

# GROWTH FACTORS & WOUND REPAIR

Janel Luu,  
CEO of Le Mieux Cosmetics

*February 29, 2016 - online training*



**Make sure you have speakers  
and the volume is turned up!**



1. Shift in mass mentality to **CUSTOMIZED & individualized programs**
2. Designing the client's skincare program—new clients are looking for **EDUCATION**
3. Beauty programs tailored to the **GENETIC MAKE-UP** of the individual

# GENETIC MAPPING

**Genes are responsible for:**

- Cellular energy production
- Cell junction and adhesion process
- Skin and moisture barrier formation
- DNA repair and replication
- Antioxidant production

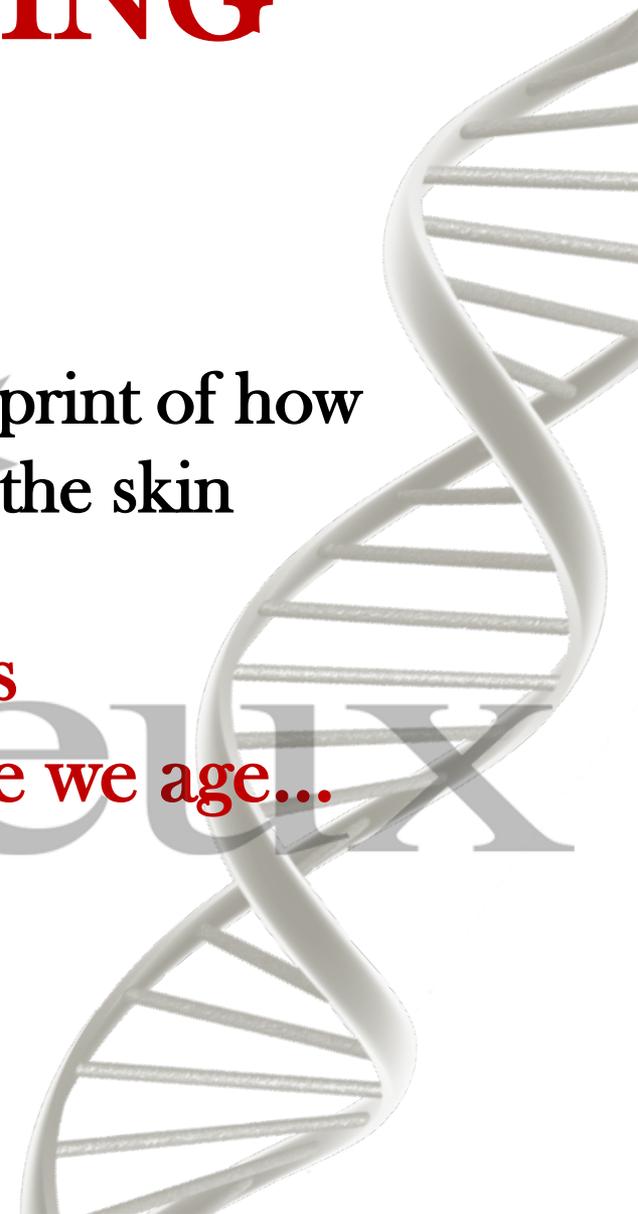
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# GENETIC MAPPING

- Pinpoints skin's aging process
- Provides unique “ageless” skin fingerprint of how strongly 2000 genes are expressed in the skin
- **Distinct gene expression changes can be identified for each decade we age...**

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## **In 20's:**

### Decline in Antioxidant Response

Increased need for vitamin infusion

## **In 30's:**

### Decline in Skin Bioenergy

Rate of new cells being produced slows down,  
making skin drier and duller

More fine lines around eyes and mouth

Loss of skin tone

Weakened elastic support from lymph glands  
(responsible for flushing out toxins) leads to  
puffiness around eyes

Overall complexion becomes less bright

## In 40's:

Increase in Cellular Senescence

Decrease in a cell division and growth

**Decrease in Growth Factor**

Lymphatic system slows down

Lymphatic drainage slows down

Breakdown in fibers supporting lymph glands

Increased puffiness around the eyes

## In 50's:

### Decline in Skin Barrier Function

**Patches of pigmentation** are likely to appear - age spots

**Spider veins** start to show - often a sign of blood vessels damaged by the sun

**Menopause** and **lower estrogen levels** slow sebum production, protecting skin less and making it drier

Increase in **pore size** as skin loosens

Skin becomes **dehydrated**; **more wrinkles** are apparent

**Breakdown in collagen and elastin**

Elasticity breaks down around eyes and eyelids

# Photo-Aging and **COLLAGEN LOSS**

## PHOTO-AGED SKIN

## HEALTHY SKIN

Slow skin turnover, old cells remain on the surface--  
**EGF-DNA Serum**

Stratum corneum is dehydrated; skin looks dull and tired--**Mandelic 15%**  
and/or **Vita-C Pad**

Skin cells are misshapen and disorganized--**Rx Complex**

Over production of melanin leads to hyperpigmentation--  
**Brightening Serum** and/or  
**Vita-C Serum**

Collagen and elastin fibers are weak and damaged; epidermis is no longer supported; skin is wrinkled and sagging--  
**Collagen Peptide Serum**

