



Micro Needling Skin Rejuvenation is a revolutionary skin rejuvenation treatment that creates healthier, younger looking skin. As a form of collagen induction therapy, needling is regarded by many to be as effective as fractional laser resurfacing.



Fractional Collagen Induction Therapy

Fractional Collagen Induction Therapy (FCIT), or also referred to as microneedling, is the procedure by which the body's natural response to healing is used to increase the amount of extracellular matrix (such as collagen or elastin) in the skin.

The Rejuvapen creates a fractionated series of thousands of microchannels, which allow for leakage of blood, serum and lymph in a controlled and temporary manner. These "injuries" are enough to initiate the "wound healing cascade" which is composed of three basic phases.



The Science

Micro-needling uses surgical-grade stainless steel needles to create thousands of micro-channels in the treated skin. This fractionated approach allows for two key benefits.

Temporary (3 to 5 minutes) micro-channels allow for superior penetration and diffusion of topicals during and post-procedure, allowing for optimal delivery.

Fractionated injuries to the dermal tissues without ablation or introduction of thermal energy allows for quick, safe, and effective percutaneous collagen induction therapy, even in patients with darker skin types.

These benefits allow for the treatments of many skin conditions which may require either collagen remodeling (i.e., photo-aging, acne scarring, stretch-marks), optimization of topical drug delivery (i.e., acne, melanoma) or both.

1998: Dr. Des Fernandes of South Africa presented his findings on needling at a conference in San Francisco Introduced needling device, a small needle stamp, to induce collagen and used as a regular treatment in his surgical practice. (Fernandes D., Minimally invasive percutaneous collagen induction. Oral Maxillofac Surg Clin North Am. 2006;17:51–63)



2000: Horst Liebl, inventor of the original German Dermaroller, designed the very first microneedling medical device. Consisted of many fine needles on a drum-shaped roller device, with the ability to treat larger areas of the skin easily and quickly.

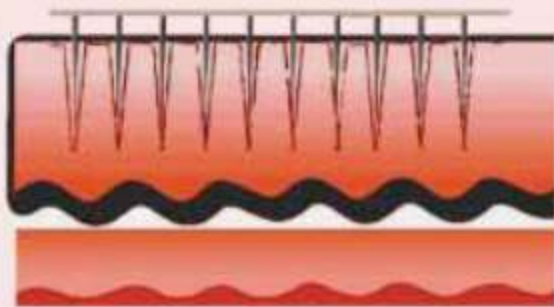


2004: Clinical Resolution Laboratory, a California company, redesigned the device, called MTS Roller



