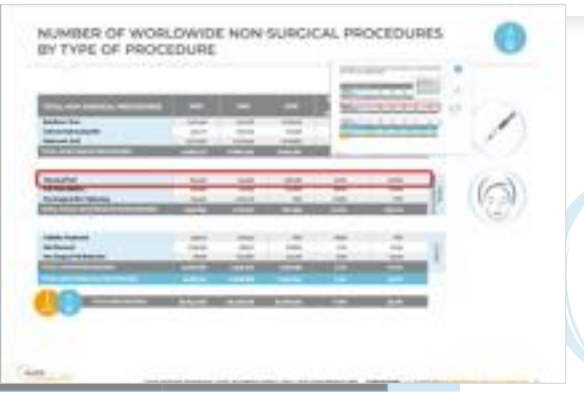
Peels
CLASSIFICATION OF A.TENENBAUM
AIME-AESTHETIC MEDICINE
02-2026

A.TENENBAUM, M.D.,Ph.D., D.Sc
M.TIZIANI, RCSA


STYLING COSMETICS AG
Home Indications
Products List
Main Protocols
Get Quickly Tanned
Metabolic Peels Technics
Gallery
Shop online
Peels Bestseller
Order Help
Indications
Moisturizers
Best Product : Les Félins
INTENSIVE DEEP HYDRATION
A moisturizer cream is an essential part of a skincare routine, working wonders to keep your skin hydrated and healthy. It is a product that helps to replenish and lock in moisture, preventing dryness and promoting a supple complexion.
Take a Look
Anti Aging
Best Product : Lipoic Acid Cream
A moisturizer cream is an essential part of a skincare routine, working wonders to keep your skin hydrated and healthy. It is a product that helps to replenish and lock in moisture, preventing dryness and promoting a supple complexion.A moisturizer cream is an essential part of a skincare routine, working wonders to keep your skin hydrated and healthy. It is a
EyeContour
Best Product : EyeContour Gel
One highly recommended cosmetic cream for the eye contour is EyeContour. Its lightweight and fast-absorbing formula helps to hydrate, nourish, and rejuvenate the skin around your eyes. It also works to reduce the appearance of dark circles, puffiness, and crow's feet.
Take a Look
BEFORE
AFTER 4 SESSIONS
Courtesy of Dr.Alain Tenenbaum
D365 stable
D0
D60
09:27
Styling Cosmetics AG
For MD-Doctors
What is Endopeel
For Patients
Inventors
Peelings
Congresses + Workshops
APP
ENDOPEEL

NUMBER OF WORLDWIDE NON-SURGICAL PROCEDURES BY TYPE OF PROCEDURE



TOTAL NON-SURGICAL PROCEDURES	2022	2021	2018	P 20
Botulinum Toxin	9,221,419	7,312,616	6,097,516	
Calcium Hydroxylapatite	350,716	290,095	129,038	
Hyaluronic Acid	4,312,037	5,279,344	3,729,833	
TOTAL INJECTABLES PROCEDURES	13,884,172	12,882,055	9,956,387	

Chemical Peel	844,616	534,831	408,485	57.9%	106.8%
Full Field Ablative	367,983	231,955	192,880	58.6%	90.8%
Non-Surgical Skin Tightening	734,257	1,003,731	N/A	-26.8%	N/A
TOTAL FACIAL REJUVENATION PROCEDURES	1,946,855	1,770,517	601,365	10.0%	223.7%

FACIAL REJUVENATION

Cellulite Treatment	449,314	379,224	N/A	18.5%	N/A
Hair Removal	1,798,253	1,836,111	916,869	-2.1%	96.1%
Non-Surgical Fat Reduction	778,716	730,980	473,316	6.5%	64.5%
TOTAL OTHER PROCEDURES	3,026,284	2,946,316	1,390,185	2.7%	117.7%
TOTAL NON-SURGICAL PROCEDURES	18,857,311	17,598,888	11,947,937	7.2%	57.8%

OTHER

TOTAL PROCEDURES	33,844,293	30,439,576	23,266,375	11.2%	45.5%

What Is a Chemical Peel?

A clinical technique — not merely a skin flaking process

A chemical peel is a controlled clinical technique designed to

Improve and smooth facial and /or body skin structure through the application of a chemical solution.

Desquamation is not mandatory.

Clinical efficacy may occur with or without visible peeling.

- Progressive elimination of altered skin layers
- Regenerated skin appears smoother, more uniform, and less wrinkled

Explore the Science of Chemical Peels ›

Le pKa peut être comparé à un agresseur qui porte un coup de poing.

La biologie représente la victime, et l'outcome clinique correspond aux conséquences finales — bénignes, sévères ou incapacitantes.

Un coup de poing porté avec la même force n'aura pas les mêmes conséquences biologiques ni cliniques selon qu'il touche les fesses, le nez ou le sternum.

Ce n'est pas le coup en lui-même qui détermine la gravité, mais le tissu touché, sa structure, sa capacité d'adaptation et sa réponse biologique.

pKa can be compared to an aggressor delivering a punch.

Biology represents the victim, and the clinical outcome reflects the final consequences — mild, severe, or incapacitating.

A punch delivered with the same force will not produce the same biological effects or clinical outcomes if it strikes the buttocks, the nose, or the sternum.

Severity is not determined by the punch itself, but by the tissue involved, its structure, vulnerability, and biological response.

La biologie représente la victime, et l'outcome clinique correspond aux conséquences finales — bénignes, sévères ou incapacitantes.

Pthe same way, pKa describes the chemical aggression, but clinical efficacy and risk are determined by tissue biology, not by chemical strength alone.

SCIENTIFIC PUBLICATIONS OF INTEREST

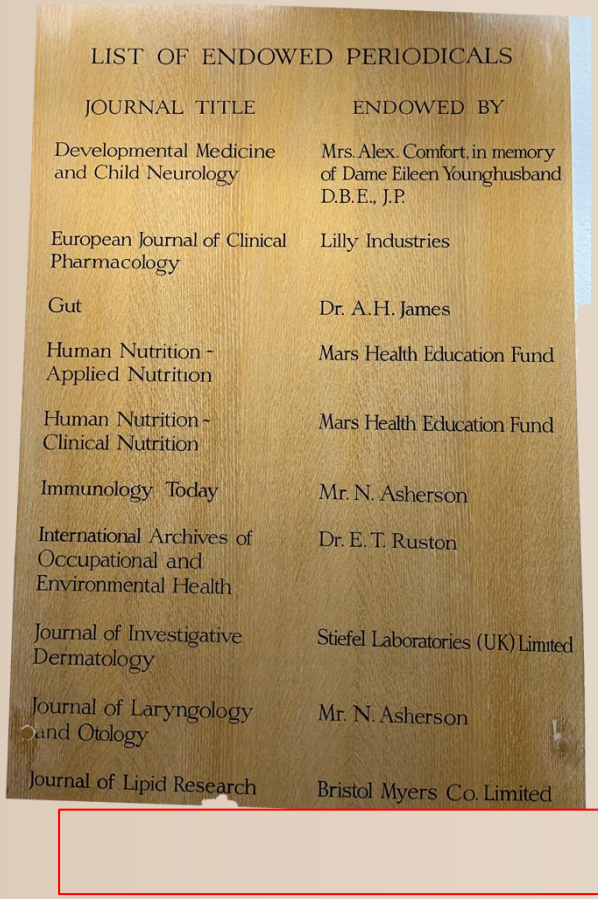
THE ISSUES CAUSEO BY ENDOWED PERIODICALS

BIG PHARMA

BUREAUCRATS

Endowed Periodicals

The issues caused by Endowed Periodicals



LIST OF ENDOWED PERIODICALS

JOURNAL TITLE	ENDOWED BY
Developmental Medicine and Child Neurology	Mrs. Alex. Comfort, in memory of Dame Eileen Younghusband D.B.E., J.P.
European Journal of Clinical Pharmacology	Lilly Industries
Gut	Dr. A.H. James
Human Nutrition - Applied Nutrition	Mars Health Education Fund
Human Nutrition - Clinical Nutrition	Mars Health Education Fund
Immunology Today	Mr. N. Asherson
International Archives of Occupational and Environmental Health	Dr. E. T. Ruston
Journal of Investigative Dermatology	Stiefel Laboratories (UK) Limited
Journal of Laryngology and Otology	Mr. N. Asherson
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British Journal of Surgery	Henry Blacow Yates
Bulletin of the History of Medicine	Dr. A.S. Thorley
Cardiology	Florence Jackson Legacy
Cardiovascular Research	Florence Jackson Legacy
Caries Research	Mars Health Education Fund
Clinical Materials	Porter Nash Limited
Clinics in Developmental Medicine	Mrs Alex. Comfort, in memory of Dame Eileen Younghusband D.B.E., J.P.

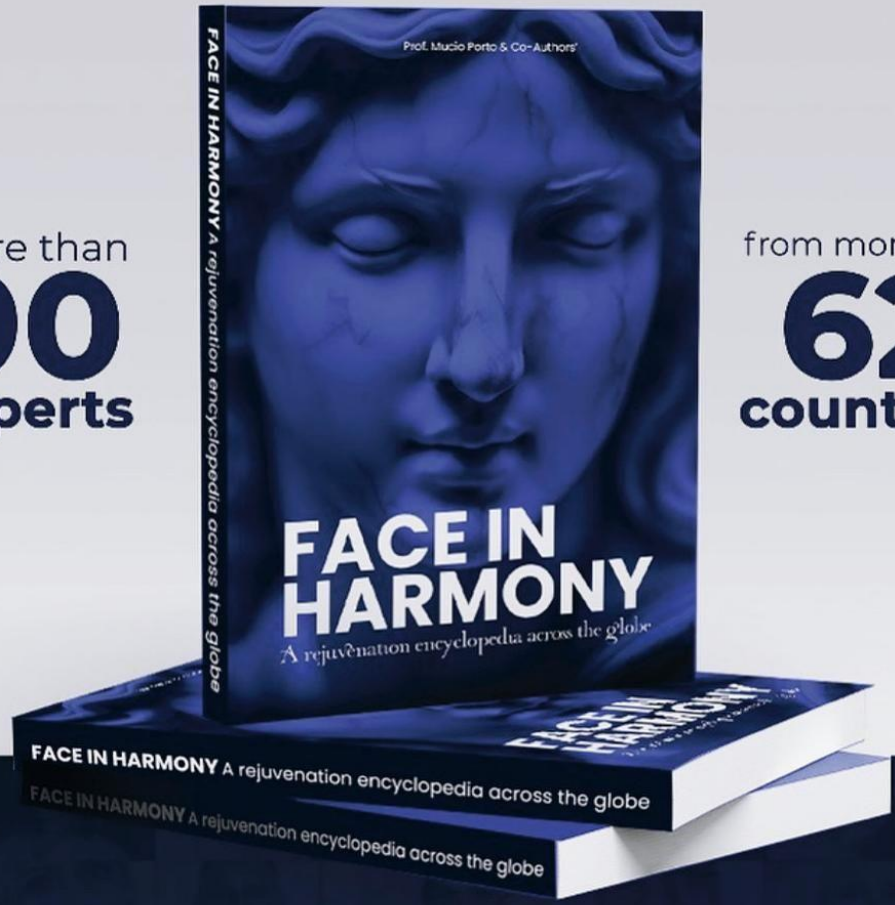
Endowed scientific periodicals, while often seen as a mark of quality, still require critical evaluation for objectivity. Their funding structure, while providing financial stability, can potentially influence editorial decisions and the types of research published. Objectivity in scientific publications means presenting facts and evidence without bias, which can be a challenge for any publication, regardless of funding

FACE IN HARMONY

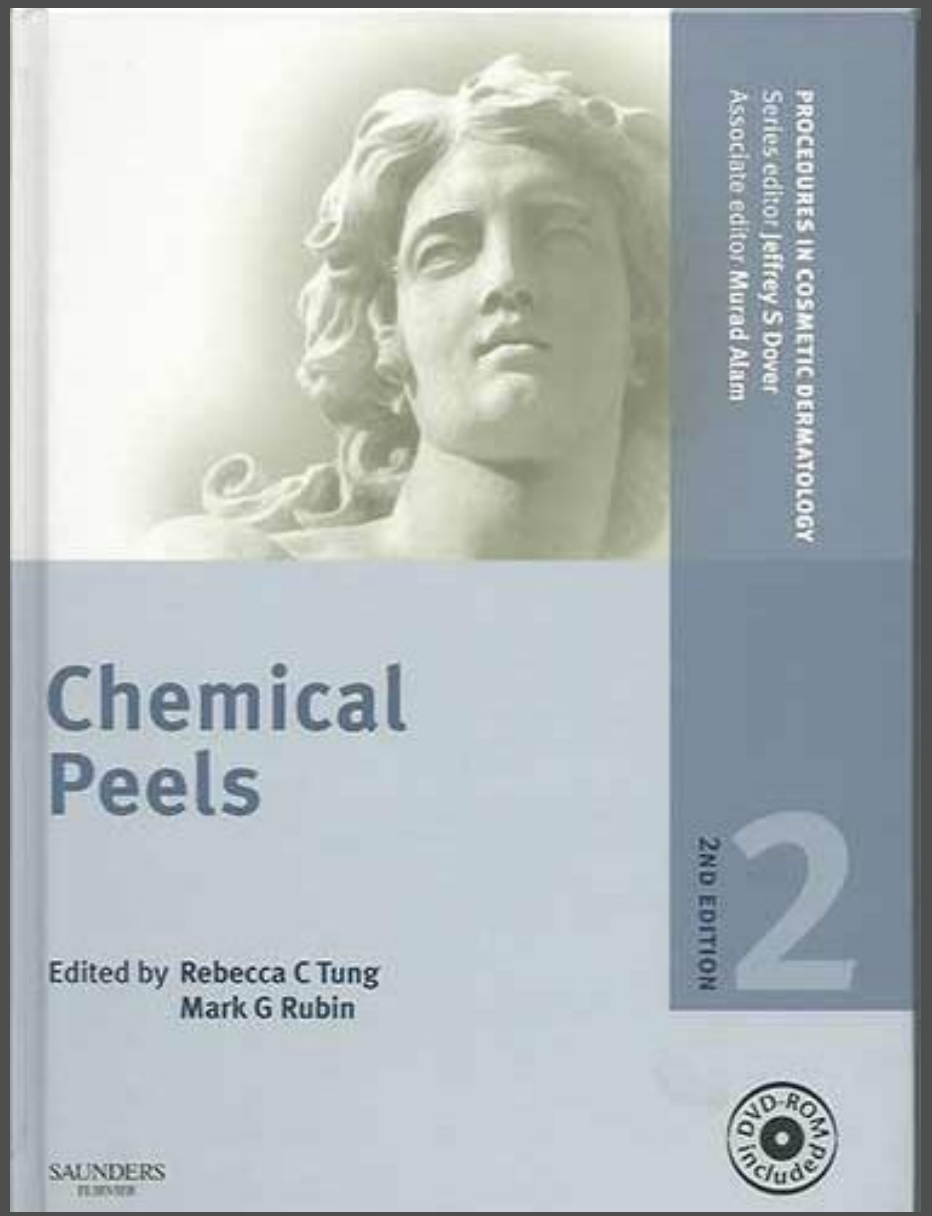
A rejuvenation encyclopedia across the globe

more than **90** **experts**

from more than **62** **countries**



More than 1000 pages of studies, knowledge and Techniques on Facial Rejuvenation across the globe


PROCEDURES IN COSMETIC DERMATOLOGY
Series editor Jeffrey S Dover
Associate editor Murad Alam
Chemical Peels
2ND EDITION
2
Edited by Rebecca C Tung
Mark G Rubin
DVD-ROM included
SAUNDERS