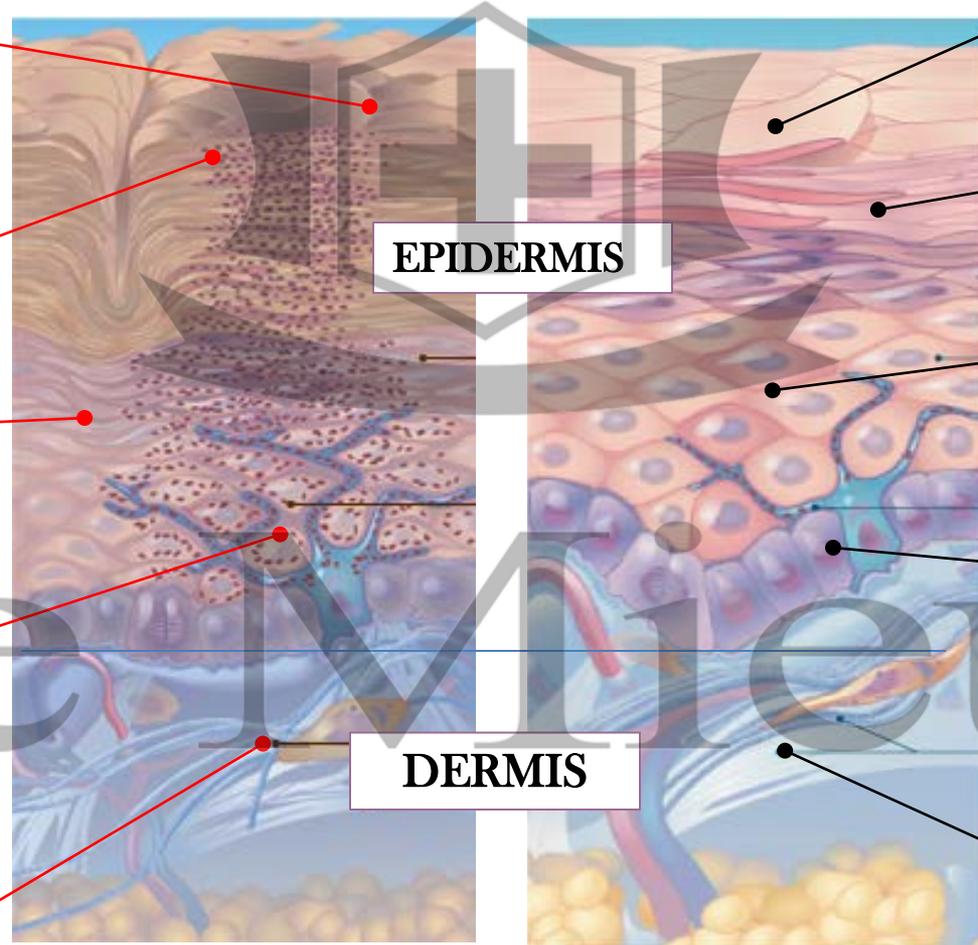
Faster skin turnover, new skin cells are constantly generated

Stratum corneum is hydrated

Skin cells are healthy and full

Normal production of melanin results in even skin tone

Supporting skin structure is strong and resilient; skin is smooth and supple



EPIDERMIS

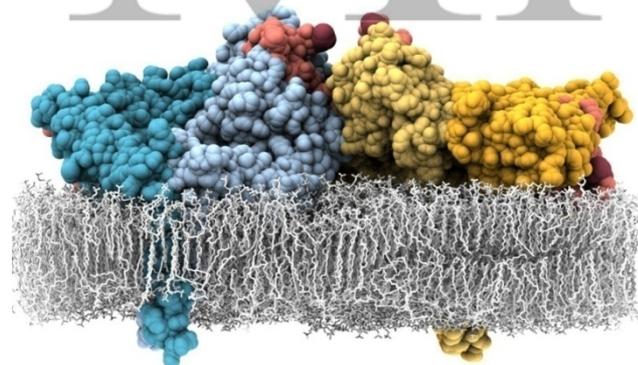
DERMIS

**CELLULAR  
REGENERATION  
in WOUND REPAIR**

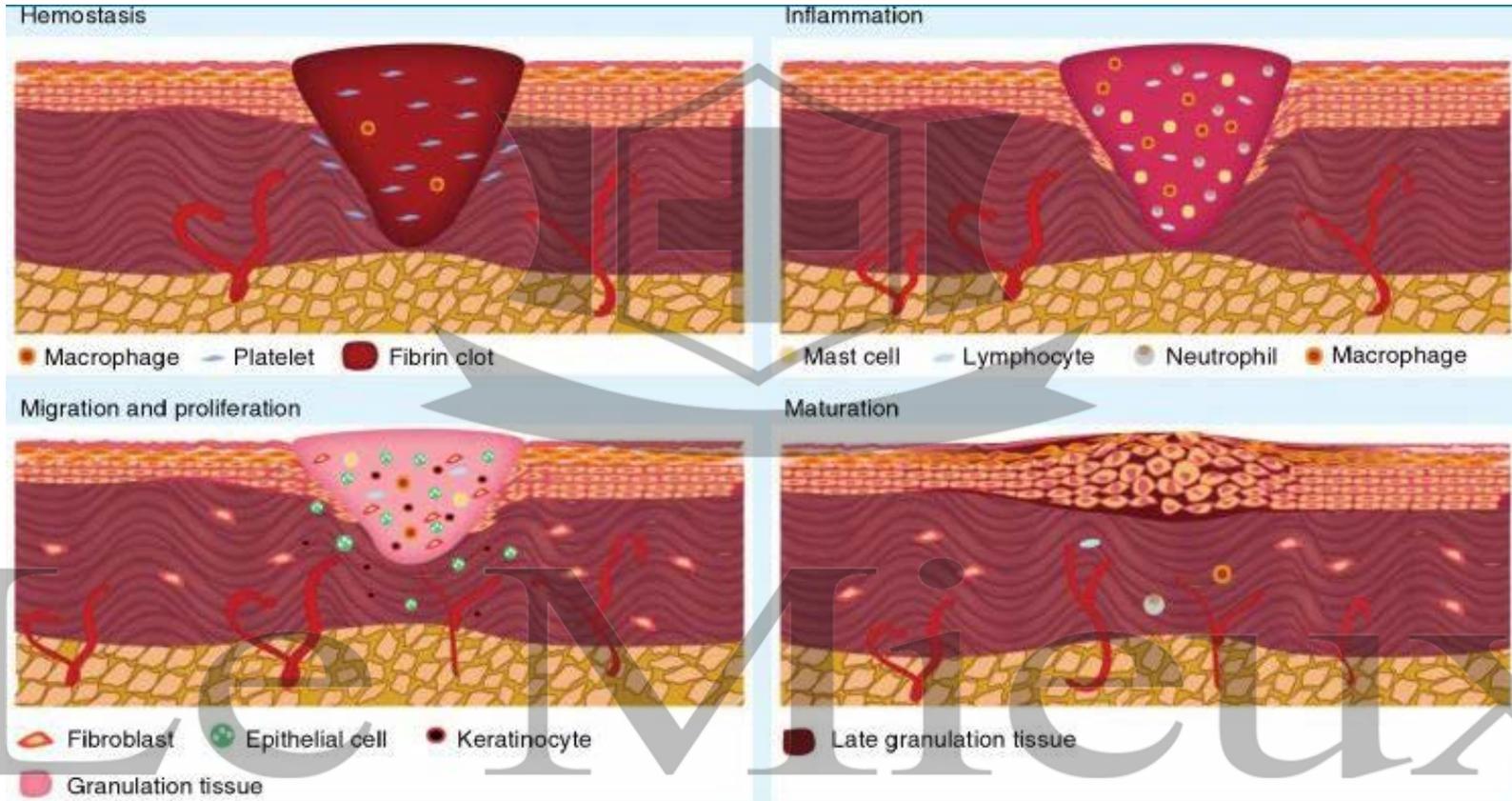
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# Epidermal Growth Factor (EGF)