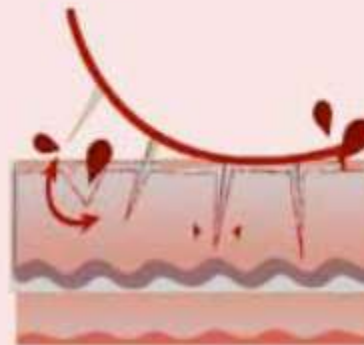
Pen versus Roller

Vertical Insertion Method

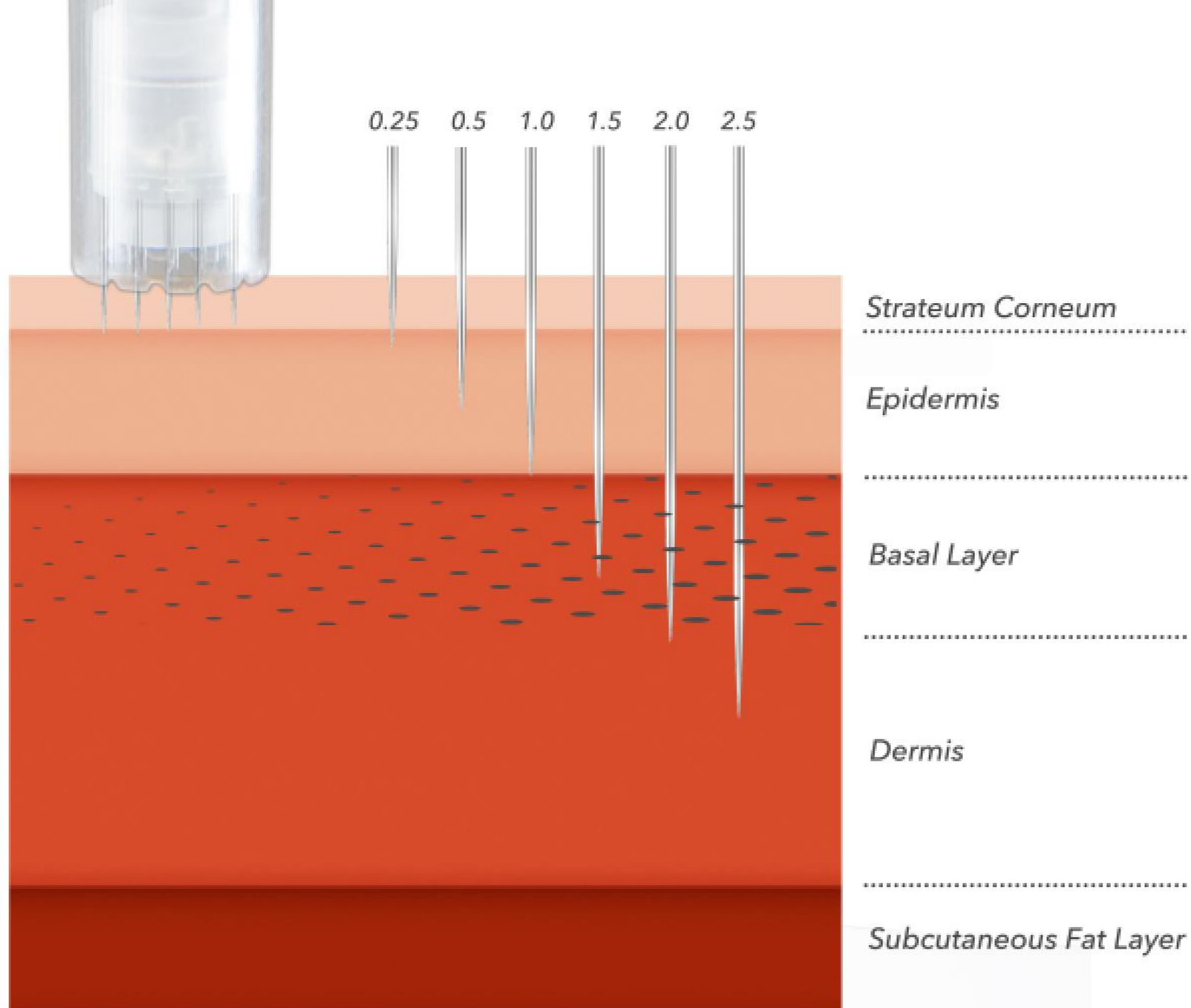


- Minimized epidermal damage means less pain and bleeding
- Easy to manoeuvre around all facial contours
- Because of vertical delivery, needles easily penetrate scar tissue without risk of bending.

Sloped-curved insertion method
(Current roller product)



- Painful with a lot of bleeding due to epidermal damage
- Difficult to operate in small or curved areas
- Difficult to insert needles into scar tissue - needles can be bent.



Phase One: Inflammation

PHASE 1



In this stage the platelets that are activated by the piercing of the dermal tissue release cytokines and growth factors which act as signals for the body's immune system to send in cells such as neutrophils and macrophages to disinfect the wounds, clear the debris, increase the blood supply (in a process called angiogenesis) and begin the creation of fresh, new cellular and extracellular materials (the granulation process).

Phase Two: Proliferation



In this stage, the fibroblasts (cells that make up much of the dermis and create the extracellular matrix) keratinocytes and epidermal cells continue to divide to populate the areas of damage and secrete growth factors and extracellular matrix, such as elastin and collagen III..

Phase Three: Remodeling



In this stage, the wound has now been replaced with new dermal tissues and the newly formed vasculature is now matured. The collagen III in the newly formed tissue is now replaced with the stronger collagen I and the tissue contracts to cause a "shrink-wrap" effect of the skin.



Dermis

The dermis also varies in thickness depending on the location of the skin. It is .3 mm on the eyelid and 3.0 mm on the back. The dermis is composed of three types of tissue that are present throughout - not in layers. The types of tissue are:

Collagen

Elastic Tissue

Reticular Fibers

Layers of the Dermis

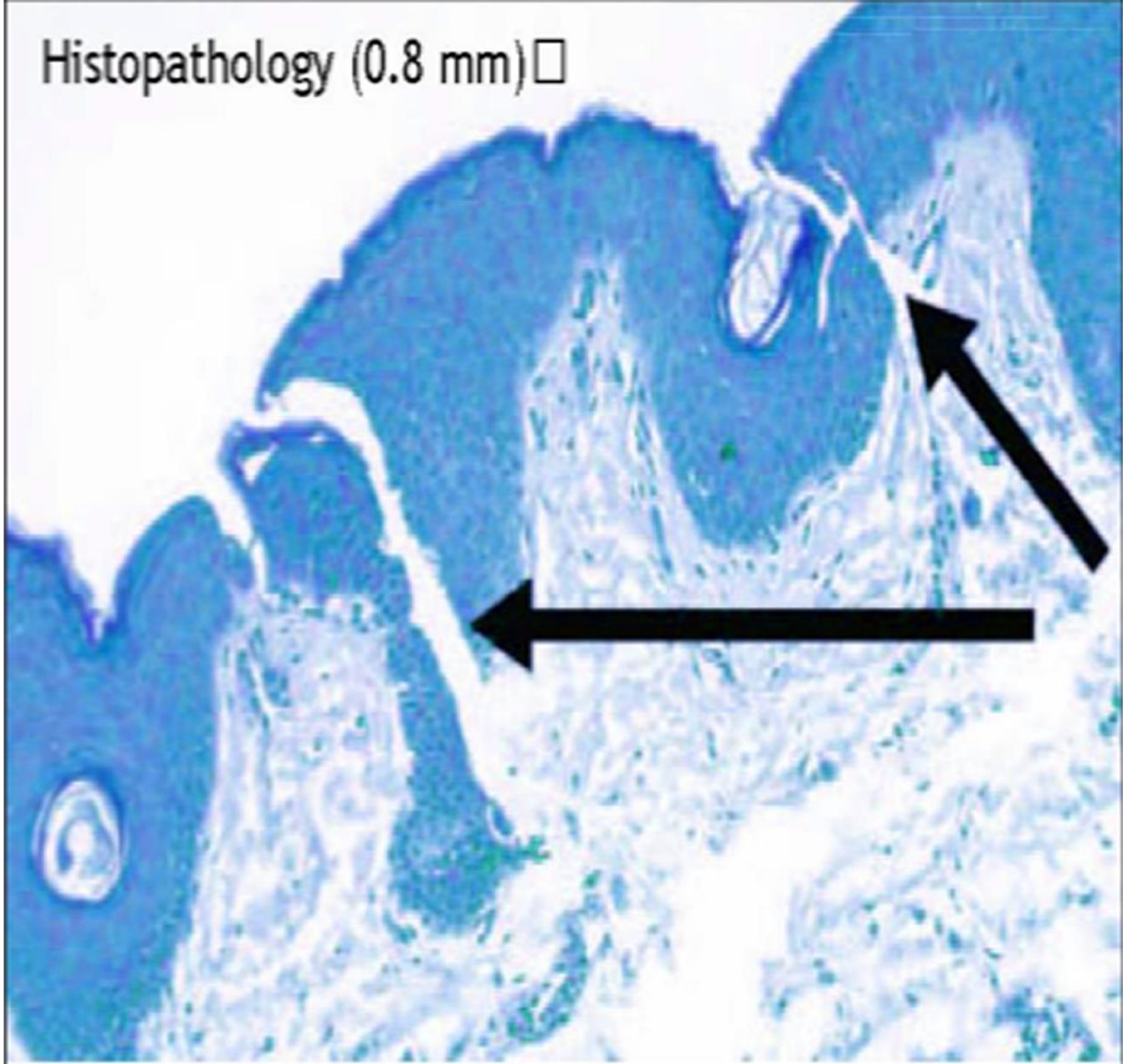
The two layers of the dermis are the papillary and reticular layers.

The upper, papillary layer, contains a thin arrangement of collagen fibers. The lower, reticular layer, is thicker and made of thick collagen fibers that are arranged parallel to the surface of the skin.