DERMATOLOGÍA ESTÉTICA
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Exfoliación química
2.ª EDICIÓN
Editado por Rebecca C. Tung
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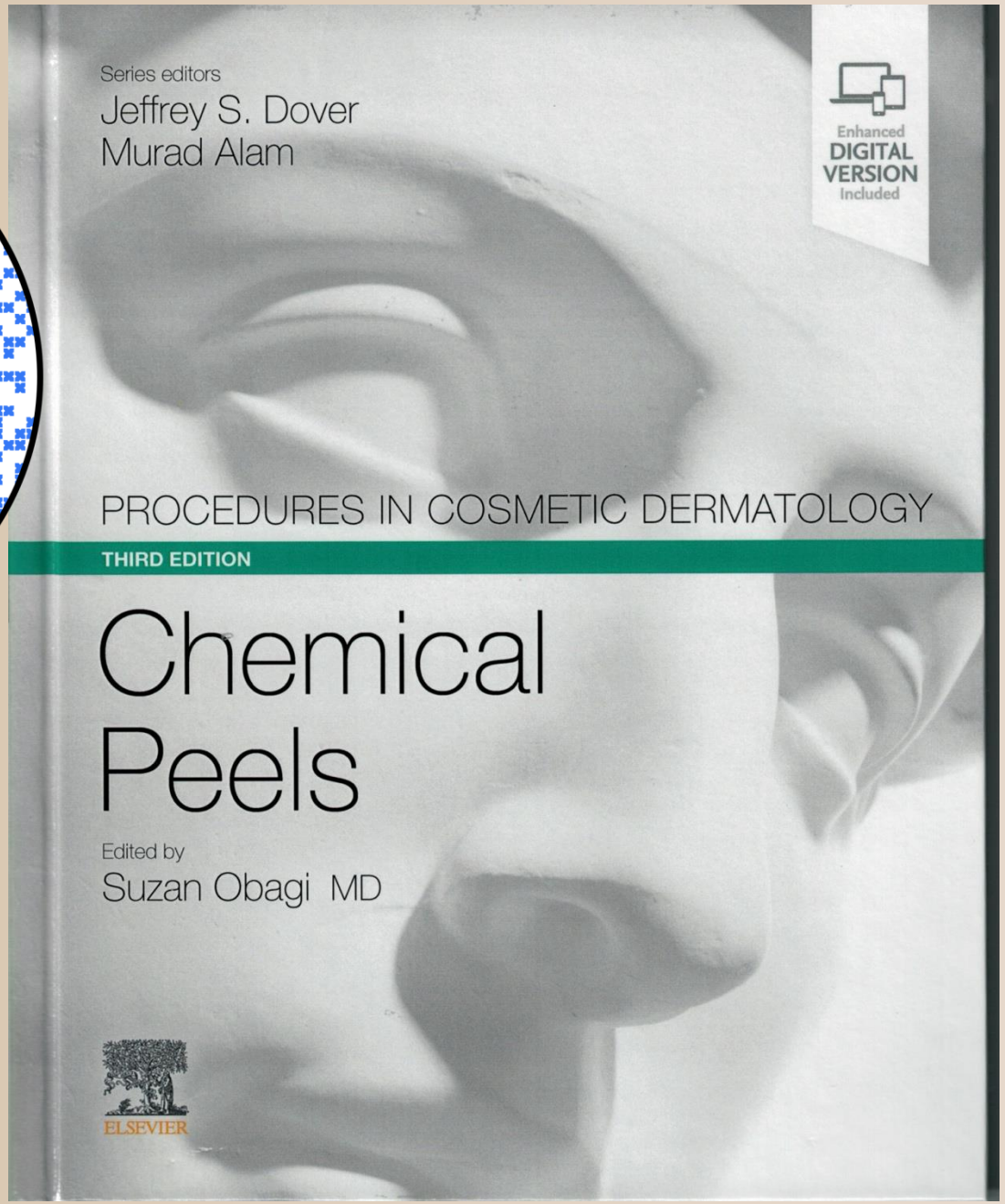
ELSEVIER SAUNDERS
incluye DVD-ROM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Murad Alam
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Included
PROCEDURES IN COSMETIC DERMATOLOGY
THIRD EDITION
Chemical
Peels
Edited by
Suzan Obagi MD
ELSEVIER

Why Perform Chemical Peels?

Peelings IMPROVE results of surgery, as non invasive procedures

Peelings make you different from other colleagues thinking just to do invasive, mini invasive, or non invasive treatments

Peelings will bring you more patients

Patients judge us on their outlook.

TO WAKE UP YOUR INTEREST

Peels Gallery

Take a Look
My personal case

I am not better , may be not so good as other surgeons in surgical procedures

But I can compete with other colleagues for my post surgical results thanks to Peelings

Surgical Rhinoplasty + Metabolic Peels

BEFORE

AFTER

Courtesy of Dr.Alain Tenenbaum

Surgical Rhinoplasty + Metabolic Peels

BEFORE

AFTER

Courtesy of Dr.Alain Tenenbaum

Lipoplasty + Facelift + Blepharoplasty + Endopeel + Metabolic Peels

BEFORE

AFTER

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Lipoplasty + Facelift + Blepharoplasty + Endopeel + Metabolic Peels

BEFORE

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Courtesy of Dr.Alain Tenenbaum

Facelift + Blepharoplasty + Endopeel + Metabolic Peels

BEFORE

AFTER

Courtesy of Dr.Alain Tenenbaum

Why Chemical Peels Must Be Reconsidered Today

Historical Paradigm	Current Limitation	Emerging Question
Chemical peels historically defined by: -acid type, -concentration, and -depth	Visible reaction (erythema, desquamation) often mistaken for therapeutic efficacy	Does visible tissue injury truly reflect biological skin improvement?

For decades, we have evaluated peels by what we can see on the surface.
Today, the question is whether visible damage is still a valid marker of efficacy.

IMPORTANT TO KNOW
BOTH ARE PEELS
COMBINATION IS POSSIBLE

peel-off-flake-off
NO DESQUAMATION

DO'S

Emerging paradigm
NO COMPLICATION

SLOUGH OFF
WITH DESQUAMATION

DON'TS

Traditional paradigm
HUGE RISK OF COMPLICATIONS

From Chemical Injury to Biological Regulation

Traditional Paradigm

- Chemical aggression
- Tissue injury
- Repair driven by inflammation
- Efficacy inferred from visible damage

Emerging Paradigm

- Biological signaling
- Metabolic adaptation
- Regulated inflammatory response
- Efficacy driven by cellular pathways

The skin does not improve because it is injured, but because it adapts biologically.

Historically, we relied on injury to trigger repair. Today, we understand that skin quality improves when biological regulation is restored, not when damage is maximized.

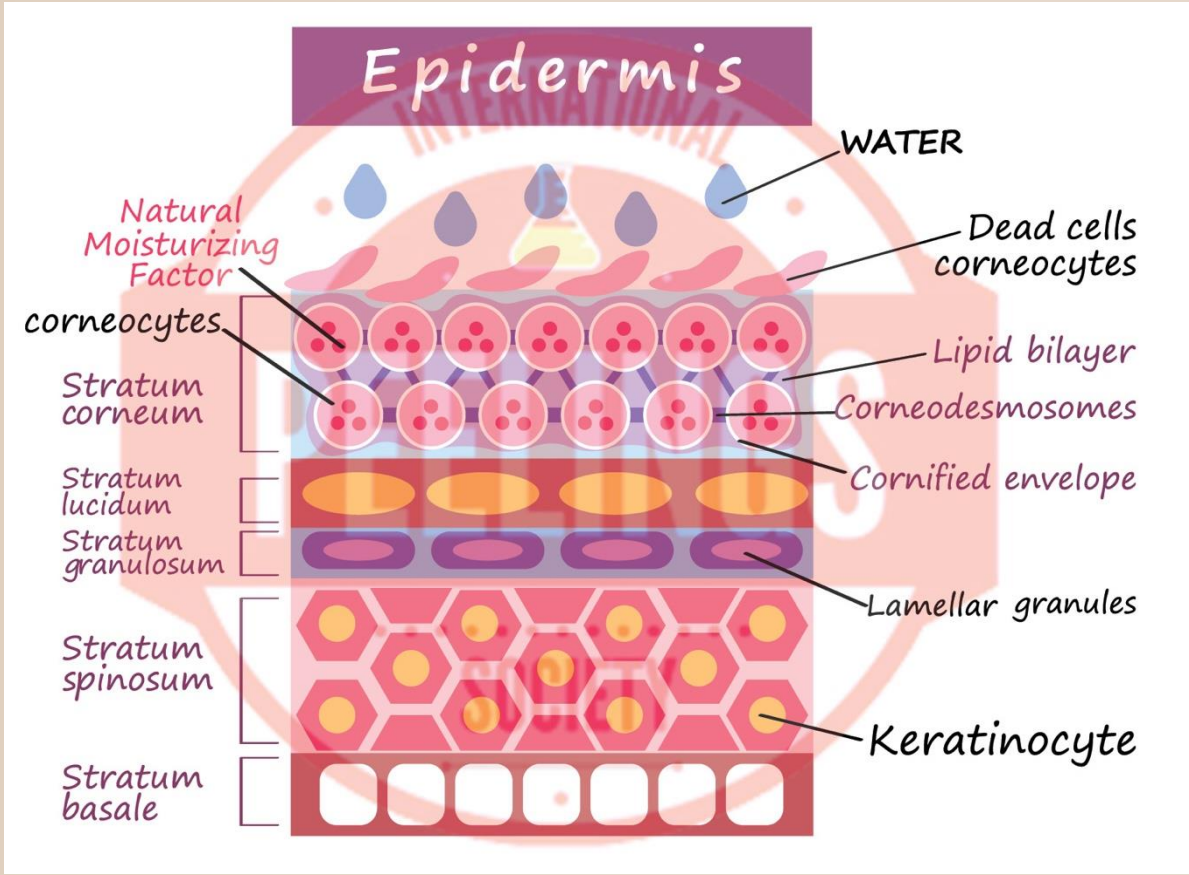
DESQUAMATION DAY = DANGEROUS DAY STOP SOCIAL EVICTION (DOWNTIME) WITH METABOLIC PEELS

No cohesion of corneocytes

Easy Penetration of chemicals Radiations etc

Damages following peelings procedures are mostly dued when patient is **at home** at the moment of desquamation

DESQUAMATION DAY = DANGEROUS DAY
ROLE OF CORNEOCYTES



DESQUAMATION DAY RECOMMENDATIONS

- No tap water, no mineral water for the skin
- Do not use alcohol or alcohol-based creams (like many sunscreens)
- Do not use hydroalcoholic solutions
- Do not use creams that contain metal ions (tattoo vs hyperchromia).

DO'S

DESQUAMATION DAY
USE ONLY
DEMINERALIZED WATER

Two Distinct Concepts: Do Not Confuse Them

Metabolic Pathways

biological

- Endogenous biological processes
- Cellular energy regulation
- Signaling cascades
- Inflammatory modulation
- Tissue adaptation

Acidic Agents

chemical

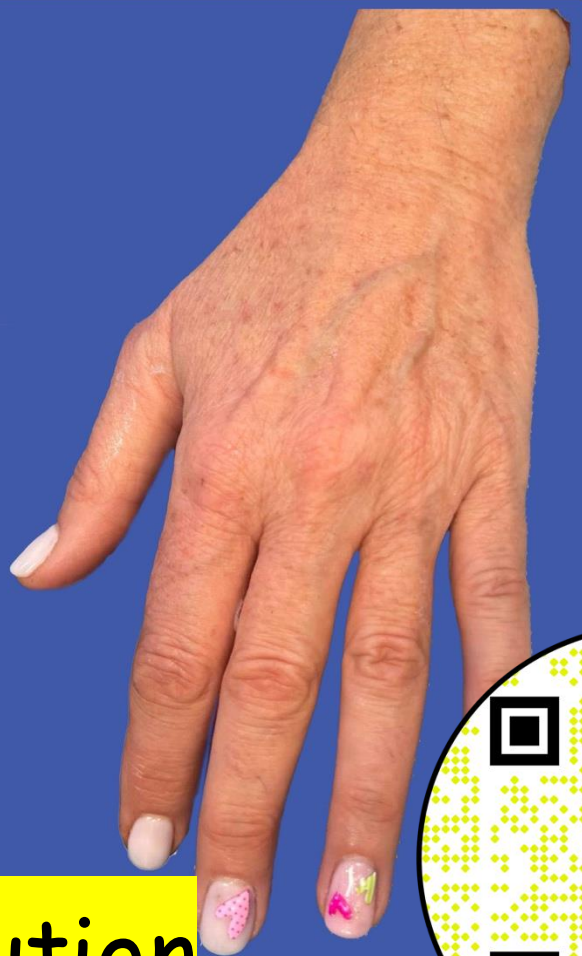
- Exogenous chemical compounds
- Defined by pKa and formulation
- Encapsulated AHA
- True retinoic acid
- Delivery systems

Metabolism is a biological response — not a property of an acid.