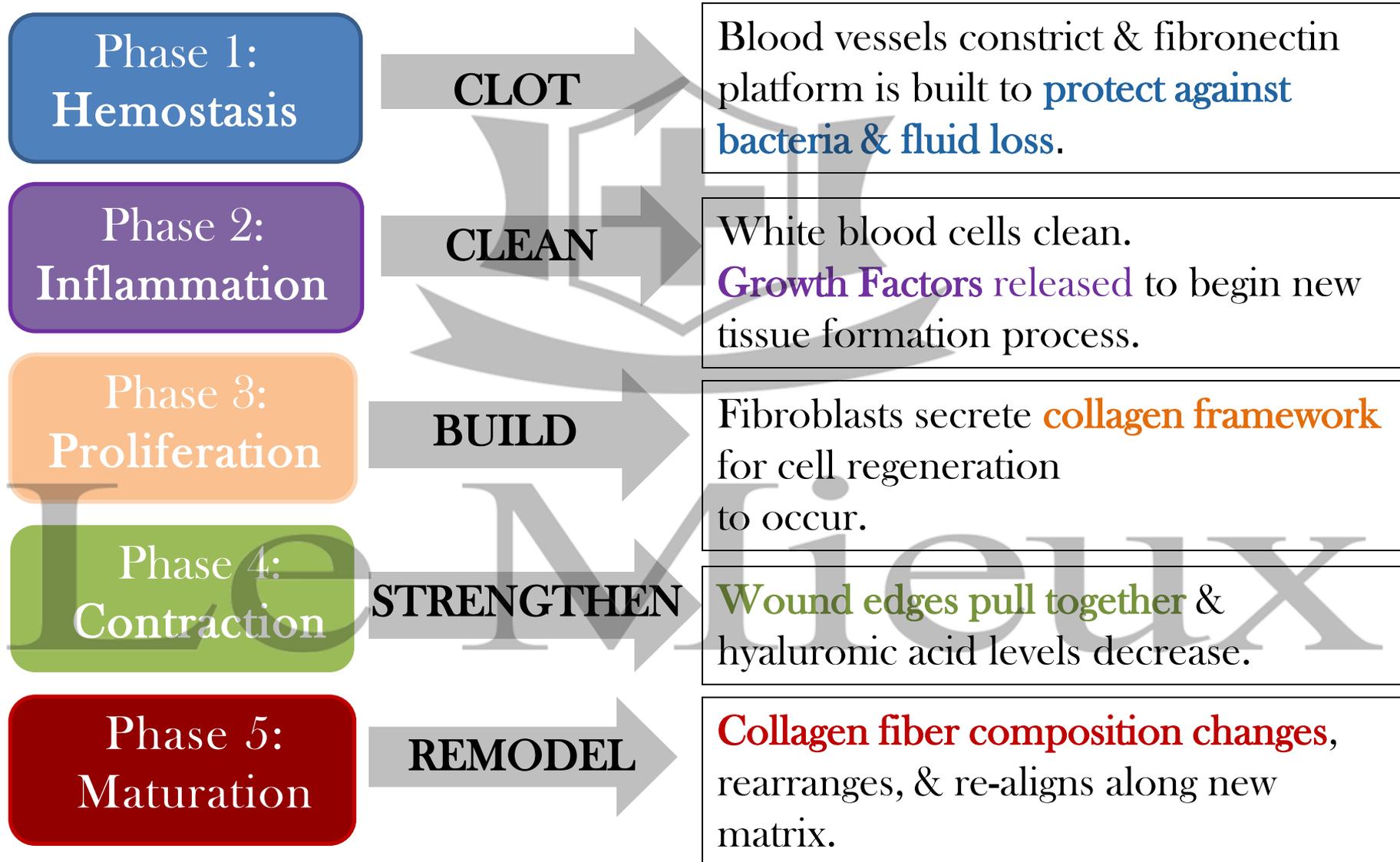
- Protein that catalyzes the healing process
- Allows epidermal and epithelial cells to divide and grow
- Growth factors naturally exist in our skin cells
- Skin produces and uses EGF, especially after skin damage
- Topically, EGF increases mitosis (process by which body generates & replaces cells)
- Increases synthesis of proteins
- Increases circulation as more blood vessels form



# Phases of Wound Healing: Cell Regeneration & Skin Repair

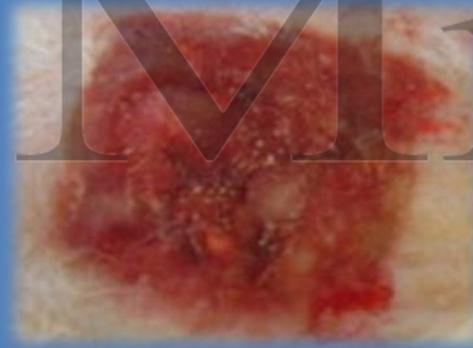


# 5 PHASES of Cell Regeneration & Skin Repair



## Phase 1: Hemostasis (Immediate)

- Platelets cluster
- Blood vessels contract & vasodilate to pour in repair materials & defense mechanisms
- Begins within minutes after tissue damage



## Phase 2: Inflammation (6-8 hrs)

- Macrophages arrive & continue clearing debris. Low oxygen supply triggers macrophages to activate signals for growth factors
- **Angiogenesis: formation of new blood vessels necessary for cellular repair**
- VEGF responsible for signaling new blood vessel creation (“nutrient highway”)
- **EGF signals adult stem cells to make new glands, collagen, dermal cells, epithelial cells**