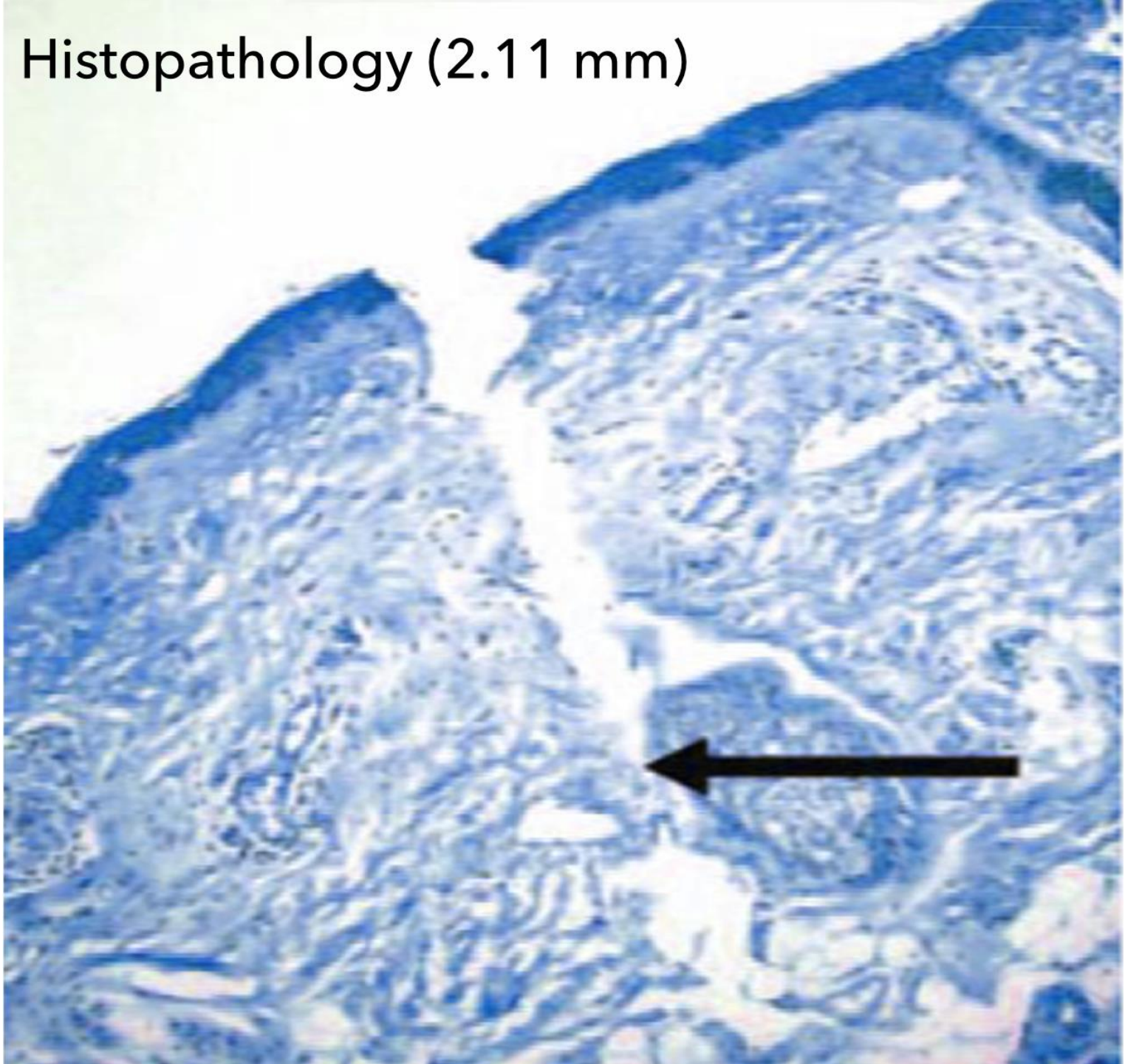
Physiology

The normal healing response begins the moment of tissue injury. Blood components spill into the injury site, causing platelets to come into contact with extracellular matrix. This contact triggers platelets to release clotting factors, essential growth factors and cytokines, such as platelet derived growth factor (PDGF) and transforming growth factor beta (TGF beta). Once bleeding has ceased, neutrophils enter the injury site and begin phagocytosis to remove foreign material, bacteria and damaged tissue. Macrophages also enter the injury site and continue phagocytosis and release more PDGF and TGF beta.