Hands Immediate Rejuvenation Using 30 Min Peel Off

BEFORE

AFTER 45 MIN

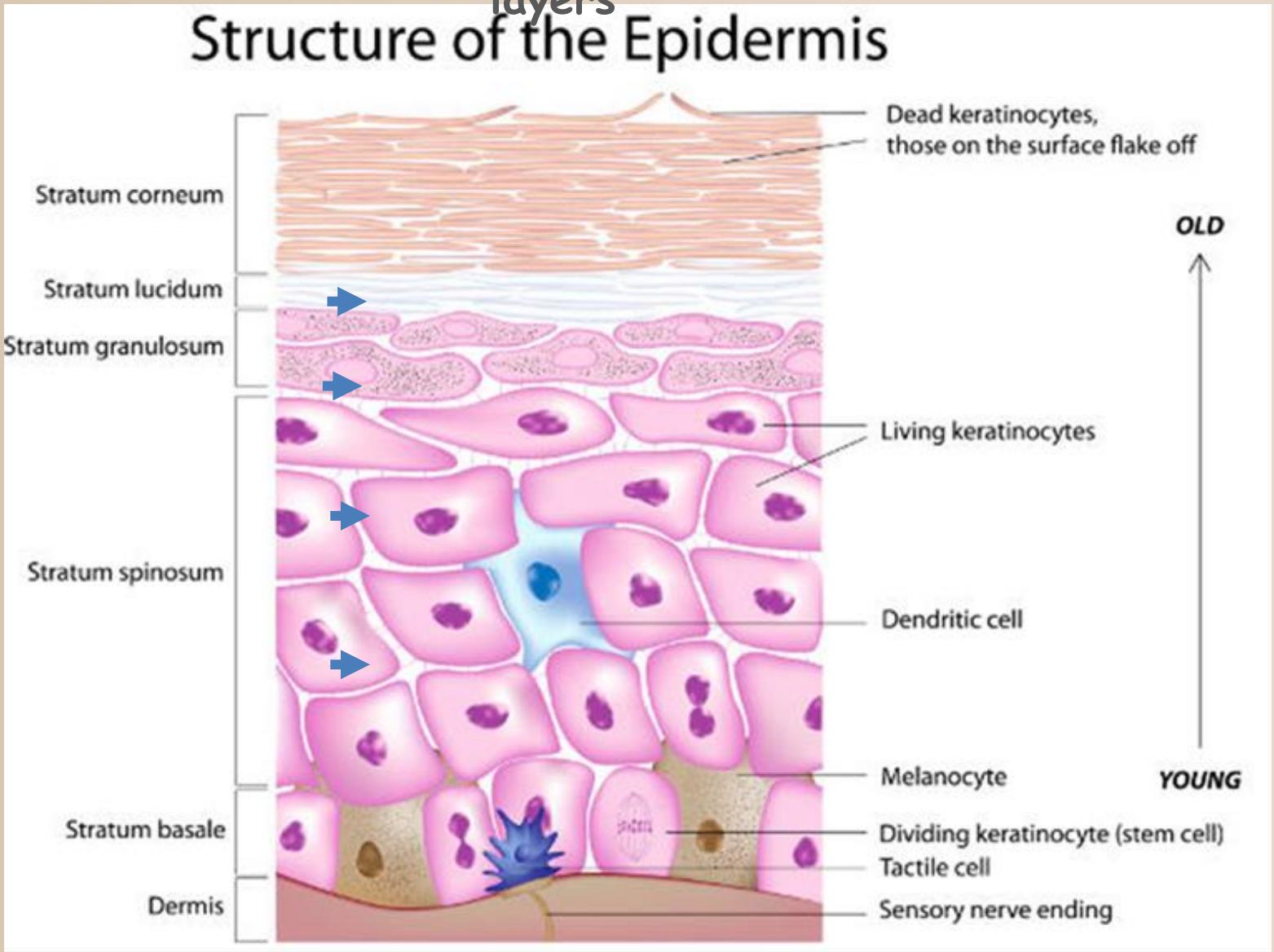


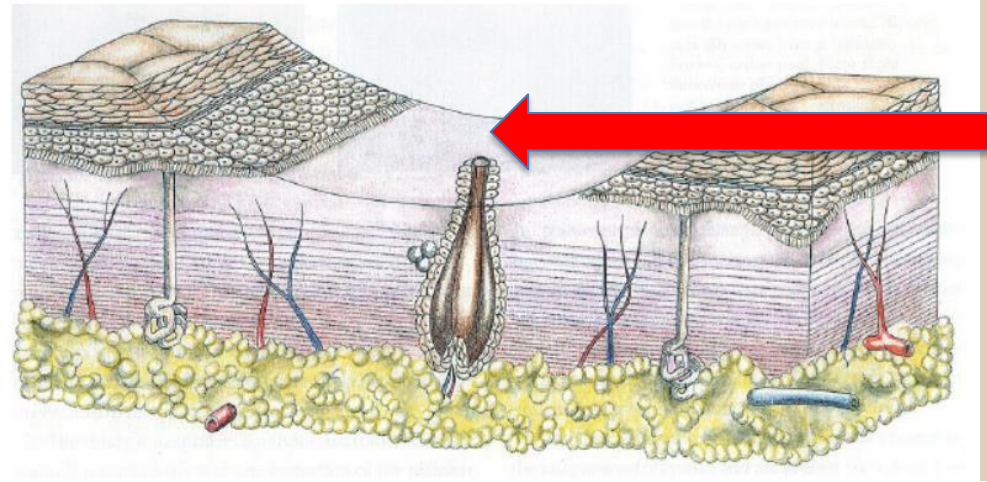
Metabolic Solution

Courtesy of Mauro Tiziani

EPIDERMIS HISTOLOGY

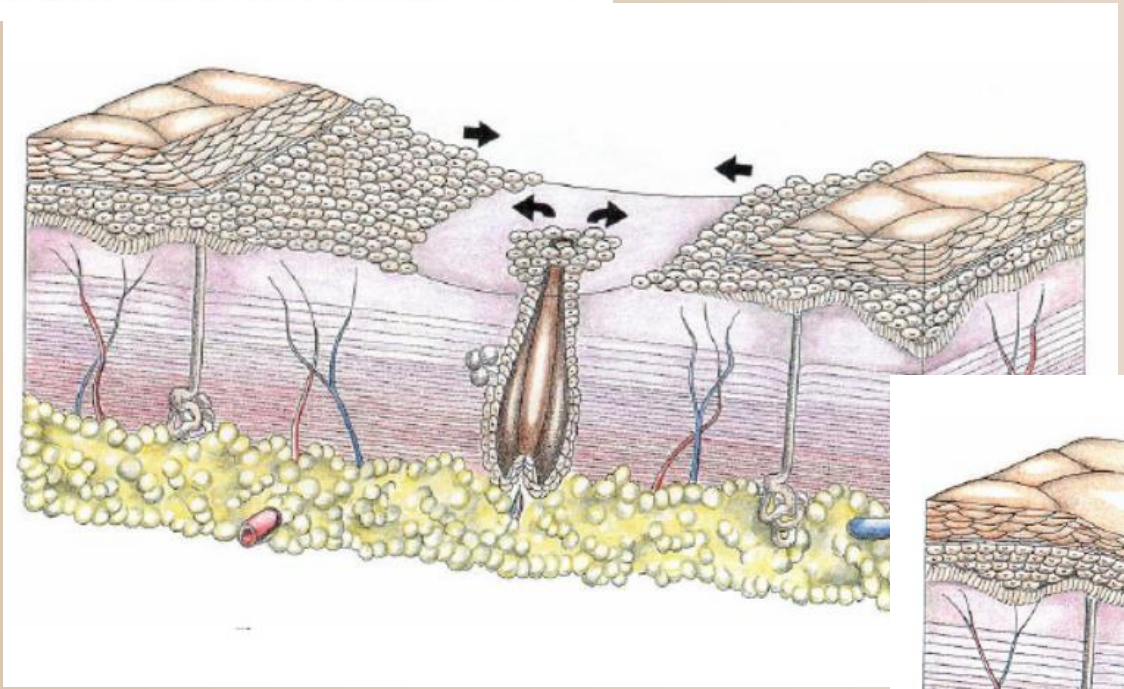
Most of the cells in the epidermis are keratinocytes, which are organized into 4 layers





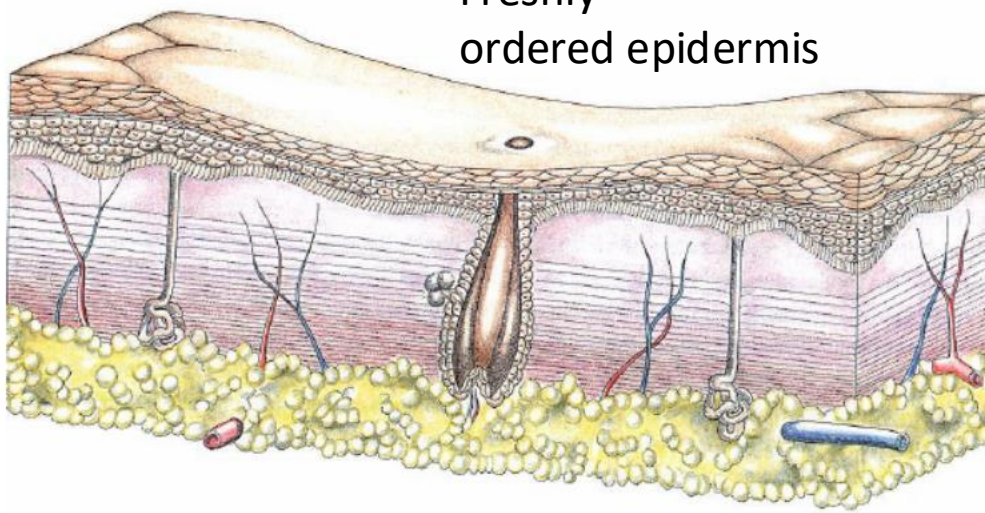
Acid-Induced Skin Reaction

Burn of the epidermis and superficial dermis



Skin reparation after 2 to 5 days after the chemical burn provoked by the peel

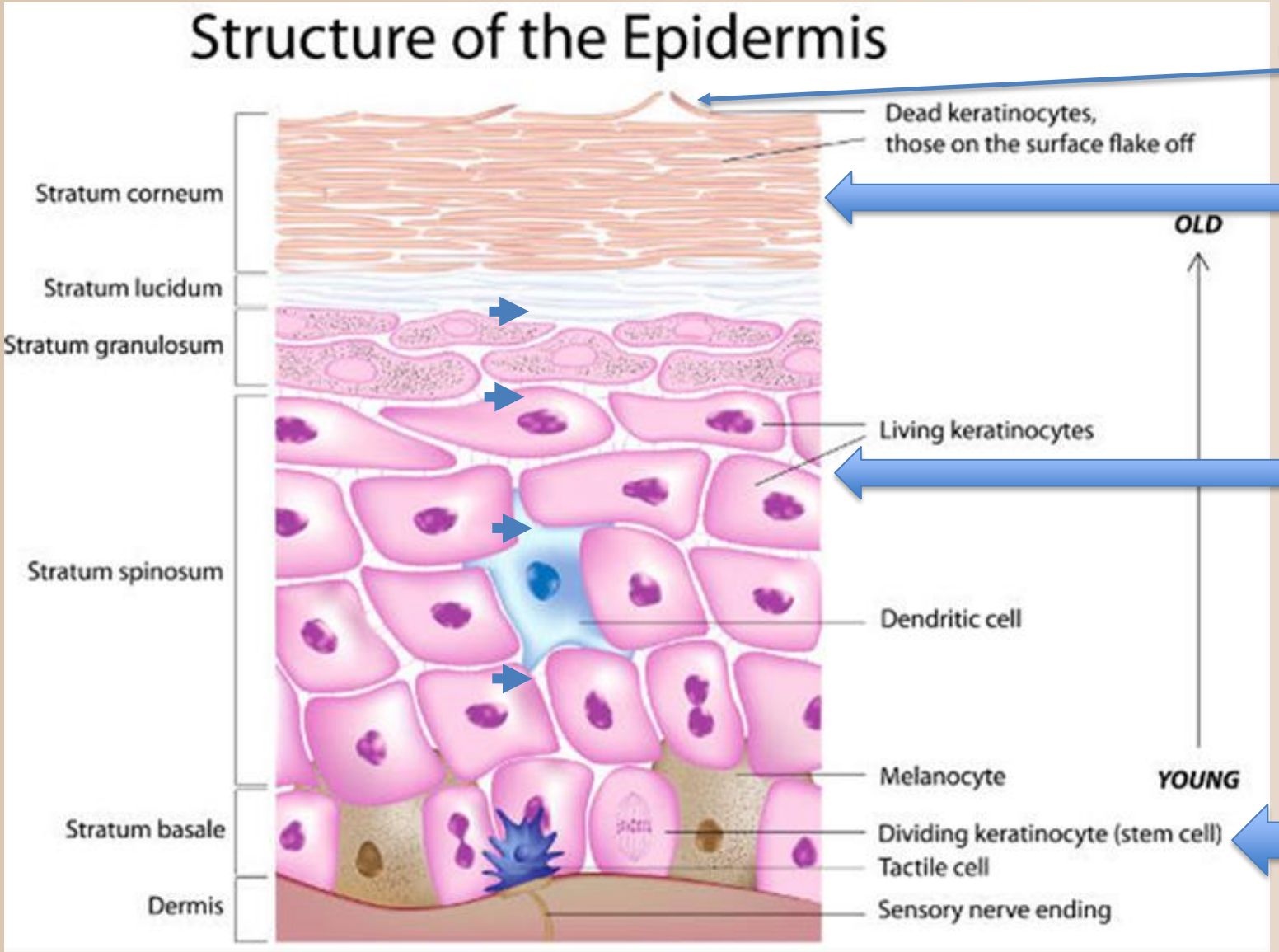
Freshly ordered epidermis



HISTORICAL PARADIGM

EPIDERMIS & KERATINOCYTES

Most of the cells in the epidermis are **keratinocytes**, which are organized into **4 layers**



EPIDERMIS

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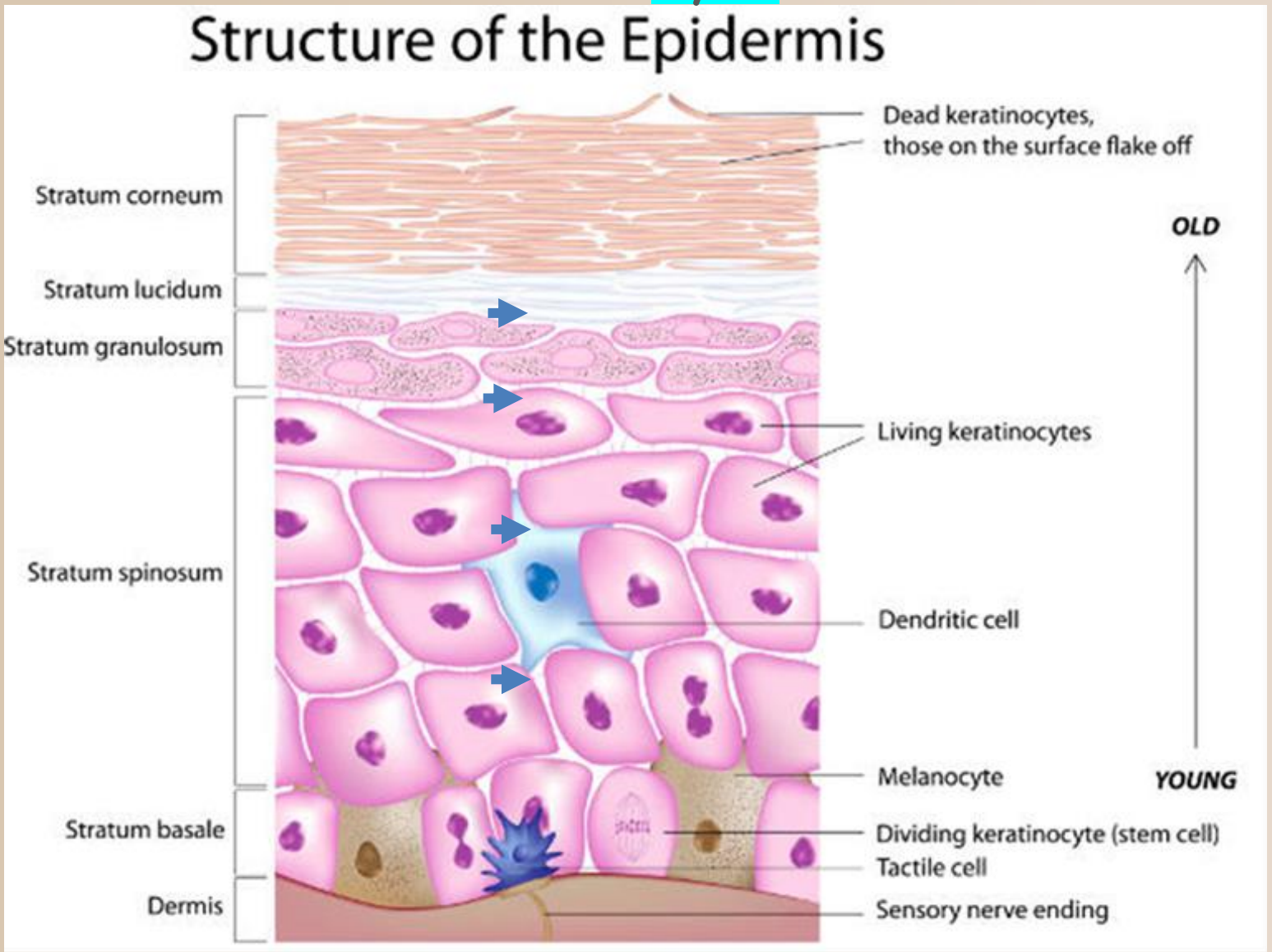


30 MIN peel-off

OTHER Peels

Acids Are Tools — Metabolism Is the Target

Acids

- External tools
- Defined by chemistry
- Act through delivery and formulation

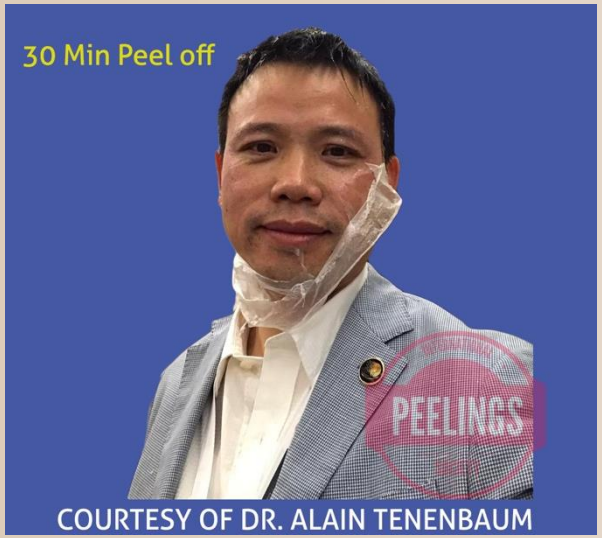
Chemical agents trigger. → Biological pathways respond.