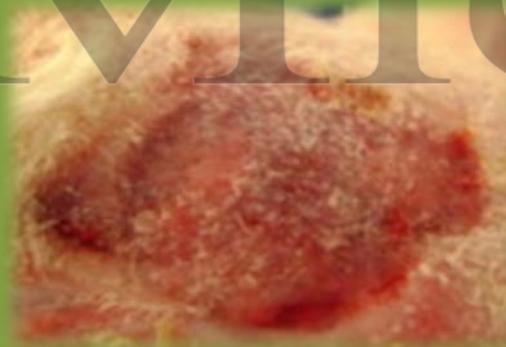
# Phase 3: Proliferation

- **Angiogenesis:** Formation of new blood vessels necessary for cellular repair. Angiogenic factors & VEGF attract fibroblasts & endothelial cells into the wound area
- **Matrix Deposition:** Fibroblasts deposit ground substance & collagen to create provisional Epithelial Cellular Matrix over injury site (key components include fibronectin, hyaluronan, collagen, & glycoproteins)
- **Hydration** is critical for healthy healing; insufficient oxygen inhibits ECM fibroblast proliferation & may cause fibrotic scarring
- **Re-epithelization** begins—Epithelial cells migrate to open wound site



## Phase 4: Contraction (3-5 days)

- Key phase of wound healing with repair
- Contraction of wound edges occurs asymmetrically
- Provisional Matrix breaks down as fibroblasts lay down collagen to reinforce the wound
- Decreased hyaluronic acid triggers fibroblasts to stop proliferating
- Fibroplasia: secretion of collagen, glycosaminoglycans, elastin, fibronectin & protease



## Phase 5: Maturation

- **Re-epithelialization:** Covers granulation tissue with epidermal cells to protect against environment & completes wound healing
- **Type III collagen replaced by type I collagen**
- **Onset of maturation varies extensively**

  
  
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**GROWTH FACTORS  
and ANTI-AGING**

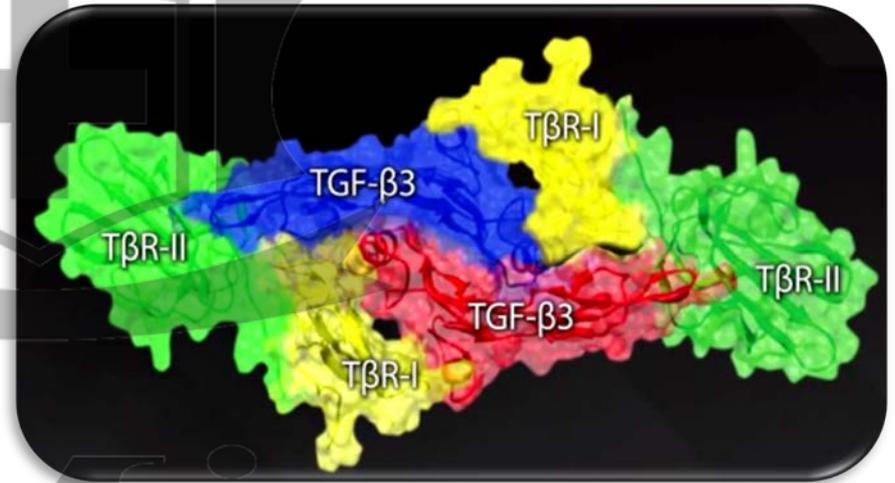
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# GROWTH FACTORS

## stimulate & help regenerate

Growth factors are naturally occurring **proteins** produced by skin cells. They stimulate:

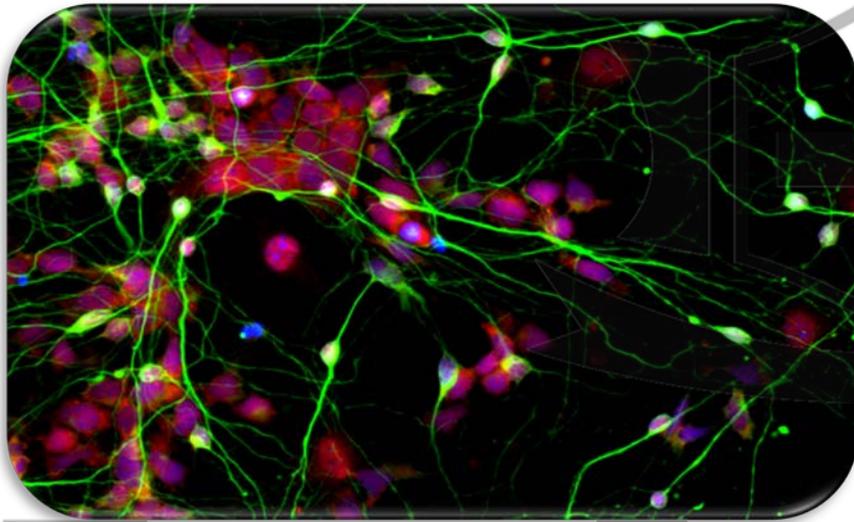
1. cellular growth
2. proliferation
3. differentiation



The normal aging process leads to the decrease in the production and level of growth factors.