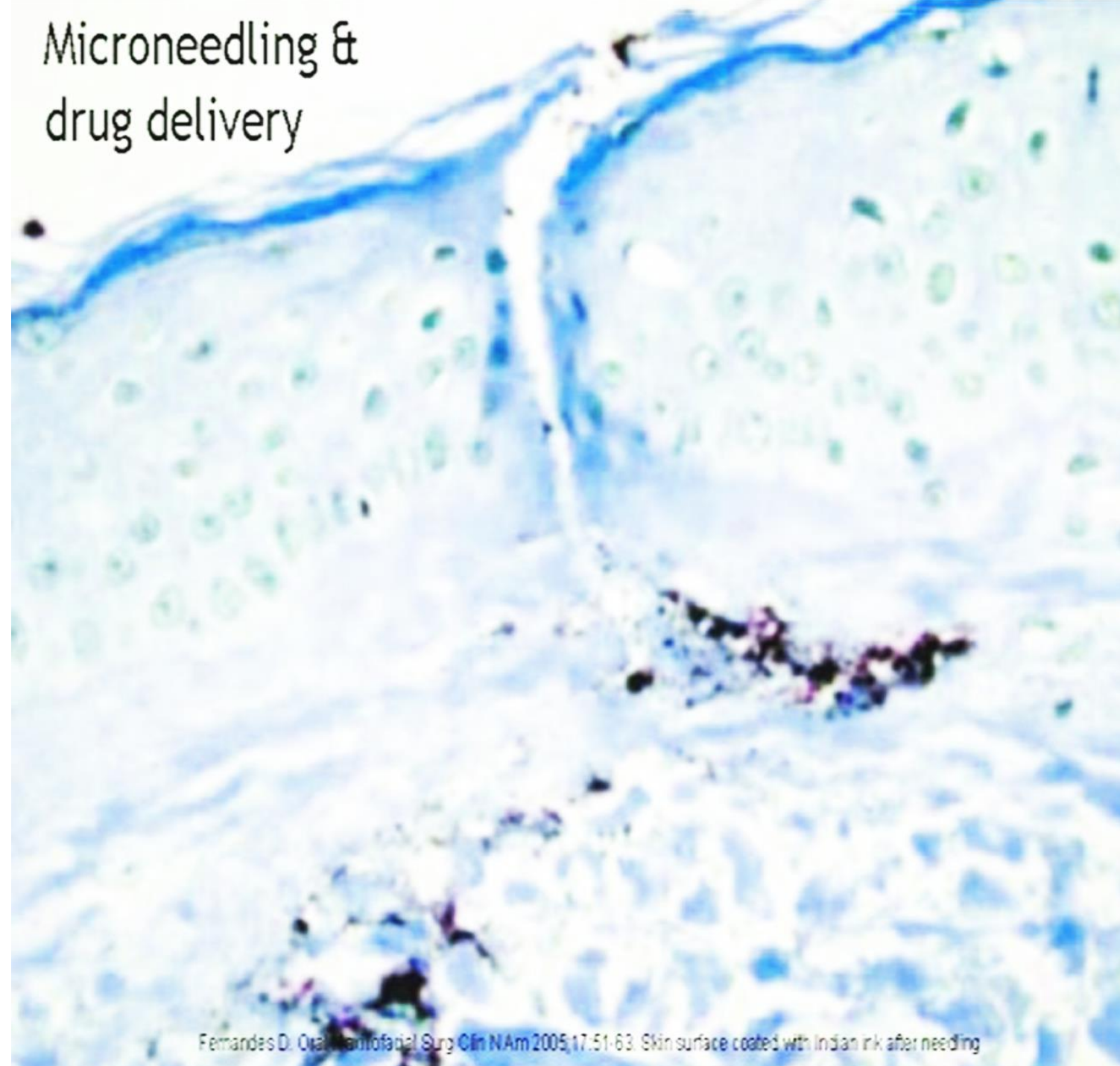
Histopathology (0.8 mm) □



Histopathology (2.11 mm)