Metabolism

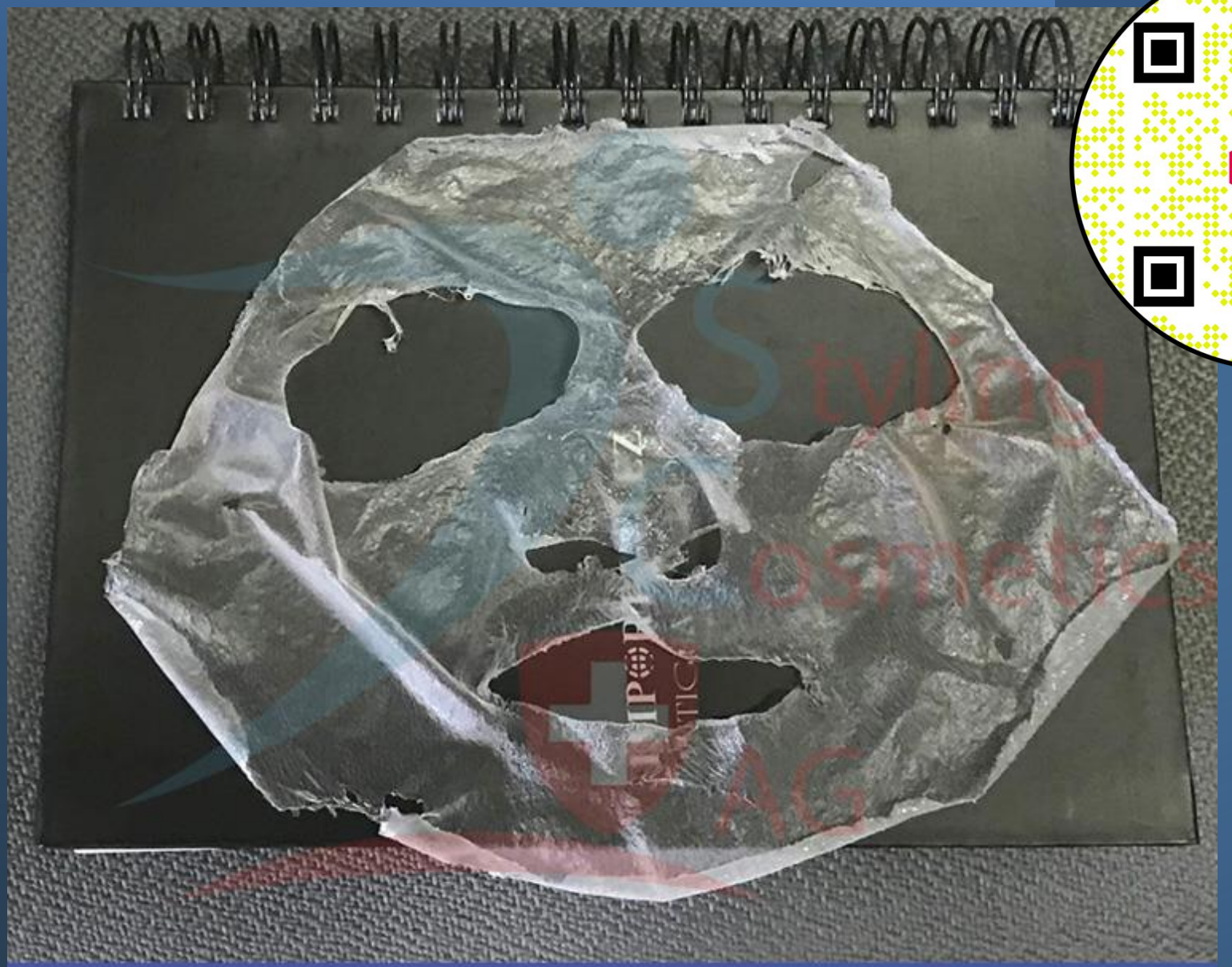
- Endogenous biological system
- Determines cellular response
- Defines clinical efficacy

PEEL OFF-FLAKE OFF

VALID FOR ALL SKIN TYPES AT ANY TIME OF THE YEAR




30 MIN PEEL OFF : REMOVE IT FROM TOP TO DOWN



30 MIN PEEL OFF : FULL MASK REMOVED


30 MIN PEEL OFF : BLACK POINT REMOVED

Clinical Protocol Logic

Correction • Stabilization • Maintenance

CORRECTION

Clinical objective:
Treat active pathological or functional skin disorders

- Structural damage
- Dyschromias
- Acne, scars, inflammation

Role:
Active corrective agents only

STABILIZATION

Clinical objective:
Consolidate results and restore skin balance

- Barrier recovery
- Inflammation control
- Pigment regulation

Role:
Functional regulators and buffers

MAINTENANCE

Clinical objective:
Maintain results and prevent recurrence

- Long-term skin balance
- Anti-aging preservation
- Home-care continuity

Role:
Supportive and preventive agents

Products are not interchangeable — they are selected according to their role within the protocol.

Protocol-Oriented Product Mapping

Each clinical protocol requires a sequence of dedicated products

CORRECTION PHASE

Targeted corrective products acting directly on the pathology

- Structural damage
- Dyschromias
- Acne, scars, inflammation

Clinical goal:
Active correction

STABILIZATION PHASE

Regulatory and buffering products to consolidate results

- Barrier recovery
- Inflammation control
- Pigment regulation

Clinical goal:
Result stabilization

MAINTENANCE PHASE

Supportive and preventive products for long-term control

- Skin balance preservation
- Anti-aging maintenance
- Home-care continuity

Clinical goal:
Prevention of recurrence

The protocol — not the product — is the clinical decision unit.

1.CORRECTION-
2.MODULATION/STABILIZATION
3.MAINTENANCE

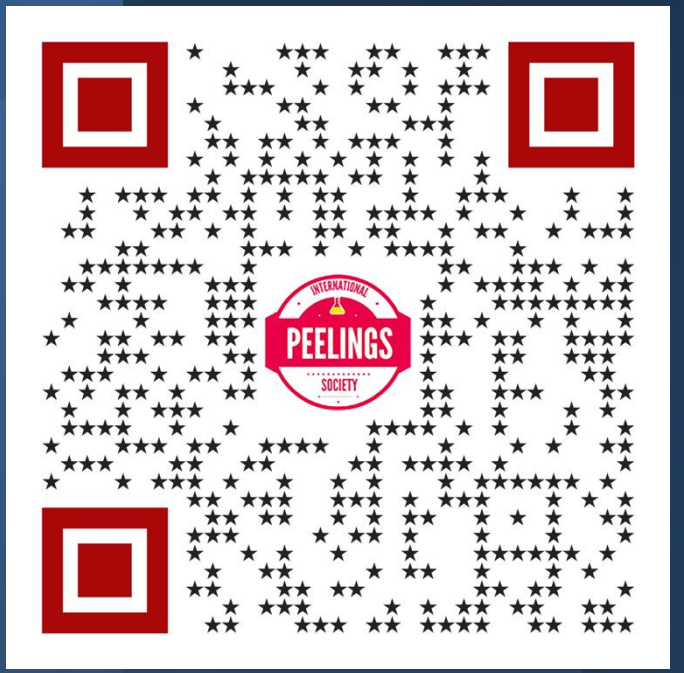
Take a look at
https://chemicalpeeling.com/main-protocols

MAIN INDICATIONS FOR PEELS FACE,BODY,HANDS,FEET & INTIME AREA

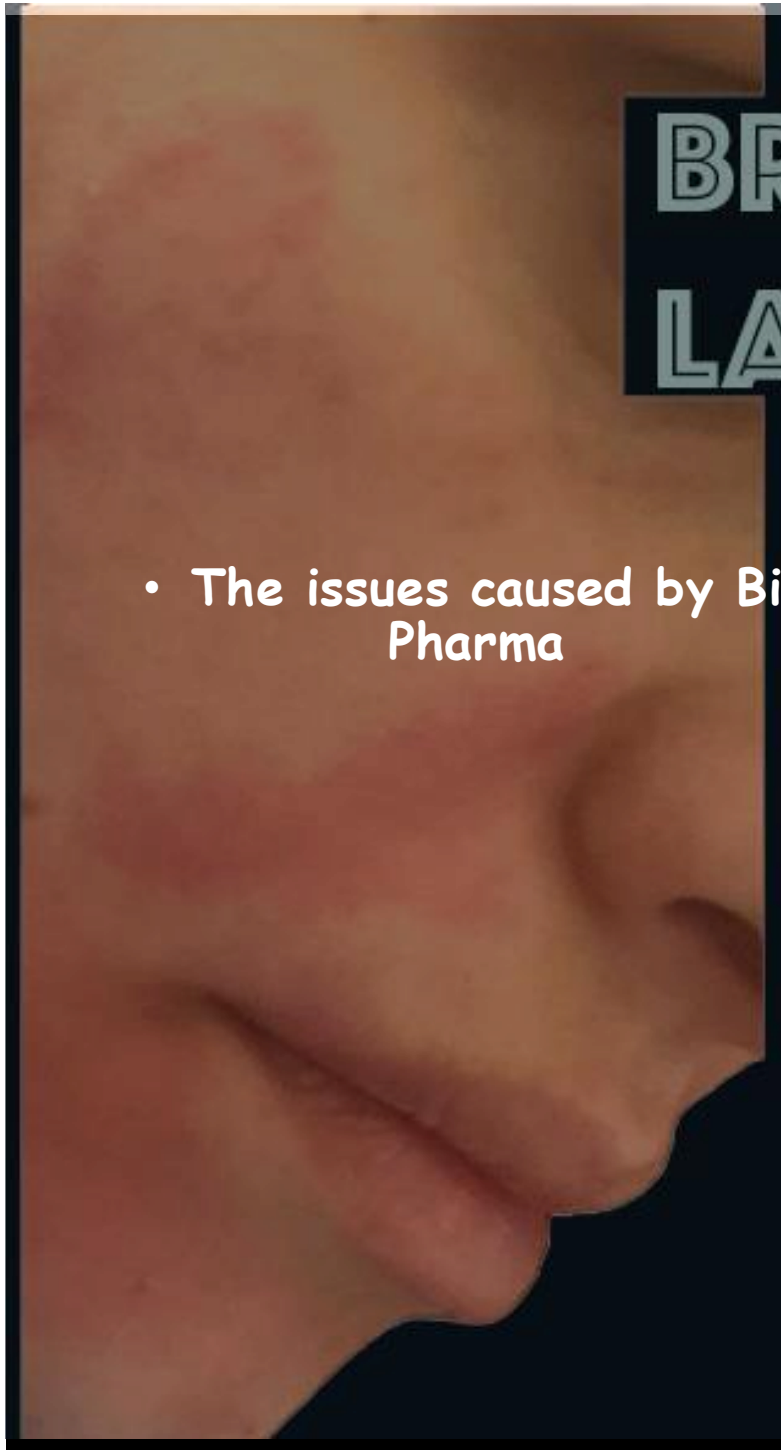
- Anti Aging
- Acne
- Depigmentation
- Remove dead cells
- Skin regeneration
- Bleaching-whitening
- To improve the texture and tone of the skin
- Restore brightness and radiance to smokers' skin
- Scar Improvement
- Improve results of surgery
- Treatment of Complications dued to other Peels treatment

See More *Indications* on

https://chemicalpeeling.com/clinical-indications



COMPLICATIONS



BRAND NAME LACTIC COMPLICATION

- The issues caused by Big Pharma

Complications
of Brand Names Peels
with Big Marketing &
Poor Chemistry Knowledge
(Spain,Uruguay,Ecuador,Argentina
Korea,China,Poland,Austria...)

VICTIMS OF COVID RESTRICTIONS

The issues caused by Bureaucrats.

CONTRA INDICATIONS

https://chemicalpeeling.com/contra-indications

Inflammation ≠ Efficacy

INFLAMMATION-DRIVEN THINKING

- **Underlying Assumption:**
  Greater inflammation leads to greater efficacy
- **Biological Mechanism:**
  - Chemical or physical injury
  - Acute inflammatory cascade activation
  - Cytokine and prostaglandin release
- **Clinical Consequences:**
  - Erythema, edema, pain
  - Barrier disruption
  - Increased risk of PIH and complications
  - Unpredictable clinical outcomes
- **Clinical Limitation:**
  - Efficacy depends on tissue damage intensity

FUNCTION-DRIVEN THINKING

- **Underlying Principle:**
  Clinical efficacy does not require inflammation
- **Biological Mechanism:**
  - Modulation of cellular metabolism
  - Regulation of signaling pathways
  - Controlled stimulation of renewal mechanisms
- **Clinical Consequences:**
  - Minimal or absent inflammation
  - Preserved barrier integrity
  - Higher safety and reproducibility
  - Improved patient compliance
- **Clinical Advantage:**
  - Efficacy achieved through functional regulation, not through inflammatory damage

Inflammation is a biological reaction to injury,
not a measure of therapeutic success.

LEARNING OBJECTIVES

- Which acids are dangerous and non-dangerous?
- Which acids are aggressive and not-aggressive?
- How to determine the penetration of an acid?
- Which parameters are variable and which are constant?
- What are the elements that distinguish one TCA from others?
- Do exist really deep, medium and superficial peels?
- How to treat complications of Peels? Why do they occur?
- What to avoid in a chemical peel treatment?
- Why do patients change their peeler?
- How to avoid a medico-legal case after exfoliation?
- Which classifications for chemical peels?
- What is the difference between physical, chemical, mechanical and thermodynamic peels?

From Chemistry to Biology:
What Really Determines Clinical Outcomes

Chemistry

- Describes molecular behavior
- Defines ionization and penetration
- Controls exposure and delivery

Biology

- Determines cellular response
  Modulates inflammation
- Drives tissue adaptation and renewal

Clinical outcome

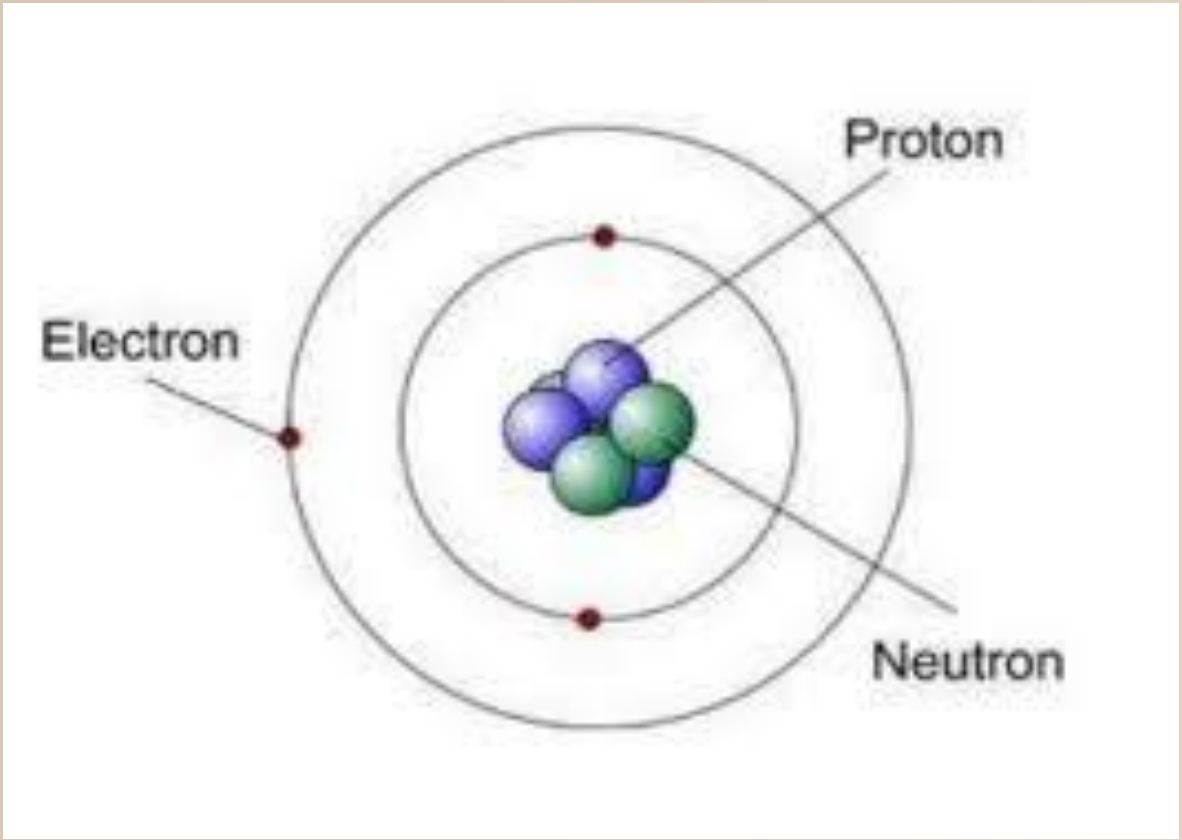
Emerges from biological regulation

Not from chemical strength alone

Not from visible injury

Chemistry initiates the stimulus.
Biology determines the result.

