)

*Courtesy of Dr. Helena Regina de Brito Lima, MD, Belo Horizonte, Brazil.
Published at: M.A. Adatto, Helena R.B.Lima, Photo rejuvenation with a new light / heat based energy device: A preliminary study, Cosmetic Dermatology 18, 1 (53-63) January 2005
Treatment Protocol – Skin Texture and Fine Lines (1)

• A full treatment course generally consists of 5 - 6 sessions spaced 2 – 3 weeks apart.
• The appropriate energy level for treatment is one that causes only mild redness and disappears quickly after the pulse.
• Maintenance treatments should be performed as needed.
Skin Texture and Fine Lines (2)

- Perform **two passes** in a crisscross manner over the entire face. Wait a minimum of 3 to 5 minutes between the passes to prevent over heating the skin.

- During the **second pass** the LUA orientation should be rotated 45-90 degrees.

- When treating fine lines, wrinkles, and skin texture treat the entire face.
Seeing is Believing
(2 months after 6 treatments)
Veins contain valves that grow weak or fail over time, enabling blood to flow in the wrong direction. This additional pressure of blood causes the veins to stretch, bulge and become visible.

The rejuvenation process is completed once the vascular lesion’s oxy-hemoglobin chromophore has been selectively coagulated without damaging the surrounding tissue.

Once coagulated, the vascular lesions are eliminated by a natural process induced by the body.
Skin Rejuvenation: Vascular Lesions (1)

- Tiny superficial vascular lesions up to 0.5mm deep appearing on the face only can be treated - NOT on other areas of the body.

Results are very individual and often depend on the depth and size of the lesion.

- Energy level should be set according to test results.

- A full treatment course generally consists of 4 - 8 sessions performed one to two times per week.
Skin Rejuvenation: Vascular Lesions (2)

- If the lesion becomes more apparent, the energy level is appropriate for treatment. Some redness may also be observed in the surrounding skin, this is normal.

- Evaluate the treatment's progress after 2 treatments (not including the testing session). If the lesion or branches of it start to fade, continue treatment as before. If not, raise the energy level to the maximum the skin will tolerate without adverse side effects.

- If significant improvement is not observed within 4 treatments, consider early termination of treatment.
Vascular Lesions

Telangiectasia before and after 2 LHE treatments

Courtesy of Dr. Alex Levenberg, MD, Tel Aviv, Israel
Vascular Lesions

Before and After 4 Treatments

 Courtesy of Dr. Alex Levenberg, MD, Tel Aviv, Israel
Skin Rejuvenation: Pigmented Spots (1)

- Concentration of **Melanocytes** in the dermis-epidermis junction is due to sun exposure that leads to pigmentation stains

- **LHE treatment** targets the melanin in these spots - the combined LHE effect increases the temperature of the *spot* to the point of **coagulation**

- Once coagulated, the body’s natural healing process removes the lesion, which then **crusts** over and **exfoliates** within a few days
A full treatment course generally consists of **2-4 sessions spaced 1-3 weeks**.

Do **not perform another treatment** until the **skin** has **completely healed**.

For proper treatment, redness or **change** in **pigmentation color** should appear on the **spot**, but not the surrounding skin.

Up to **Two (2) to four (4) crisscrossed pulses** may be administered on the same spot in each treatment session, based on the practitioner’s best judgment. Wait a minimum of **1 – 2 minutes** between each pulse.
Sun / Age Spots

Skin Type 2-3
Sun Spot on the chest
Energy level: 60
2 pulses
Seeing is Believing (1 LHE Treatment)
Skin Rejuvenation - Pigmented Lesions

- Patient M.R, Age: 48
- Skin type: II
- Procedure: photo facial using SkinStation
- Protocol: 4 sessions, one month interval, 2 passes with SR LUA
- Energy level: 63-75
- UV photos taken by: Visia complexion analysis system

*Radiancy clinical data collection
Skin Rejuvenation - Pigmented Lesions

* Courtesy of Dr. Alex Levenberg, MD, Tel Aviv, Israel

* Courtesy of Dr. Steven Shapiro, MD, Miami, FL
Skin Rejuvenation - Pigmented Lesions

Patient V.M, Age: 52 Skin type: III

1. Before

2. 5 days after treatment

3. 3 weeks after treatment

*Courtesy of Dr. Morel J.L., M.D., France – published at the AFME Journal (the journal of the French Association for Esthetic Medicine) in November 2004 issue.*