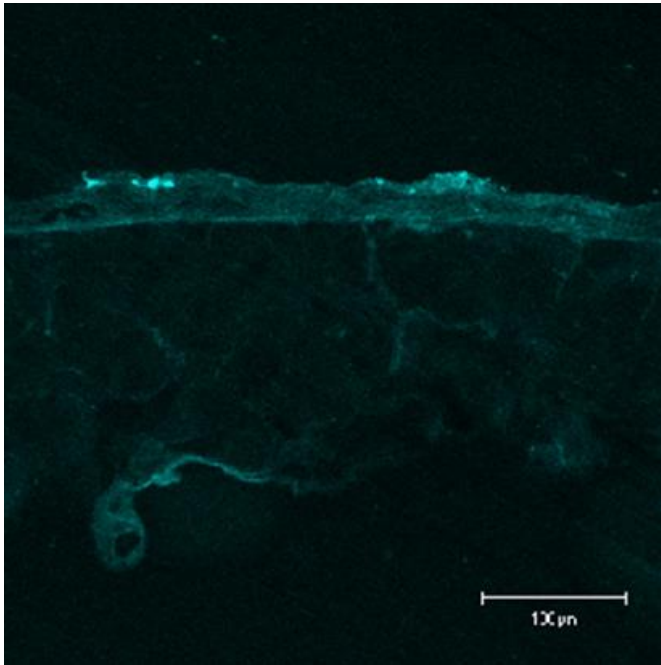


Microneedling & drug delivery

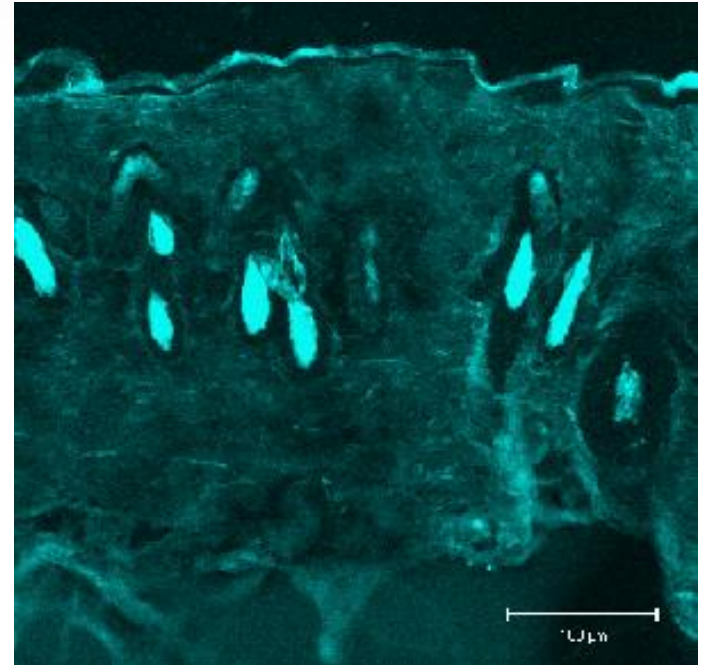


Fernandes D. *Otolaryngol Surg Clin N Am* 2005;17:51-63. Skin surface coated with Indian ink after needling

Needle Based Trans-Dermal Delivery Study



Solution applied without Derma Stamp



Solution applied with Derma Stamp

Solution penetration study with Hoechst 33342 (Glowing Substance)

Treatment Conditions

Indications

- *Skin Rejuvenation - Tightens & Firms, Face & Body*
- *Reduces Wrinkles & Fine Lines*
- *Acne Scarring*
- *Stretch Marks*
- *Scars*
- *Epidermal pigment*
- *Burn Wounds*

Contra-Indications

- *Active Acne*
- *Rosacea*
- *Raised surface*
- *Actinic Keratosis*
- *Eczema*
- *Skin Cancer*
- *Sebaceous Hyperplasia*