STRUCTURE OF ATOMS, MOLECULES IONS : ANIONS +CATIONS PROTONS AND NEUTRONS

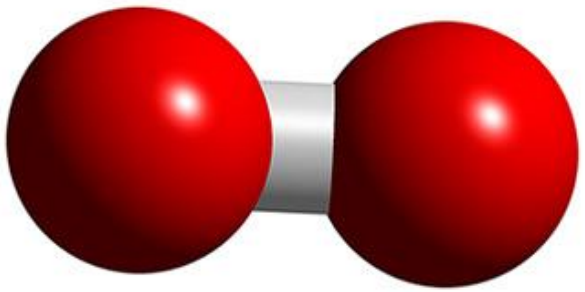


Atomic nucleus = protons + neutrons
Atomic shell = electrons

- Atoms are building blocks of matter.
- They consist of the atomic nucleus and the atomic shell.
- The atomic nucleus is composed of positively charged particles, the protons and the uncharged neutrons, which in turn consist of other elementary particles.

STRUCTURE OF MOLECULES

oxygen or O2



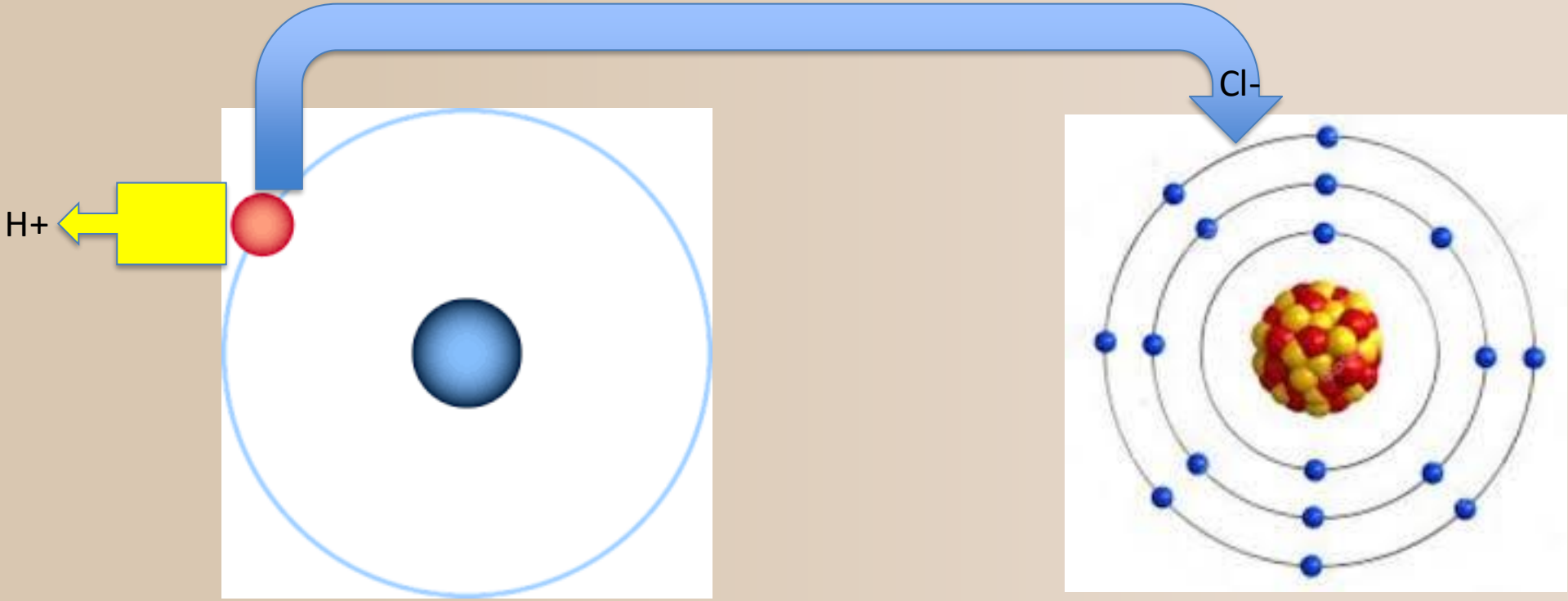
- Molecular structure or molecular geometry is the geometric, spatial relative arrangement of atoms in a molecule

Molecules > = 2 atoms together (A.Tenenbaum)

STRUCTURE OF IONS AND MOLECULES

ELECTRONS LOOSER = POSITIVE IONS = CATIONS

ELECTRONS WINNER =NEGATIVE IONS = ANIONS



HYDROGEN

H- e -> H+

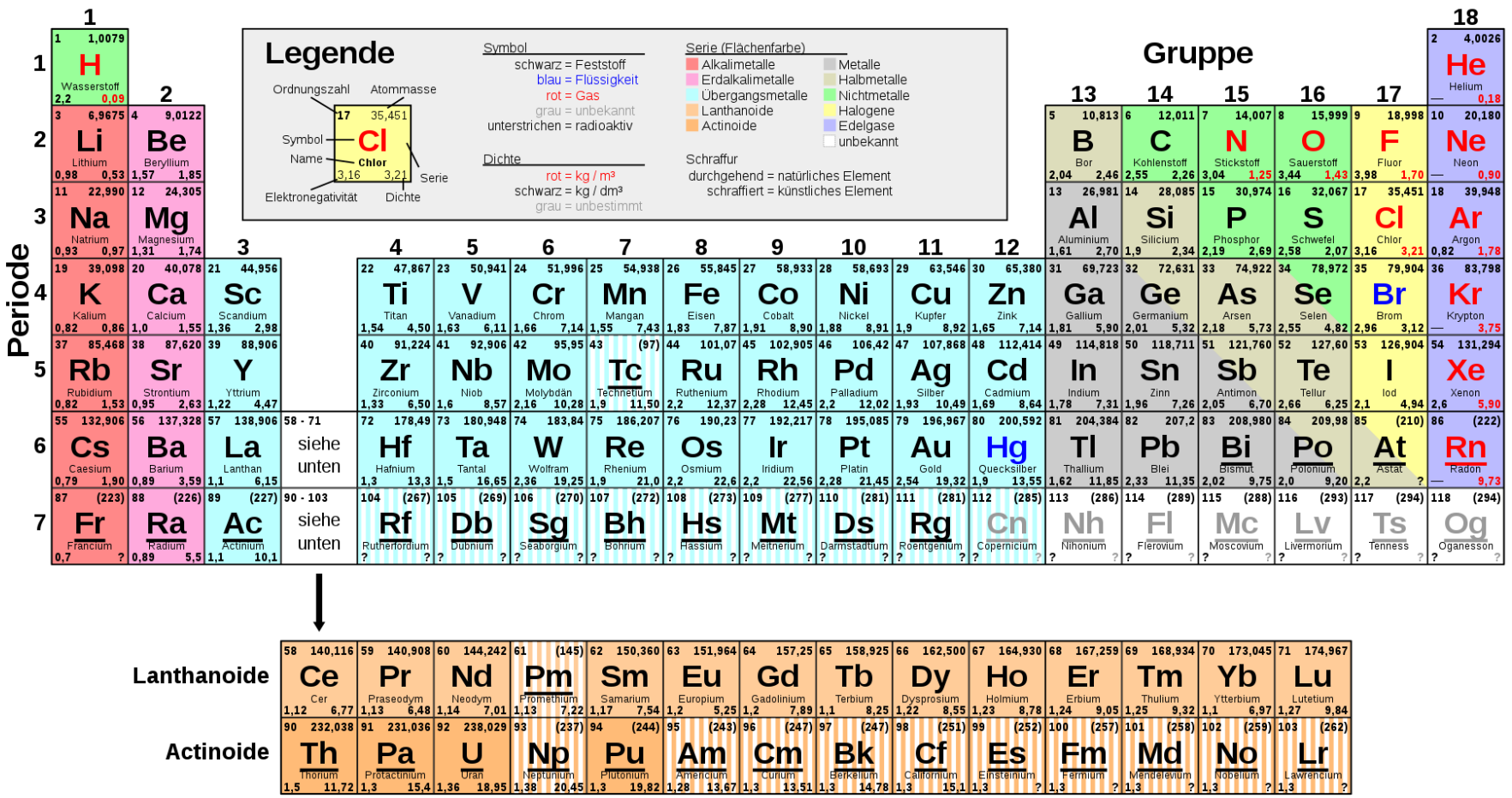
H+Cl-

HCl

CHLORINE

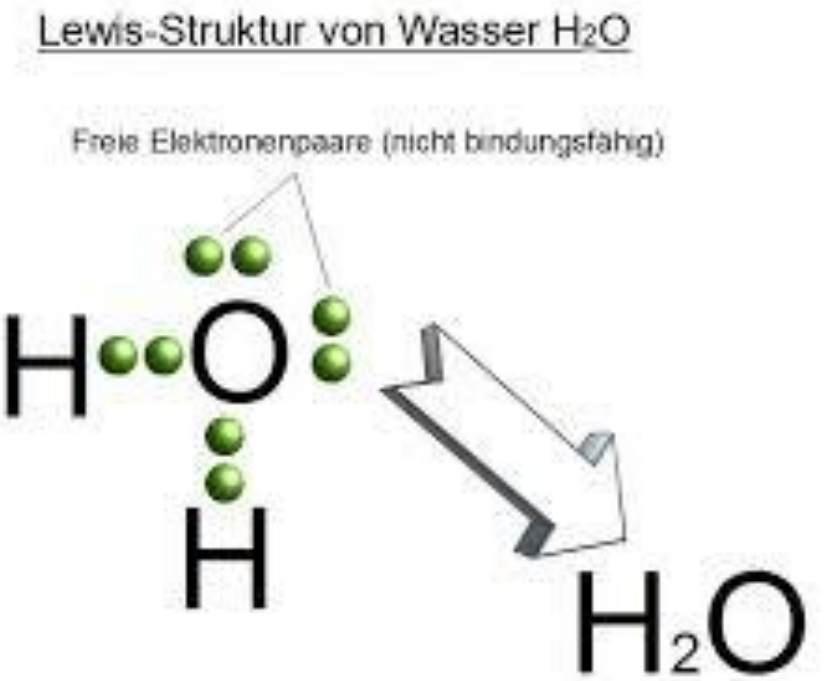
Cl + e -> Cl-

MENDELEEV'S PERIODIC TABLE



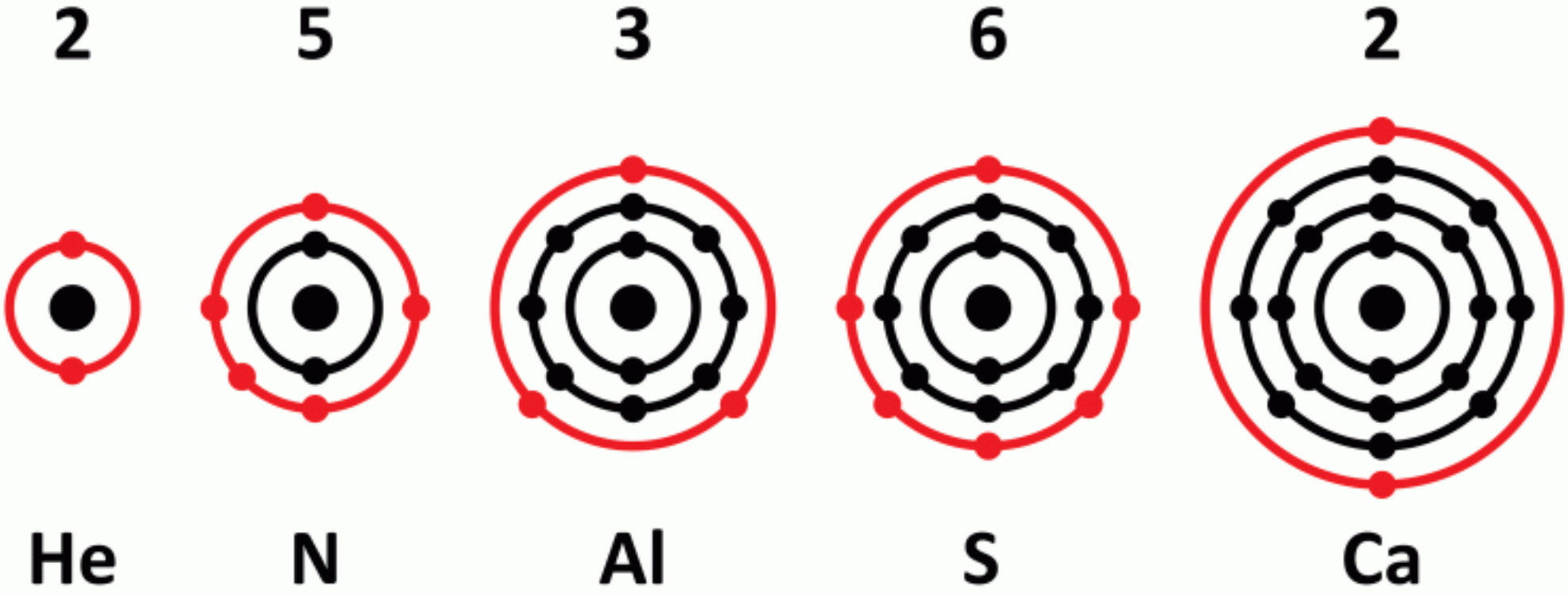
Binding and 2(nxn) covalence

- Atomic number Z
- H Z=1 1
- O Z=8 (2+6)



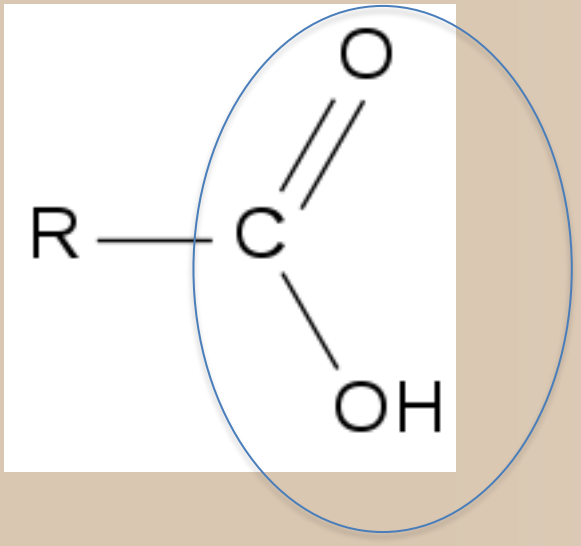
THE WATER H20

Anzahl der Valenzelektronen



Was uns interessiert	VALENZ	
C	4	vierwertig
H	1	einwertig
0	2	zweiwertig
Cl	1	einwertig

THE ACID FUNCTION



$$RH + H_2O \overset{K_a}{\leftrightarrow} R + H_3O^+$$

R = A- = Anion

H30+ = Cation

Ka = constant of dissociation of an acid in solution

pKa = - log(Ka)

$$R\text{-}COOH + H_2O \leftrightarrow R\text{-}COO^- + H_3O^+$$

H30+ = HYDRONIUM ION or acid ion

R-COO- = Anion

$$H^+ + H_2O \rightarrow H_3O^+$$

pH = -log(H30+)