# GROWTH FACTORS

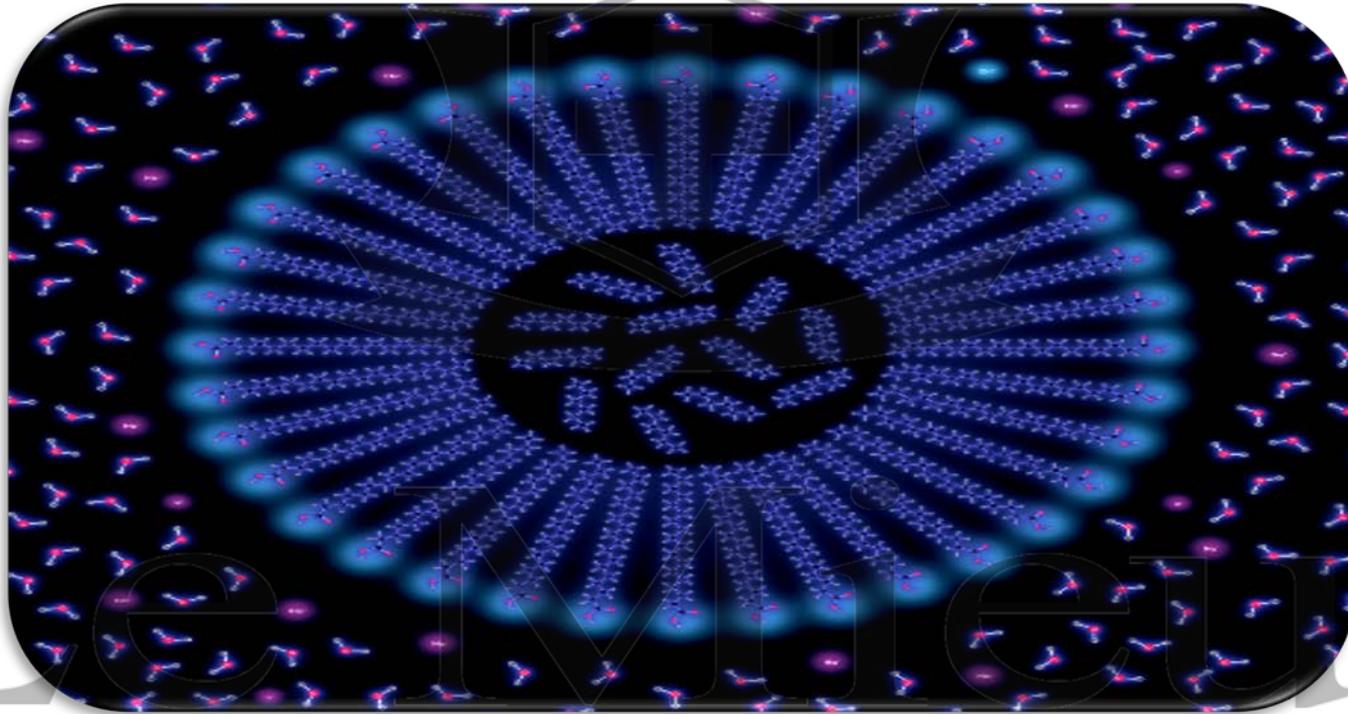
communicate & repair



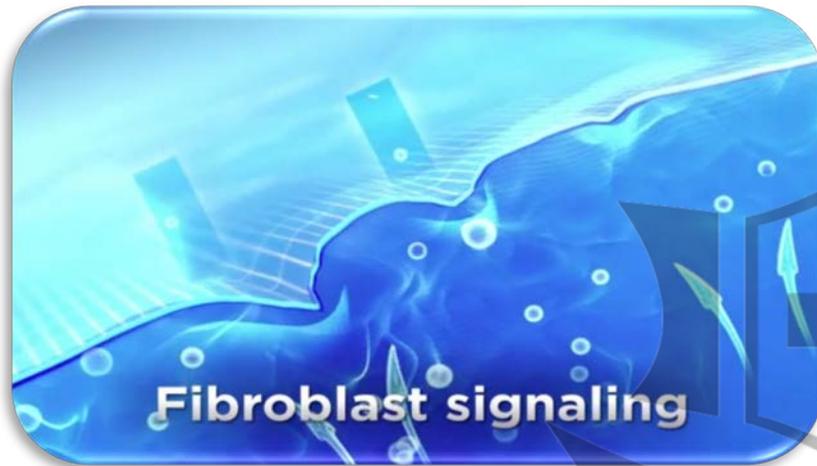
Growth Factors are part of a cellular communication system that influences the natural repair process.

When there is damage, the cells in that region produce growth factors that communicate to surrounding cells that damage needs to be repaired.

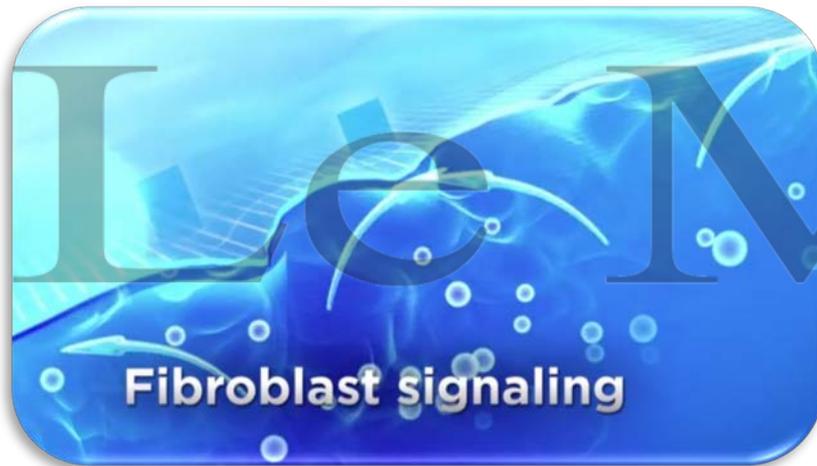
Growth Factors  
act as signaling molecules between cells.



The **repair message** travels to cells deep into the skin via a **signaling cascade**.



When growth factors are applied topically, the stratum corneum stimulates a cascade of information that goes down into the dermis and stimulates fibroblasts to produce collagen.



Because of established communication pathways, growth factors do NOT need to go deep into the dermis.

# The **ABC**'s of Growth Factors

## **A** - Association

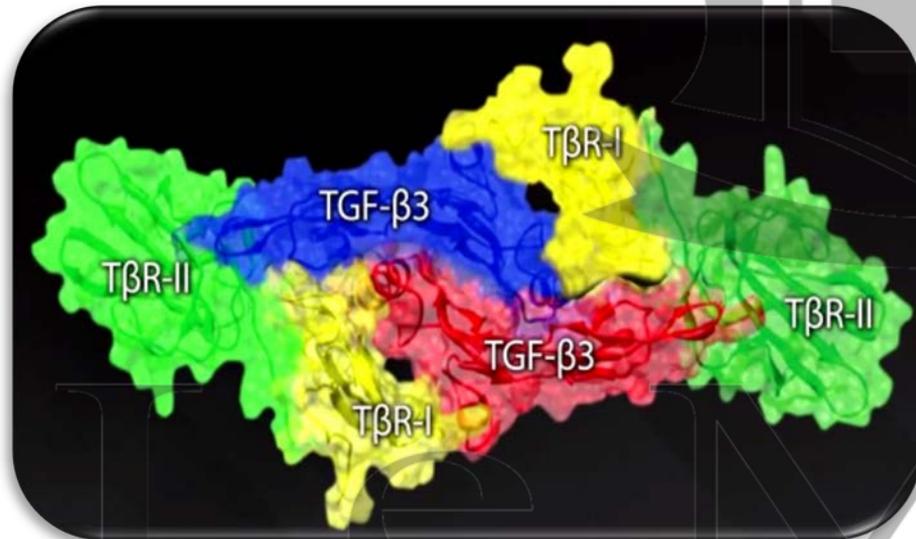
Growth factors do not work by themselves; they work in **association with other growth factors** that are normally present in the skin.