Before

After 4 Treatments



Wrinkles

Before



After 4 Treatments



Pigment



Stretch Marks



Scars

Before

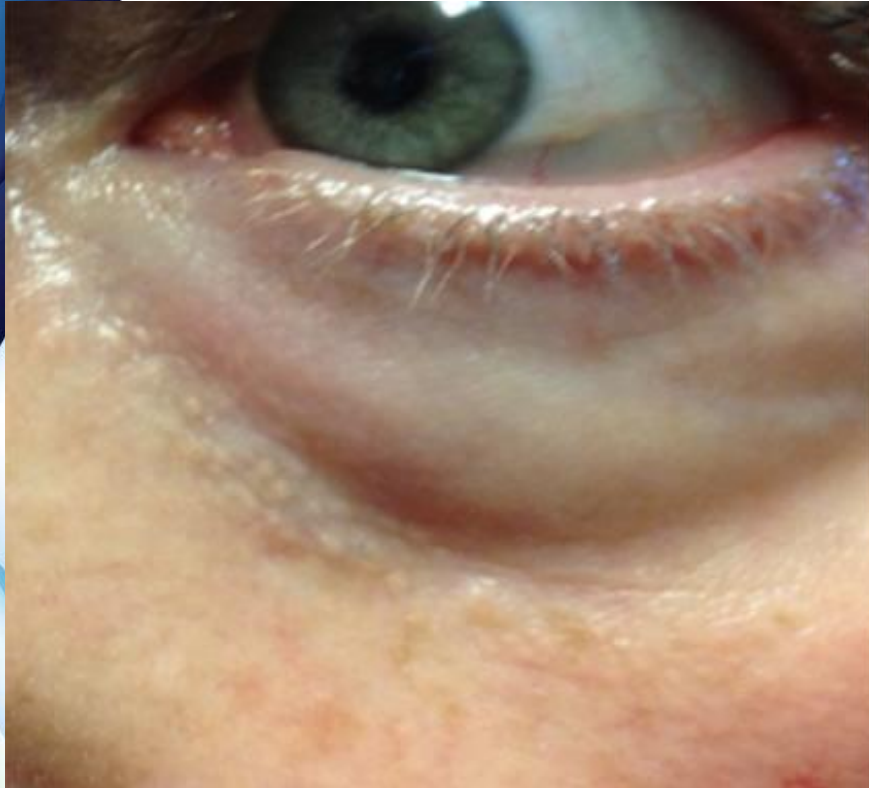


After 4 Treatments



Acne Scarring

Before

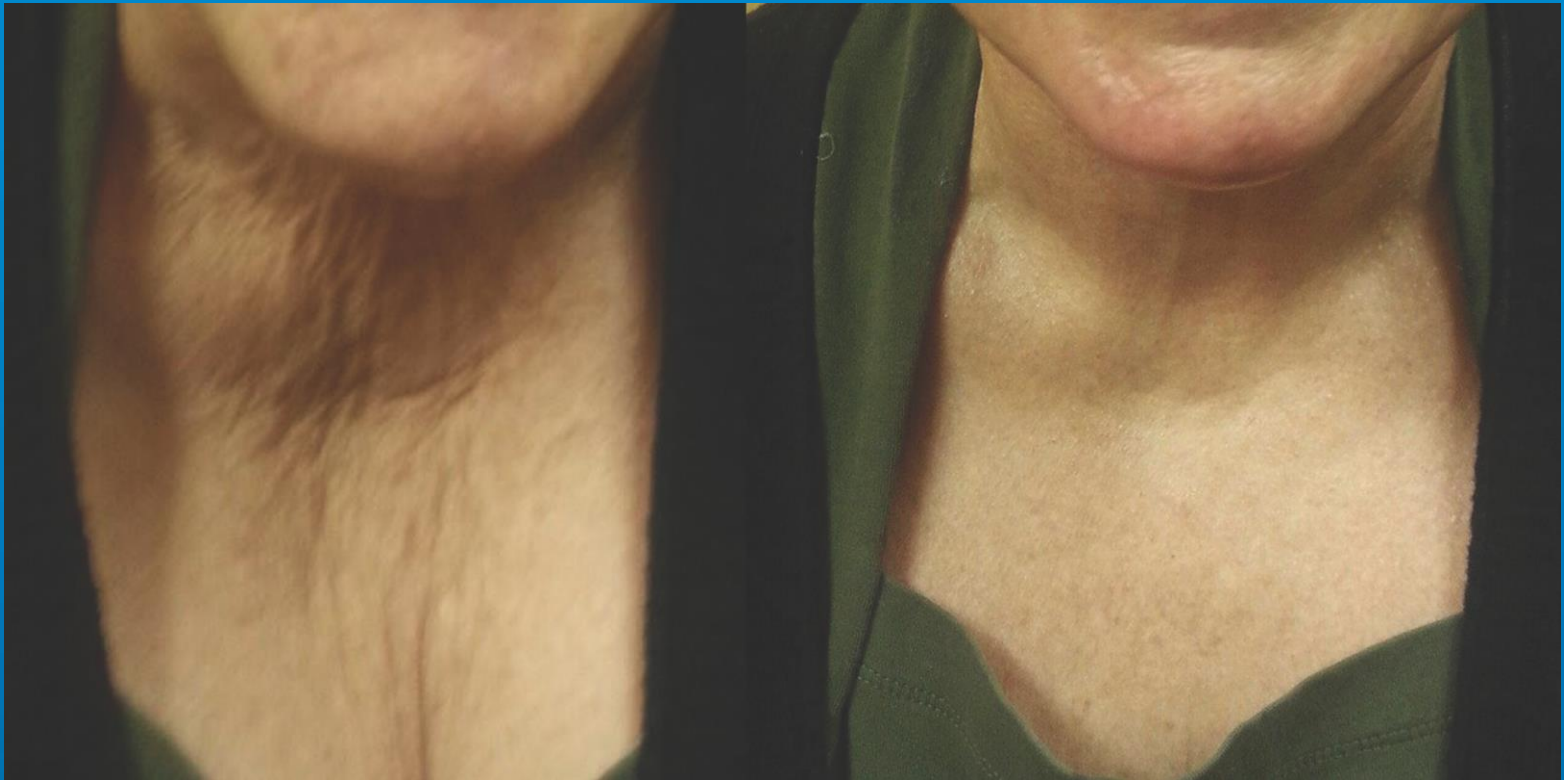


After 2 Treatments



Eye Area

Body Areas



Protocols

| <i>Application</i> | <i>Number of Treatments</i> | <i>Days in between Treatments</i> | <i>Needle Depth</i> | <i>Speed</i> | <i>Skin Care</i> |
|--|---------------------------------|---|---------------------|--------------|---------------------|
| <i>Facial Wrinkles Fine Skin</i> | <i>4-6</i> | <i>21-30</i> | <i>0.4/1.00</i> | <i>3</i> | <i>Recovery Kit</i> |
| <i>Facial Wrinkles Normal/Oily</i> | <i>6-8</i> | <i>21/30</i> | <i>0.2/1.25</i> | <i>3</i> | <i>Recovery Kit</i> |
| <i>Acne Scars (Face)</i> | <i>6-8</i> | <i>21/30</i> | <i>0.6/1.50</i> | <i>3</i> | <i>Recovery Kit</i> |
| <i>Acne Scars (Body)</i> | <i>6-8</i> | <i>21-30</i> | <i>0.6/1.50</i> | <i>3</i> | <i>Copper Cream</i> |
| <i>Stomach</i> | <i>6-8</i> | <i>21-30</i> | <i>0.8/2.00</i> | <i>3</i> | <i>Copper Cream</i> |
| <i>Arms</i> | <i>6-8</i> | <i>21-30</i> | <i>0.8/1.50</i> | <i>3</i> | <i>Copper Cream</i> |
| <i>Thighs</i> | <i>6-8</i> | <i>21-30</i> | <i>0.8/1.50</i> | <i>3</i> | <i>Copper Cream</i> |
| <i>Decollete</i> | <i>4-8</i> | <i>21-30</i> | <i>0.5/1.00</i> | <i>3</i> | <i>Copper Cream</i> |



A dark gray arrow pointing to the left, which serves as a background for the title text.