PRACTICAL EXERCISE

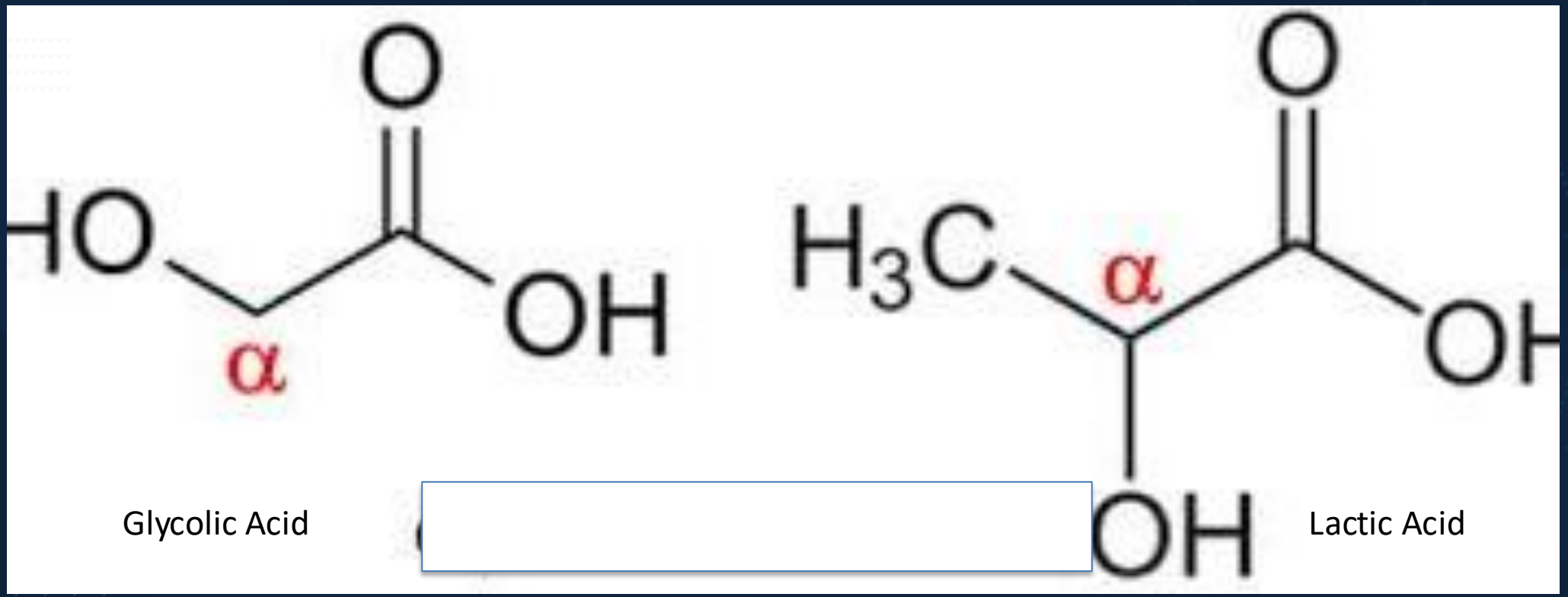
the acid function - COOH

- H20 Water
- Glycolic acid C2H403
- Lactic acid C3H603
- TCA Trichloroacetic acid C2Cl3H02
- Acetic acid C2H4O2

THE CATEGORY OF AHA OR ALPHA HYDROXY ACIDS

Glycolic acid and lactic acid
Fruit acids and alpha hydroxy acids (AHA)

- the hydroxy radical -OH
- Alpha carbon
- the acid function -COOH



Glycolic Acid

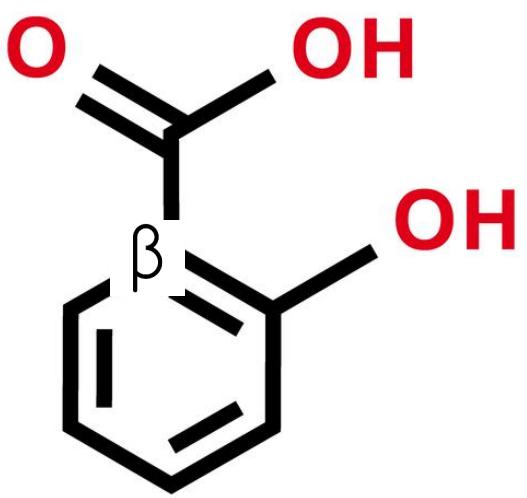
Lactic Acid

THE CATEGORY OF BHA OR BETA HYDROXY ACIDS

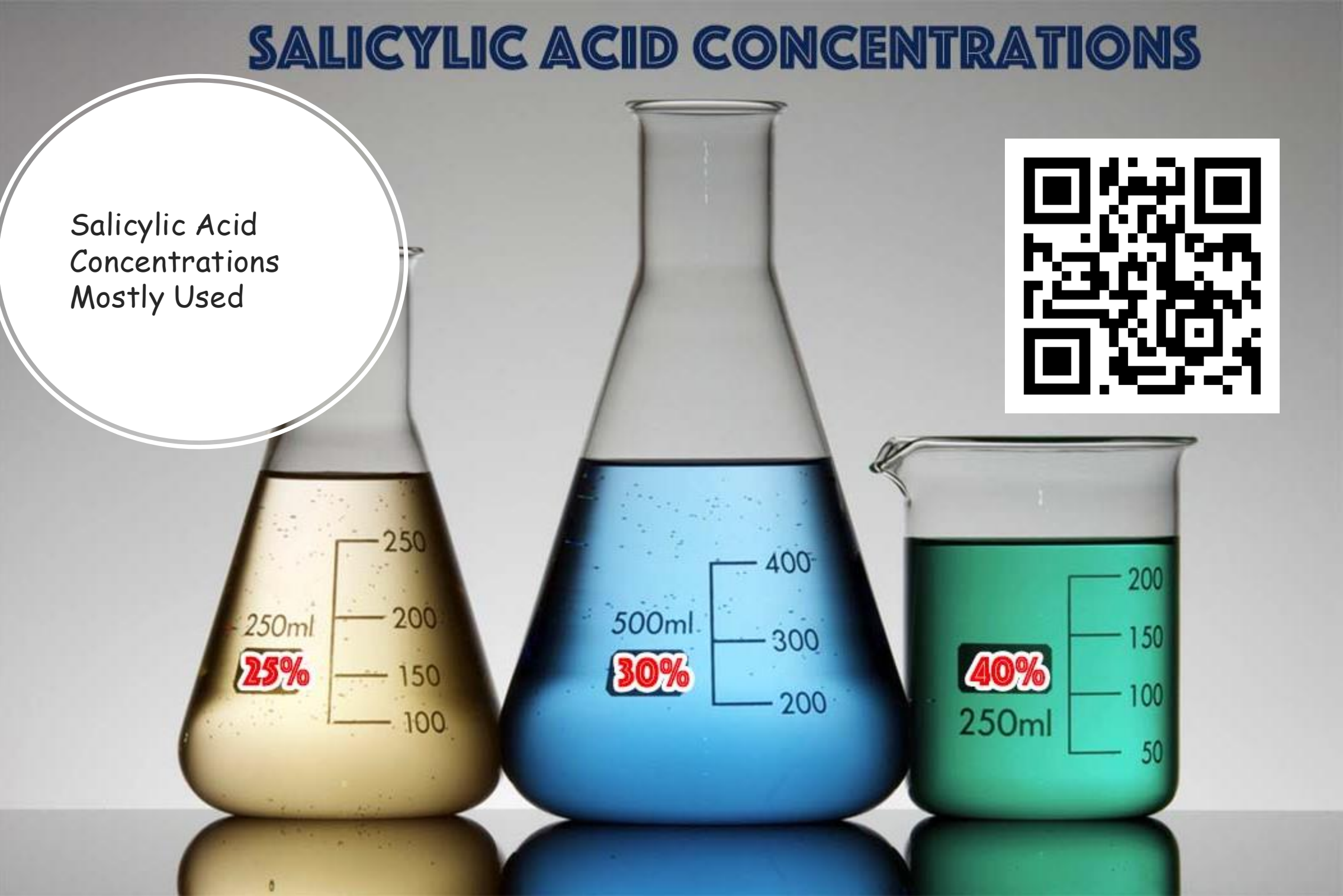
the hydroxy radical -OH

β Beta carbon

the acid function -COOH



SALICYLIC ACID


SALICYLIC ACID CONCENTRATIONS
Salicylic Acid
Concentrations
Mostly Used
250
200
150
100
250ml
25%
400
300
200
500ml
30%
200
150
100
50
40%
250ml

AHA vs. BHA: Solubility and Clinical Application

AHA

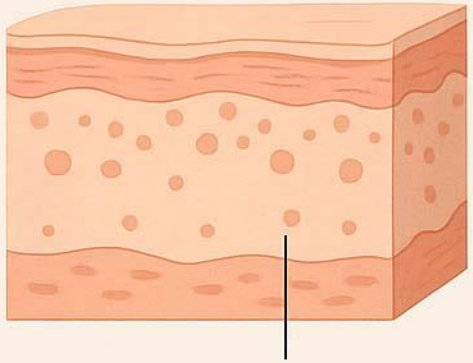
Alpha Hydroxy Acid

WATER-SOLUBLE

BHA

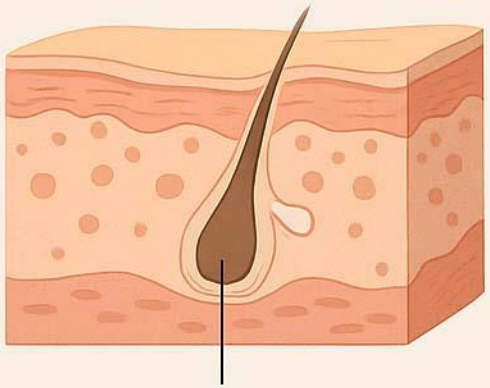
Beta Hydroxy Acid

OIL-SOLUBLE



Surface exfoliation

Dry, sun-damaged skin



Deeper into pores

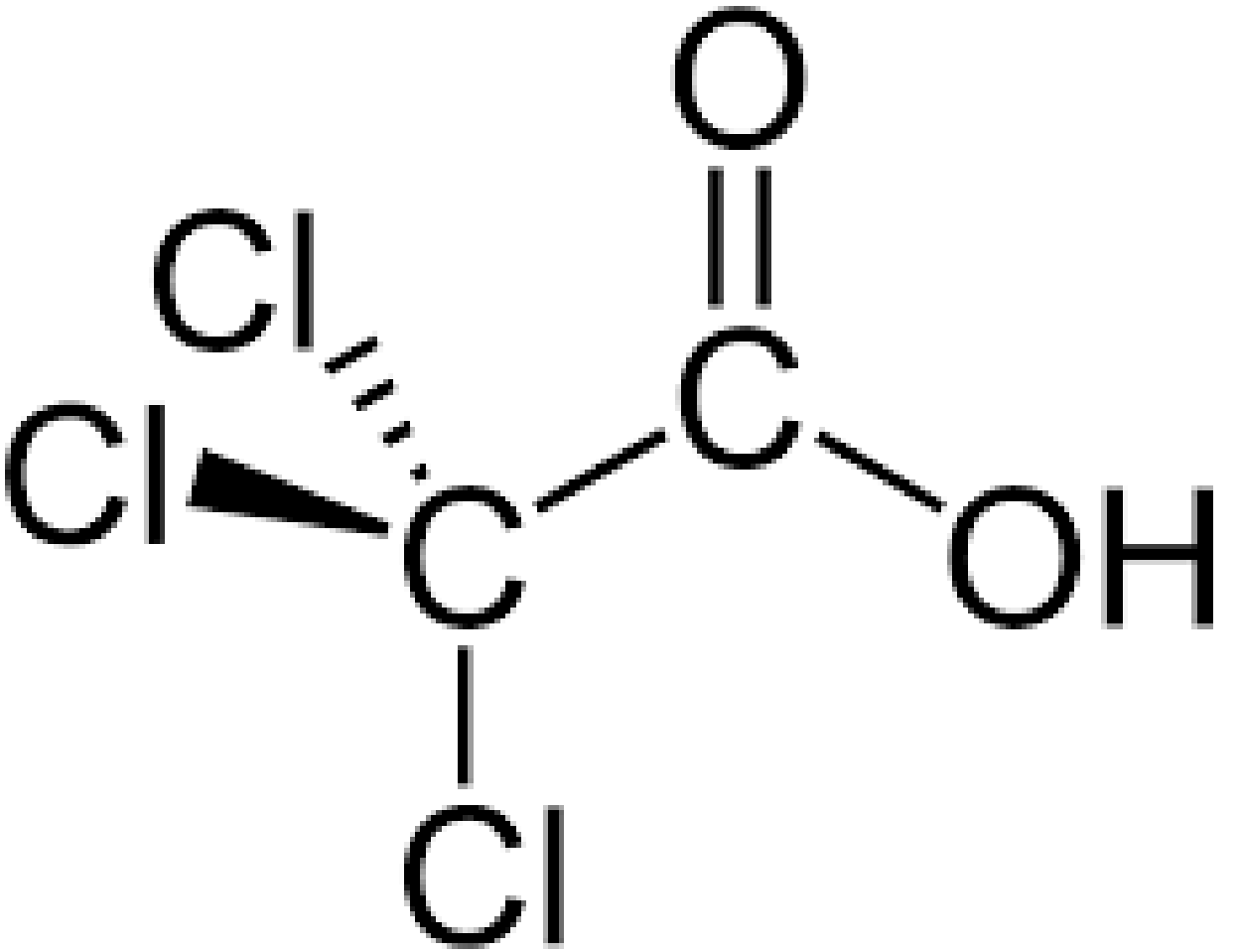
Acne-prone, oily skin

Comparison of AHA vs BHA

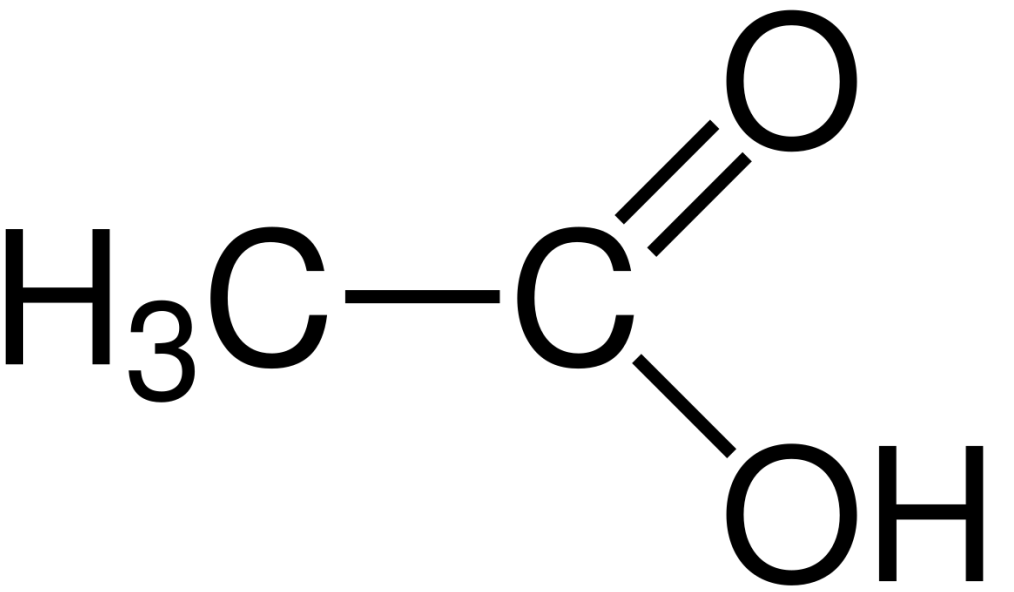
		AHA	BHA
1	Acid	• Citric Acid • Lactic Acid	Salicylic Acid
2	Solubility	Water Soluble	Oil Soluble
3	Target	Surface Exfoliation	Penetrates deeper into the Pores
4	Actions	• On Skin surface • Remove Skin Dead cells • Improve Texture • Hydrate the Skin (citric acid)	• Dissolve Sebum • Clear Clogged Pores • Reduce Inflammation • Comedolytic Properties
5	Effectiveness	• On Dry Skin • On Sun Damaged Skin • On Mature Skin	• On Acne Prone • On Oily Skin • On Black Heads
6	For Dark Skin Types		Better Tolerated


TOPOGRAPHICAL MAPPING OF
DRY AND OILY FACIAL SKIN
INTERNATIONAL
PEELINGS
SOCIETY
AHA
BHA
Courtesy of Dr.Alain TENENBAUM & Mauro TIZIANI