## **B** - Balance

Growth factors must be physiologically **balanced and stable**.

## **C** - Concentration

For efficacious results, growth factors must be **concentrated**.



# EGF-DNA

## *Repair & Restore*



- ✓ Consists of a single polypeptide chain of 53 amino acids
- ✓ Optimizes healing & wound recovery (post peel/laser)
- ✓ Accelerates cellular turnover
- ✓ Reprograms damaged cells so they act youthfully
- ✓ Smooths appearance of dry and flaky skin
- ✓ Promotes a healthy glow
- ✓ Contributes to faster skin renewal

# STEMCELL EGF

*Firm & Refine*



Features age-reversing peptides, stem cells, and growth factors

**Encourages collagen and elastin synthesis**

Assists in preventing collagen breakdown

**Visibly minimizes fine lines and wrinkles**

Improves the appearance of sagging facial contours

**Stimulates hyaluronic synthesis to restore softness and suppleness**

Enhances tone, texture, and radiance

**Groundbreaking follicular transdermal technology**

**Skin types:** Dry, normal

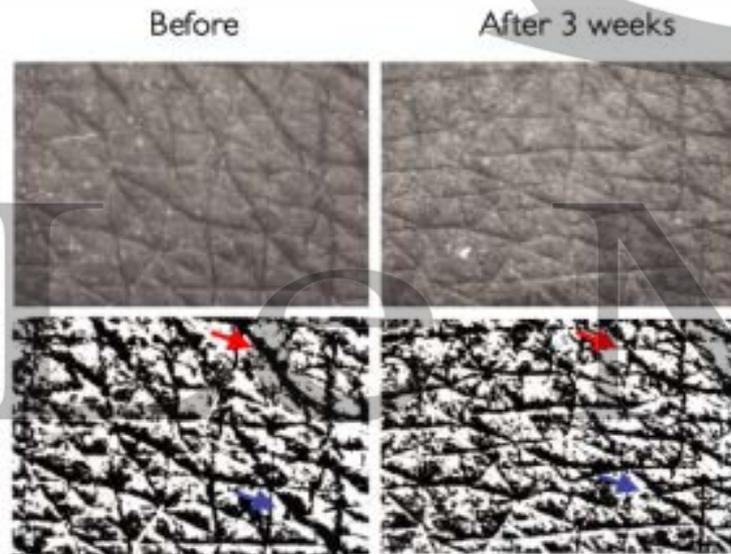
**Skin conditions:** Dehydration, dullness, lines and wrinkles, sagging

**Professional size only:** 8 oz

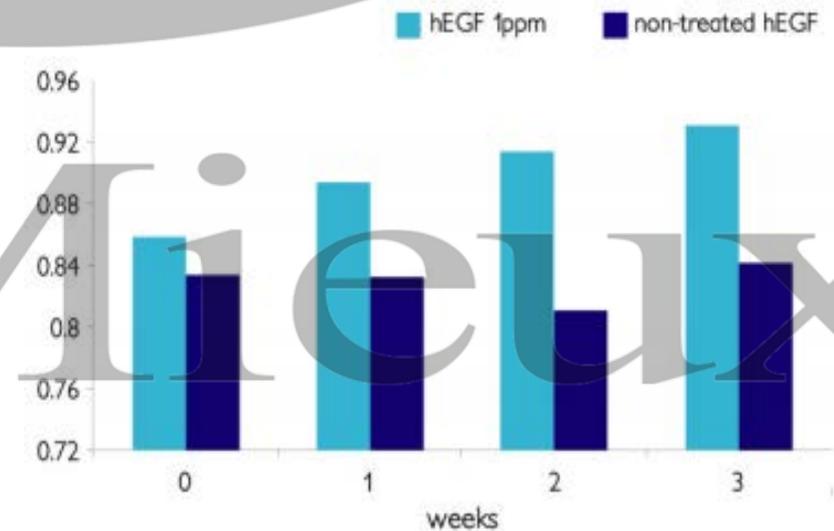
# STEMCELL EGF - *Clinical Proof I*

## EGF (PROPRIETARY FORMULA)

- Contains 53 amino acids to promote collagen synthesis
- hEGF peptide enhances proliferation of skin fibroblasts and keratinocytes



Anti-wrinkle effect of RA-hEGF using the Visioscan<sup>®</sup> VC 98

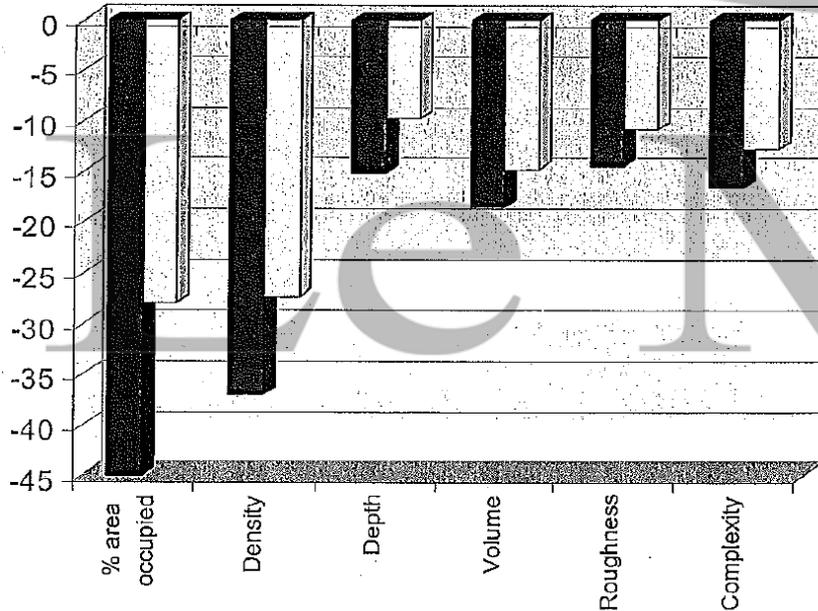


The elasticity effect measurements of RA-hEGF are carried out with the CUTOMETER

# STEMCELL EGF - *Clinical Proof II*

## PALMITOYL OLIGOPEPTIDE AND PALMITOYL TETRAPEPTIDE-7 (*Matrixyl 3000*)

Provide anti-wrinkle effect  
Improve tone and elasticity  
Help smooth out fine lines