Pre & Post Care Programs

POST TREATMENT HOME CARE

A. Wash the face thoroughly a few hours after treatment. Gently wash the face with tepid water & a gentle cleanser and remove all serum and other debris such as dried blood. This will improve the appearance of the skin and also allow for better subsequent absorption of post procedure serum. Mineral makeup may be applied the following day.

B. For the first 1 -3 days the skin will be very dry and feel tight. Some flaking is normal. Frequent use of RP Copper Complex Cream or other hydrating products will help alleviate this. Use sunscreen daily. Physical Sunscreen is recommended.

C. After 2-3 days patients can return to regular skin care products or as soon as it is comfortable to do so. Vitamin A products are optimal and suggested.

D. Avoid alcohol based toners for 10-14 days.

E. Avoid direct sun exposure for at least 10 days if possible.

RECOVERY TIMELINE

Day 1: Erythema and red appearance and severity will depend upon how aggressive the treatment was performed.

Day 2: A red hue or pink hue persists like a moderate sunburn. Swelling may be more noticeable on the second day.

Day 3: Skin can be pink or normal color. Swelling subsides.

CONSENT FORM

- 1) Prior to receiving this treatment, I have been candid in revealing any condition that may have a bearing on this procedure, such as: pregnancy, recent facial peels or surgery, allergies, tendencies to cold sores and fever blisters, use of Retin-A, Glycolic Acids, Accutane or Hormonal Therapy.
- 2) I understand there are no guarantees to this procedure.
- 3) I understand there may be some degree of minor discomfort (scratchiness, itchiness and bruising).
- 4) I understand that to achieve maximum results, I will need several ongoing treatments and will need to use daily products to heal and protect my skin.
- 5) I understand that the possibility of irritation and redness exists and that I should notify my skin care professional if irritation persists.
- 6) I will follow the home care program specifically designed for me without changing or adding any products without consulting with my skin care professional.
- 7) I agree to all of the above to have this treatment performed on me and will follow all prescribed directions regarding post treatment care.

PRINT NAME: _____

SIGNATURE: _____

DATE: _____

Skin Care Questionnaire

Date: _____

Name: _____ Birthdate: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ E-Mail: _____

Referred by: _____

Smoker: (circle one) *no* *yes* Pregnant: (circle one) *no* *yes*

Cosmetic Surgery: (circle one) *no* *yes* If yes, when: _____

What procedure(s): _____

Medication: (circle one) *no* *yes* If yes, what kind(s)? _____

Any health problems? (circle one) *no* *yes* If yes, explain: _____

Any allergic reactions to medication? (circle one) *no* *yes* If yes, please describe: _____

Do you have any allergies? (circle one) *no* *yes* please explain: _____

Do you suntan? (circle one) *no* *yes* Do you use sunscreen? (circle one) *no* *yes*

Please name the brand of products you are currently using:

Cleanser: _____ Toner: _____

Moisturizer: _____ Scrub: _____

Mask: _____ Other: _____

Have you ever used Retin-A? (circle one) *no* *yes* If yes, what strength? _____

Have you ever been treated with Phenol or Trichloroacetic acid? (circle one) *no* *yes*

Have you ever used Hydroquinone (skin lightener)? (circle one) *no* *yes*

Have you ever been on Accutane? (circle one) *no* *yes* If yes, when? _____

Have you ever had *herpes*, *hives*, *cold sores*, *fever blisters*, *keloids*? When? _____

How would you characterize your skin: (circle one) *Sensitive* *Rough* *Dry* *Oily/Acne-prone*

If you had one complaint about your skin, what would it be? _____

Describe your skin in three words: _____

Additional comments/concerns: _____



Cover-Up

– Dr.'s are now choosing products that don't include Aquaphor due to breathability. Products with correct ingredients minimize down time while increasing patient care

- Hyaluronic Acid and PCA replenishes moisture loss
- Aloe Gel base for soothing and healing of the skin
- Oil free, paraben free, and fragrant free
 - Additionally, the foundations can provide SPF 25 (physical)
 - Water, sweat, and transfer resistant



Combination Therapy

Collagen Induction Therapy CLT X4 plus
Microdermabrasion for epidermal exfoliation
CLT X4 plus Dermaplane for exfoliation
CLT plus Radio Frequency maximize skin tightening
CLT plus IPL
CLT plus Topicals (PRP or HGF)