NOTE: TCA IS NEITHER AN AHA, NOR A BHA



Acetic acid is neither an AHA nor a BHA



DECIMAL LOGARITHMS PH & PKA

- Log 1 = 0
- Log 10 = 1
- log 100 = 2
- log 1000 = 3
- log 10000000 = 7

pH = - log (H+)
= -log (H30+)

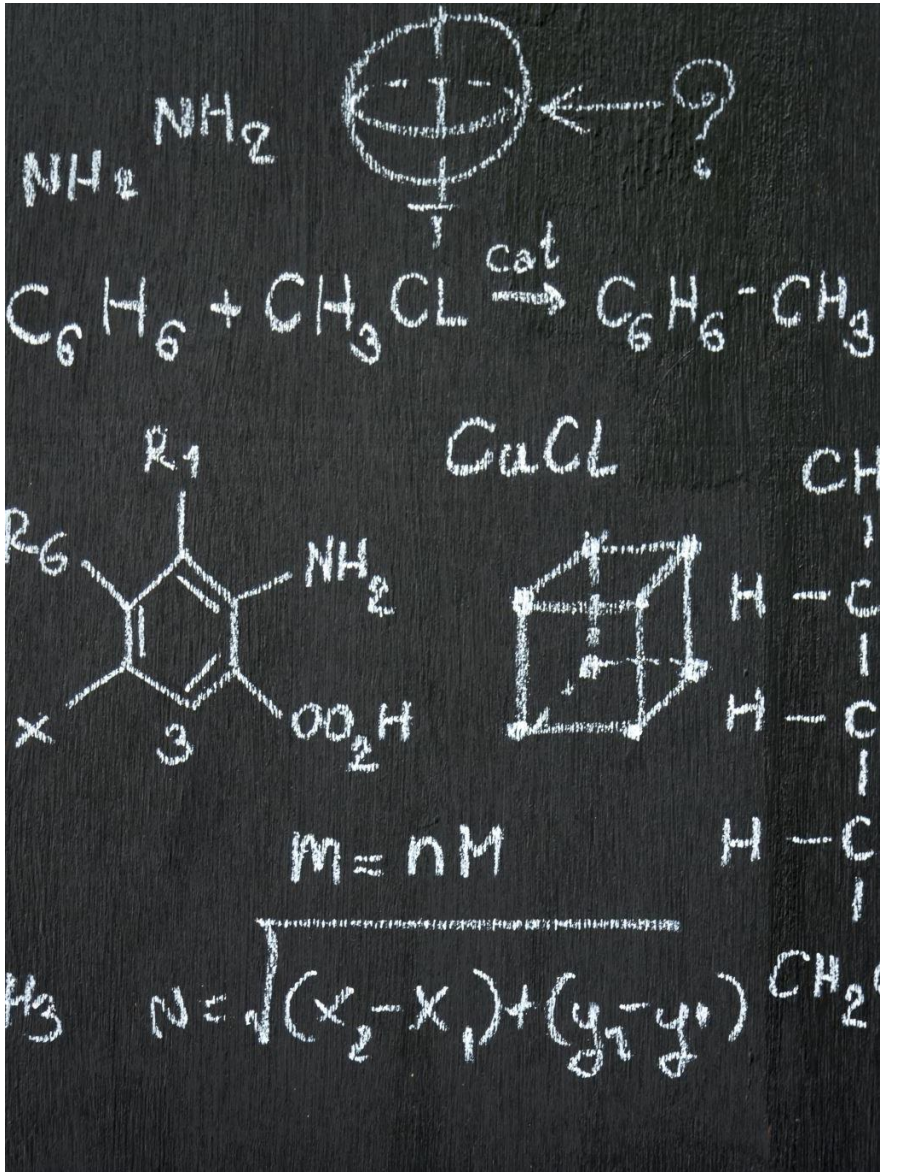
pKa = - log K

pH = -log (H30+)

UNIT OF CONCENTRATION OF AN ACID

MOL/L VS G/L

- *EXAMPLE* : HCl Chloric Acid
- Sum of atomic masses (Mendeleiev)
- H =1 Cl = 35 ie HCl = 36
- 1 mol HCl weighs 36g i.e.
- 0.1 mol weighs 3.6g
- HCl 0.1 mol/l = 3.6g crystal HCl for 1l H20
- pH of 0.1 mol/l HCl = -log (1/10)=1 extremely acidic
- pH = - log (H30+) = -log(H+)



$$HA \rightleftharpoons H^+ + A^-$$

CONSTANT

$$K_a = \frac{[H^+][A^-]}{[HA]}$$

$$pH = pK_a + \log_{10}\left(\frac{[A^-]}{[HA]}\right)$$

Equation of Henderson Hasselbach

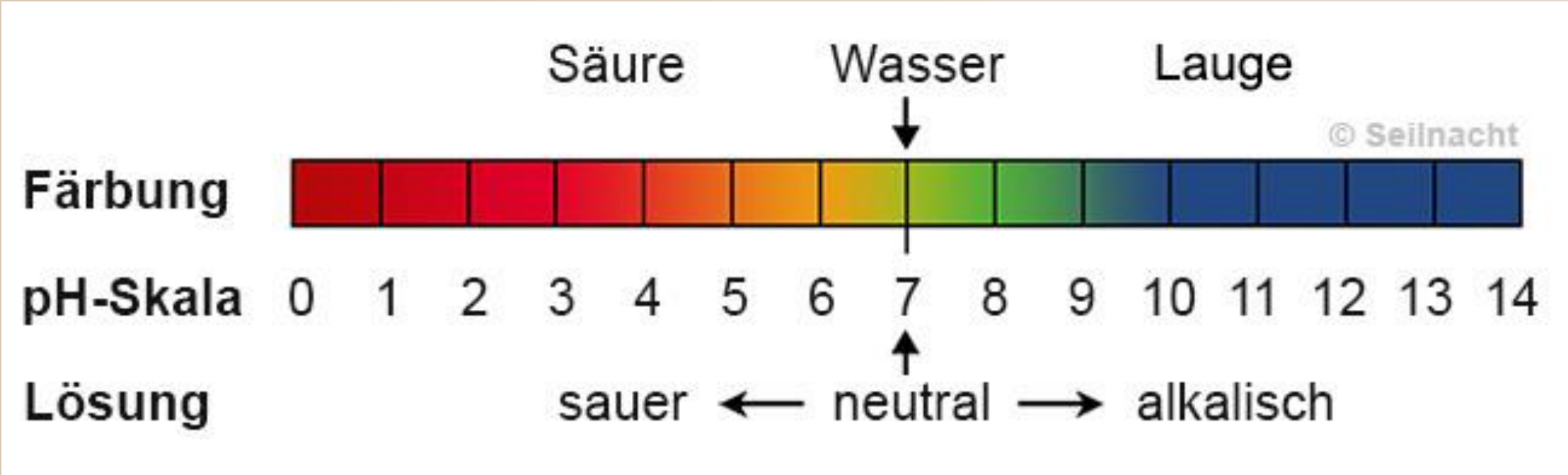
VARIABLE

CONSTANT

modulate the pH value

Choose the acid f(pKa)

THE PH OF AN ACID IS VARIABLE FOR A SAME CONCENTRATION



Your task will be to play with the pH of the chosen acid
once after selecting the acid (A.TENENBAUM)

pH is function of temperature, altitude,hygrometry

PH AND PKA

Choose your acidity

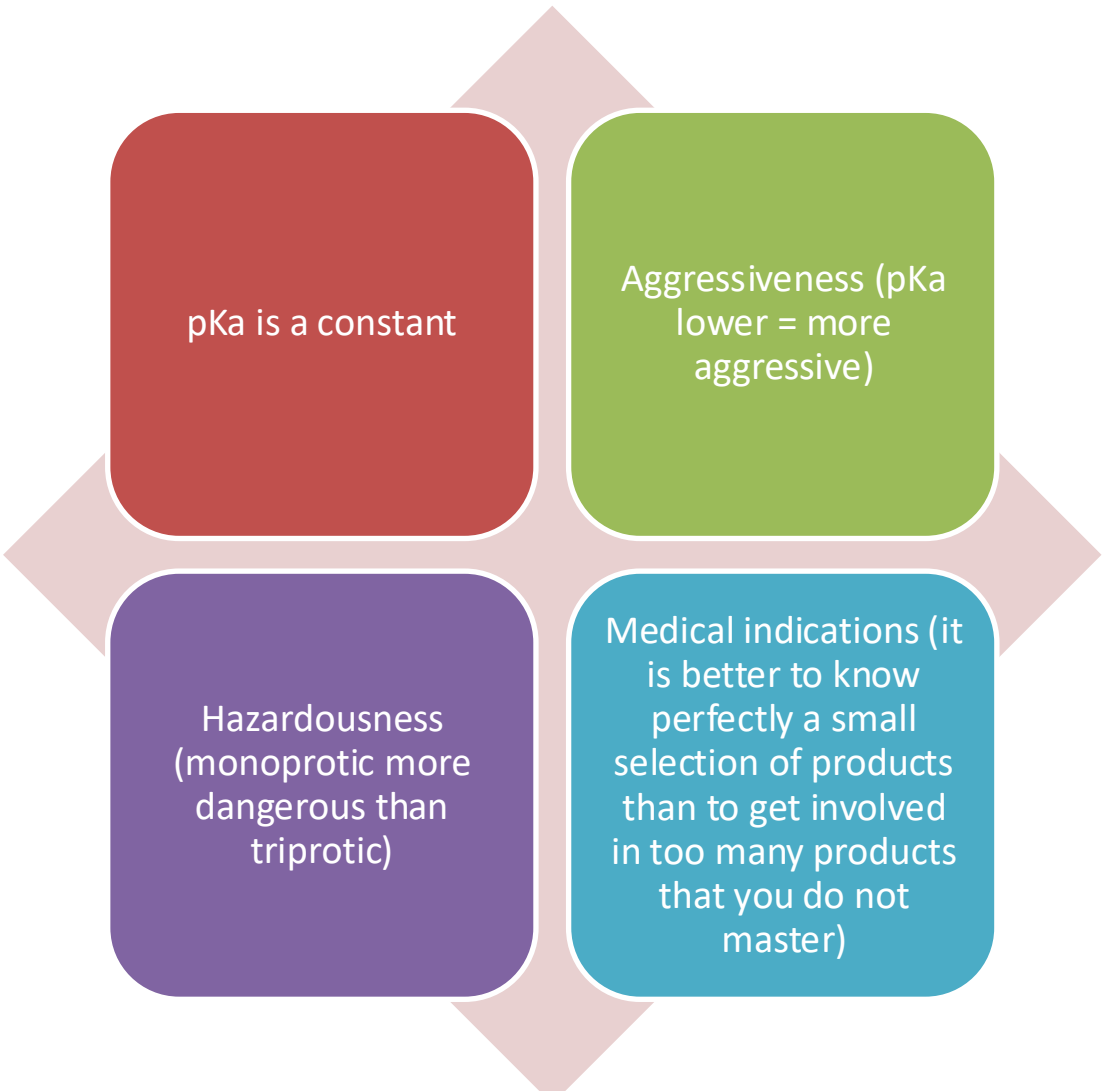
pKa

Modulate your acidity pH

- pKa = aggressiveness
- pKa = Constant
- pH = penetration
- pH = variable

How to choose an acid and modulate it

playing with pH and pKa



How to MODULATE an acid Playing with PH and pKa

- pH is a variable

The pH is lowered

1. for a higher acid concentration in mol / l, g / l, w / v
2. the number of applications or coats with the same acid on the skin in 1 session
3. Repeating sessions, especially on flaky skin or skin in desquamation.

PLAYING WITH THE PH USING CONCENTRATIONS

Example : TCA (2C + 2O + 3 Cl) Mol mass : 127g

In Europe weight/weight

- TCA 10% w/w = 10g TCA in 90g H2O

In USA weight/volume

- TCA 10% w/v = 1Og TCA in 100 g(ml) H2O

How to transform your TCA 10% into TCA 5%

We want to get 5g TCA for 95ml H2O (5%)
This is same as 10 g for 190 ml H2O
Then just add 100 ml

5g TCA in 100 ml is like 10g TCA in 200 ml
Then add 100 ml

10g in 190 ml (EU) is more concentrated than 10g in 200 ml (US)

Conclusion : pH Acid x with y % w/w < pH same Acid x with y% w/v

A. Tenenbaum working in a self-constructed temporary laboratory
Safety and protective measures are paramount.
Instruments, devices, and laboratory glassware required for the emergency preparation of TCA outside a conventional laboratory environment.
Raw materials and water

HOW TO CHOOSE A TCA

1. The density of the steam.
2. The degree of purity.
3. The quality (analytical indication of the pH value)
4. Refractive index
5. The boiling point per liter
6. The density in g /ml bei 25 ° C.
7. Residual traces of anions and/or cations, if they are still present, can cause tattoos. (differential diagnosis with dyschromia) in case of deep penetration associated with pH. For this reason, it is not recommended to use TCA, which is regulated or neutralized with ordinary water, as it contains metal ions.
8. Other chemical residues: whether they should be considered ignored or not, such as SO4.
9. The flash point (A high flash point provides more safety).
10. Any impurities, e.g. insoluble materials, etc.
11. Solubility in water in "moles" at 20 C° with the clarity or lack of color of the solution obtained.
12. Turbidity
13. Vapor Pressure (For sealing and lubricating at low vapor pressure in high vacuum applications.) Vapor expression, Pa at 51 ° C: 133.
14. Stability when offered in gel

TCA AND PACKAGING

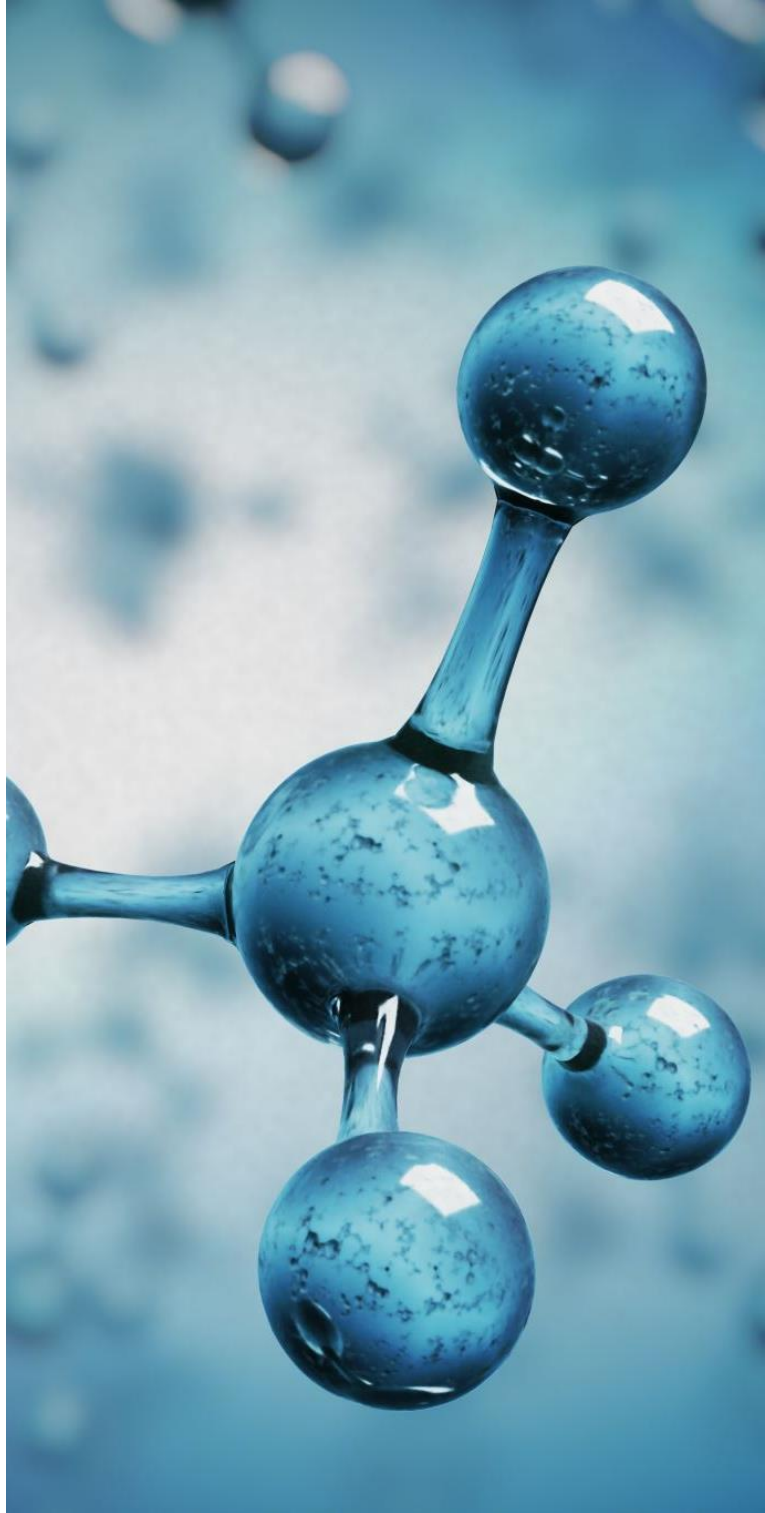
Liquid

TCA GEL
STABLE till 18%w/w

Airless

RECOMMENDED METHODS FOR HELPING INGREDIENTS TO PENETRATE INTO THE SKIN OR DECREASING THE PH (MODULATE THE PH)