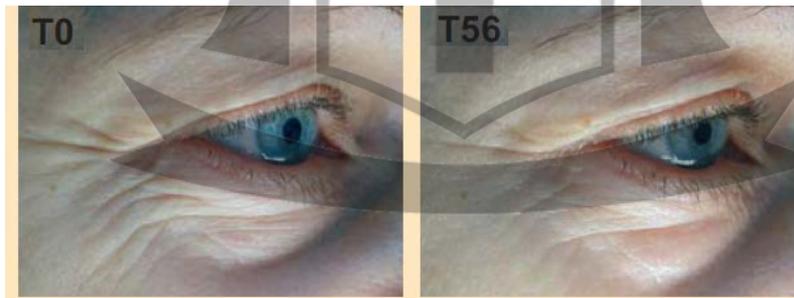
After 8 weeks in-vivo

- 15% reduction in wrinkle depth
- 18.5% reduction in wrinkle volume
- 14% reduction in skin roughness
- 16% reduction in skin complexity
- 44.9% reduction of area occupied by wrinkles
- 15% increase in skin tone

# STEMCELL EGF - *Clinical Proof III*

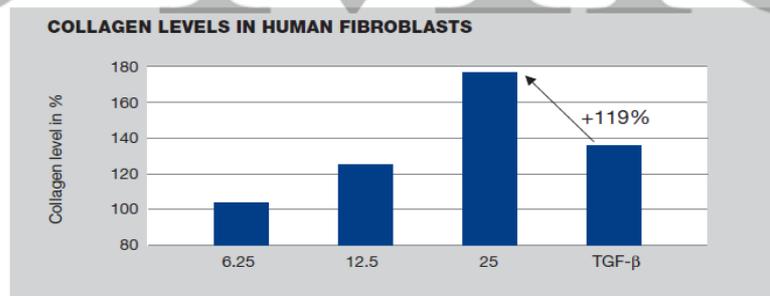
**MATRIXYL 3000** improves tone, texture, elasticity, and anti-wrinkle effect

- **258%** increase in collagen synthesis after 3 days, in-vitro
- **179%** increase in hyaluronic synthesis after 3 days, in-vitro
- **45%** reduction in area occupied by wrinkles after 8 weeks, in-vivo



**Palmitoyl Tripeptide-5** prevents collagen breakdown; promotes collagen synthesis

- **350%** improvement in wrinkle reduction after 3 months, in-vivo
- **119%** increase in collagen production after 3 months, in-vitro



**INCREASE OF COLLAGEN** synthesis by **119%** compared to the positive standard.

# STEMCELL EGF – *Clinical Proof IV*

## ARGAN STEM CELLS:



Improve firmness and density  
Help accelerate the repair process

After 56 days in-vivo:

26% reduction in wrinkle depth

14% Reduction of the Dermis-Hypodermis junction area



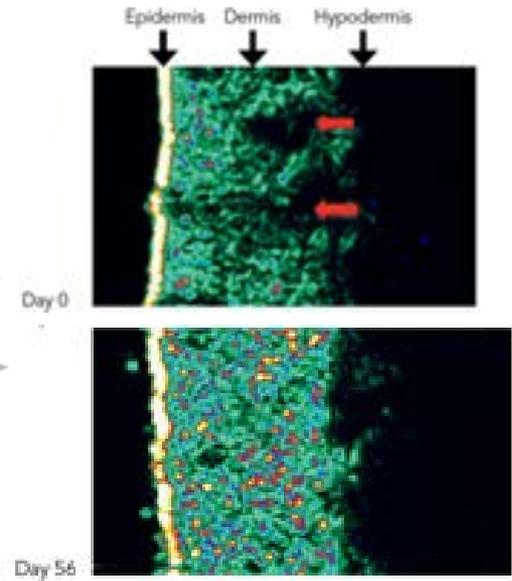
## ALPINE ROSE STEM CELLS:

Protect vital skin stem cells



## GRAPE STEM CELLS:

Protect against UV stress; increase UV tolerance by 25%



## Calming & Renewing Post-Procedure Protocol

*Therapeutic post-procedure protocol uses products with **concentrated growth factors** to promote skin renewal after treatments using **radio frequency, chemical peels, laser, LED, and cryo-electrophoresis machines.***

### PRODUCTS

- Phyto-Marine Cleansing Lotion
- Iso-Cell Recovery Solution
- **StemCell EGF**
- Hyaluronic Serum
- Derma Relief Serum
- Moisture Infusion Mask
- Marine Collagen Peptide Serum
- Vita-C Skin Protective Crème

### TIME

20-30 minutes

### AREA

Face, Neck, Décolleté

### ★ HOME CARE ★

- Phyto-Marine Cleansing Lotion
- Iso-Cell Recovery Solution
- O<sup>2</sup> Calming Gel - if redness persists
- Hyaluronic Serum
- Derma Relief Serum
- **EGF-DNA**
- Collagen Peptide Serum

After 5-7 days, apply Collagen Peptide Serum over targeted areas.

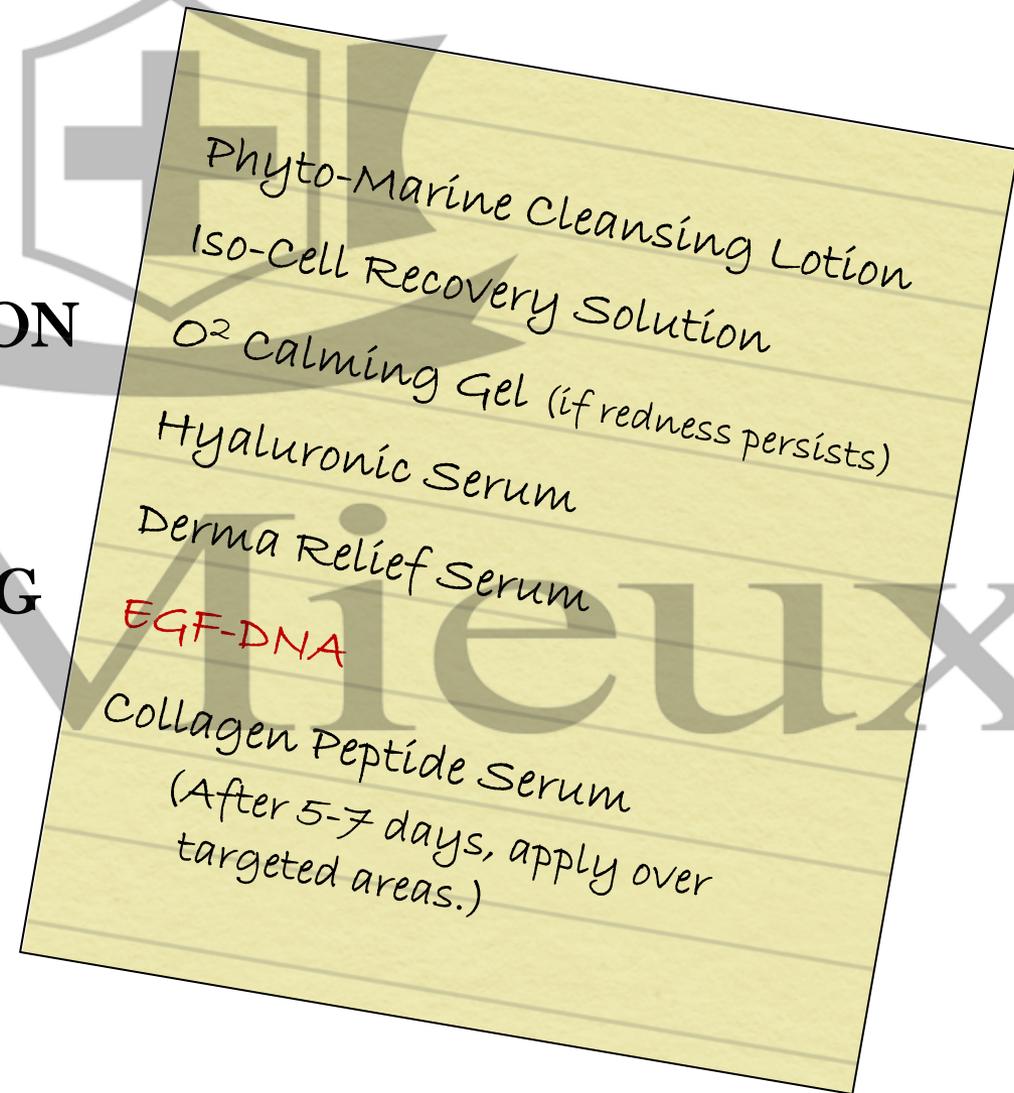
# POST-PROCEDURE PROTOCOL

- |   |                  |              |                                                                                                                                                                              |
|---|------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <b>Cleanser</b>  | 3-4<br>min   | Cleanse the facial area with <b>Phyto-Marine Cleansing Lotion</b> .<br>Pat dry.                                                                                              |
| 2 | <b>Toner</b>     | 1-2<br>min   | Spray <b>Iso-Cell Recovery Solution</b> onto hands. Pat onto client's face.                                                                                                  |
| 3 | <b>Serum</b>     | 1-2<br>min   | Gently apply 2-3 drops of <b>Hyaluronic Serum, Derma Relief Serum,</b><br>and <b>StemCell EGF</b> onto client's face, neck, and décolleté, layering<br>serums in that order. |
| 4 | <b>Mask</b>      | 15-20<br>min | Apply <b>Moisture Infusion Mask</b> onto face. Remove after 15 minutes.<br>Do not rinse.                                                                                     |
| 5 | <b>Hydration</b> | 1<br>min     | Gently apply <b>Marine Collagen Peptide Serum</b> onto client's face, neck,<br>and décolleté.                                                                                |
| 6 | <b>Sun Care</b>  | 1-2<br>min   | Complete procedure by applying <b>Vita-C Skin Protective Crème</b> .                                                                                                         |

prescription for post-procedure

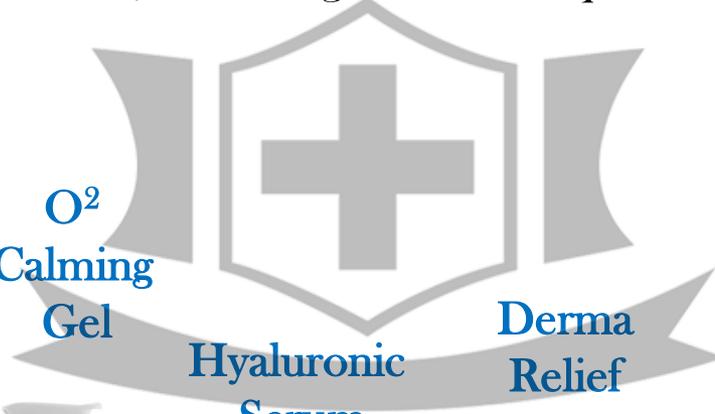
## HOME CARE

- SOOTHES IRRITATION
- REDUCES REDNESS
- PROMOTES HEALING



# post-procedure **HOME CARE**

*for soothing irritation, reducing redness & promoting healing*



**Phyto-  
Marine  
Cleansing  
Lotion**



**Iso-  
Cell  
Recovery  
Solution**



**O<sup>2</sup>  
Calming  
Gel**



**Hyaluronic  
Serum**



**Derma  
Relief  
Serum**



**EGF-  
DNA**



**Collagen  
Peptide  
Serum**





**ADVANCED  
AESTHETIC**  
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**Thank you for attending.**

**Don't miss  
the next online training  
on March 21!**

*More details to follow.*