- Q or exothermic reaction
  (Cream 1 + Cream 2)
- Increasing the concentration of the acid
- More coats applied on same area with same acid
- Lipoic acid(A.TENENBAUM + M.TIZIANI)
- The fewer ingredients a cream contains, the easier it is to penetrate due to its low molecular weight (M.TIZIANI)
- For severely dehydrated skin, use a low molecular weight moisturizer + Lipoic acid in a sequential way



Classification of Chemical Peels

A. Tenenbaum

pKa Describes Chemical Behavior — Not Biological Efficacy

What pKa tells us

- Degree of ionization
- Chemical reactivity
- Predictable penetration behavior
- Acid–base equilibrium

What pKa does NOT tell us

- Cellular signaling pathways
- Metabolic adaptation
- Inflammatory modulation
- Long-term tissue response

Where efficacy really emerges

Interaction between formulation and tissue
Cellular and metabolic pathways
Biological regulation, not chemical strength

pKa informs chemistry. Biology defines efficacy.

After this chemical section, it is important to **be very clear:**

pKa helps us understand acids, but it does not predict **biological efficacy.**

Clinical results emerge from how skin biology responds to a stimulus,
not from pKa values alone.

Acid category	Acid subcategory	pKa>3 rising	pKa=3	pKa<3	pKa1	pKa2	pKa3	L. Dewandre	Number of reactions
Alpha Hydroxy	Aliphatic		Wine A (tartaric)		3.04	4.37		Metabolism	2
		Citric A			3.15	4.77	6.40	Metabolism	3 Triprotic
		Apples A (malic)			3.40	5.13		Metabolism	2 Diprotic
		Glycol A			3.83			Metabolism	1 monoprotic
		Milk.A (lactic)			3.86			Metabolism	1
	Aromatic Benzene ring		Almond.A mandelic		3.37			Metabolism	1
Alpha Keto				Grapes Acid (pyruvic)	2.49			Not available	1
Bicarboxylic acid		Azelain a			4.55	5.59		Metabolism	2
Beta-Hydroxid			Salicylic a		2.97			poisonous	1
TCA				TCA	0.54			caustic	1
Phenol	Aromatisch	Phenol			9.95			poisonous	Alcohol-Base

CLASSIFICATION
DR.ALAIN TENENBAUM

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CHOOSE AN ACID f(pKa)

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EU LAW Cosmeticians cant use any acid with pKa <3

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Aggressiveness
e.g. citric A>glycolic A
pKa 3.15<3.83

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DANGER
Low Nr of reactions
e.g. glycolic A vs citric A
Mono vs Triprotic

Anti Aging Peelings on Phototype 3

Treatment : Citric Acid each day x 15 days

+ 2 times metabolic peels 1 x week

BEFORE

AFTER 15 DAYS

Protocol : Go on Peeling (citric acid) on the skin even during desquamation

Patient can go to the beach (Cancun) each day

Courtesy of Dr.Alain Tenenbaum

Anti Aging Peelings on Phototype 3

Treatment : Citric Acid each day x 15 days

+ 2 times metabolic peels 1 x week

BEFORE

AFTER 15 DAYS

MORE SESSIONS > MORE AGGRESSION

CUMULATIVE IMPROVEMENT

WITHOUT HIGH-RISK AGGRESSION

LOW-INTENSITY, REPEATABLE PEELS OUTPERFORM "ONE-SHOT" AGGRESSIVE APPROACHES

TO REMEMBER

Compared with glycolic acid, citric acid is generally regarded as less hazardous, yet it can induce more aggressive tissue reactions and is commonly more cost-effective.

HOW TO AVOID SOCIAL DOWNTIME

- It is preferable to repeat multiple treatment sessions using a **safe and sufficiently active acid** rather than performing a single session with a **highly aggressive and potentially hazardous acid**.
  (e.g., TCA vs citric acid)

•It is preferable to repeat sessions with a **lower acid concentration** rather than using a **hyperconcentrated acid** in one or two sessions
(not applicable to hyperchromias).

•Example with TCA: **4–3–2–2–…** instead of **1 × 4**

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KERATOREGULATORS

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MOISTURIZERS

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KERATOREGULATORS+ MOISTURIZERS

From Chemistry to Biology:
What Really Determines Clinical Outcomes

Chemistry

- Describes molecular behavior
- Defines ionization and penetration
- Controls exposure and delivery

Biology

- Determines cellular response
  Modulates inflammation
- Drives tissue adaptation and renewal

Clinical outcome

Emerges from biological regulation

Not from chemical strength alone

Not from visible injury

Chemistry initiates the stimulus.
Biology determines the result.

Le pKa peut être comparé à un agresseur qui porte un coup de poing.

La biologie représente la victime, et l'outcome clinique correspond aux conséquences finales — bénignes, sévères ou incapacitantes.

Un coup de poing porté avec la même force n'aura pas les mêmes conséquences biologiques ni cliniques selon qu'il touche les fesses, le nez ou le sternum.

Ce n'est pas le coup en lui-même qui détermine la gravité, mais le tissu touché, sa structure, sa capacité d'adaptation et sa réponse biologique.

pKa can be compared to an aggressor delivering a punch.

Biology represents the victim, and the clinical outcome reflects the final consequences — mild, severe, or incapacitating.

A punch delivered with the same force will not produce the same biological effects or clinical outcomes if it strikes the buttocks, the nose, or the sternum.

Severity is not determined by the punch itself, but by the tissue involved, its structure, vulnerability, and biological response.

La biologie représente la victime, et l'outcome clinique correspond aux conséquences finales — bénignes, sévères ou incapacitantes.

Pthe same way, pKa describes the chemical aggression, but clinical efficacy and risk are determined by tissue biology, not by chemical strength alone.

METABOLIC PEELS
CLASSIFICATION OF L.DEWANDRE
REVISED & UPDATED BY A.TENENBAUM

Metabolic Peels are next generation skin peels that incorporate Chirally Correct AHA and encapsulated Retinoic Acid to stimulate the skins natural renewal processes.

Peels without downtime or irritation,

Metabolic Peels target the living layer of the skin(Stratum Germinativum or Basal) and increase cell renewal.

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What Really Determines Clinical Outcomes

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- Determines cellular response
  Modulates inflammation
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Not from visible injury

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Biology determines the result.

Metabolic Peels vs Traditional Chemical Peels

METABOLIC PEELS

- Therapeutic philosophy:
  Support and modulate skin metabolism.
- Primary target:
  Living epidermal layers (stratum basale / germinativum)
- Mechanism of action:
  - Metabolic activation
  - Controlled stimulation of crernewal
  - Respect of physiological skin proceses
- Tissue response:
  - No forced tissue destruction
  - Minimal or no inflammation
  - No obligatory desquamation
- Clinical approach:
  - Non-aggressive

Primary goal:
Restore skin function and long-term balance

TRADITIONAL CHEMICAL PEELS

- Therapeutic philosophy:
  Force tissue repair through chemical injury.
- Primary target:
  Stratum corneum and superficial dermis
- Mechanism of action:
  - Protein coagulation
  - Chemical burn-induced injury
  - Inflammatory-oxidative activation
- Clinical approach:
  - Ablative or semi-ablative
  - Aggression-dependent efficacy
  - Depth-oriented classification
- Downtime:
  - Variable, often significant

Primary goal:
Induce repair through controlled injury.

Metabolic Peels work with skin physiology, while traditional chemical peels work through controlled injury.

Biological Targets of Metabolic Peels

Target: Epidermal Cell Renewal

- Primary biological target:
- Basal keratinocytes (stratum basale / germinativum)

- Mechanism:
- • Activation of cell proliferation
- • Regulation of differentiation pathways
- • Acceleration of physiological epidermal turnover

- Clinical relevance:
- • Improved skin texture and tone
- • Progressive normalization without forced desquamation

Target: Cellular Metabolism and Signaling

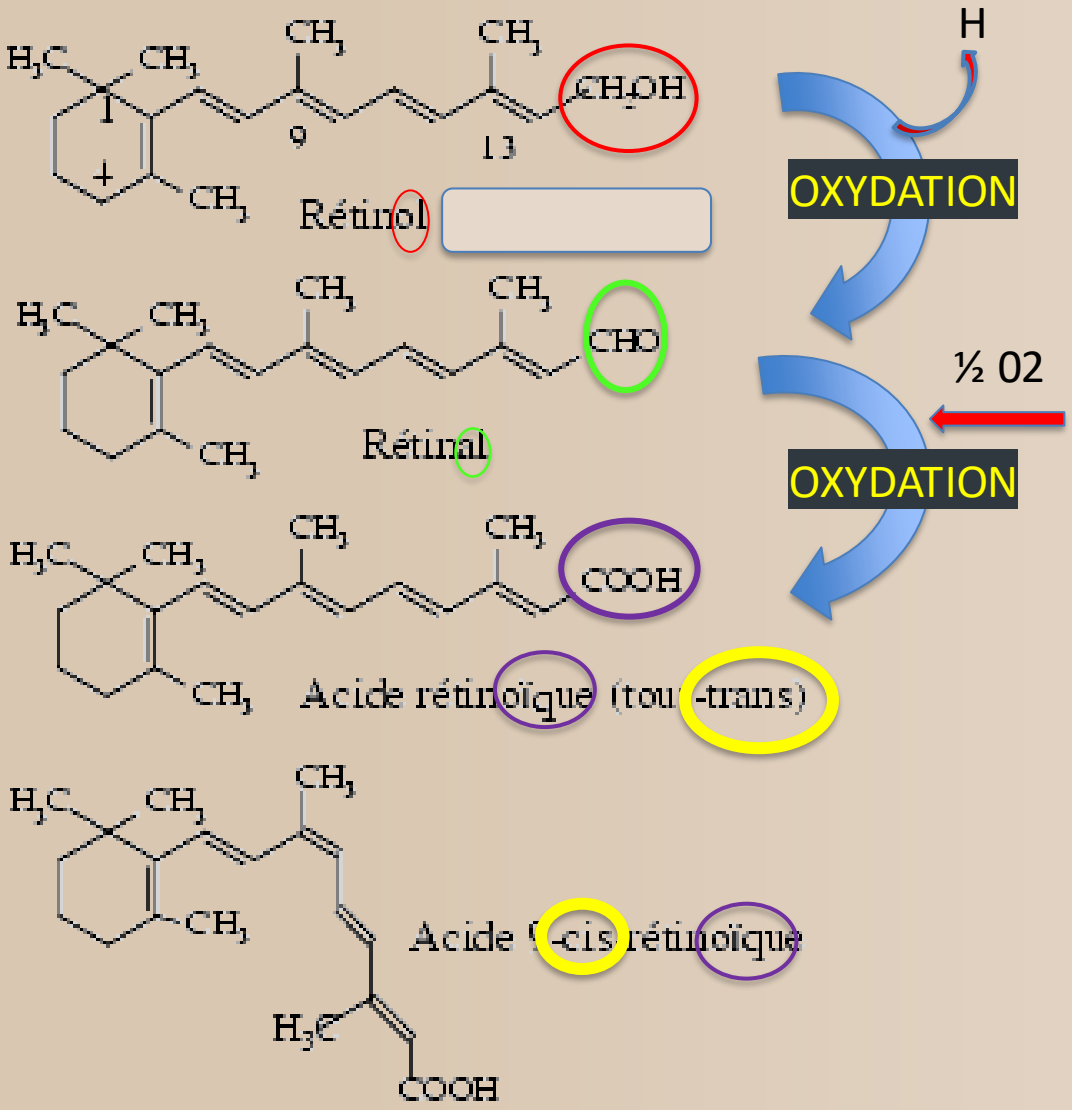
- Primary biological target:
- Intracellular metabolic pathways

- Mechanism:
- • Modulation of enzymatic activity
- • Regulation of oxidative balance
- • Optimization of cellular energy metabolism

- Clinical relevance:
- • Improved skin vitality
- • Reduced dysfunctional signaling
- • Enhanced response to subsequent treatments

RETINOL, RETINALDEHYDE AND RETINOIC ACID

OXIDATION AND EFFECT



SUFFIXE - OL for Alcohol

SUFFIXE - AL for ALDEHYDE

SUFFIXE - OIC for acids

Retinoic acids work best when they are stable

Peeling de Luxe Plus contains stable retinoic acids

Retinoic acids are more expensive than retinol

Chemical Reactions: Lab vs. Skin Biology

Laboratory Chemistry

Carboxylic Acid → Alcohol → $R-CH_2-OH$
Strong Reduction)

Alcohol → Aldehyde → Carboxylic Acid

Oxidation

Controlled Lab Reactions

In Vivo
Enzymatic Pathways

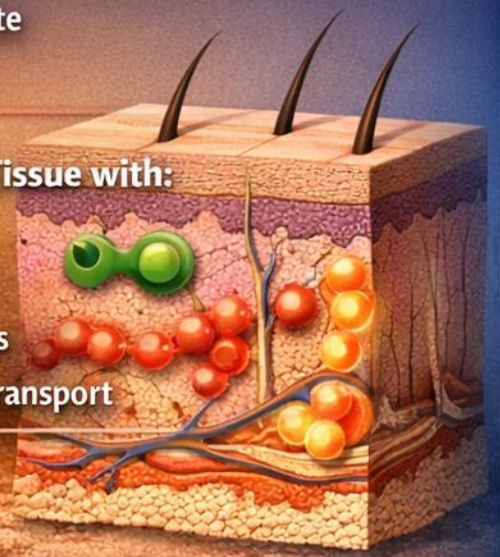
Biological Metabolism

Molecules Applied to Skin:

- Retinol
- Retinyl Palmitate
- Retinal

Enter a Living Tissue with:

- Enzymes
- Cofactors
- Redox Systems
- Intracellular Transport



The Skin is Not a Beaker

RETINOIC PATHWAY

Acid category	Acid subcategory	pKa>3 rising	pKa=3	pKa<3	pKa1	pKa2	pKa3	L. Dewandre	Number of reactions
Alpha Hydroxy	Aliphatic		Wine A (tartaric)		3.04	4.37		Metabolism	2
		Citric A			3.15	4.77	6.40	Metabolism	3 Triprotic
		Apples A (malic)			3.40	5.13		Metabolism	2 Diprotic
		Glycol A			3.83			Metabolism	1 monoprotic
		Milk.A (lactic)			3.86			Metabolism	1
	Aromatic Benzene ring		Almond.A mandelic		3.37			Metabolism	1
Alpha Keto				Grapes Acid (pyruvic)	2.49			Not available	1
Bicarboxylic acid		Azelain a			4.55	5.59		Metabolism	2
Beta-Hydroxid			Salicylic a		2.97			poisonous	1
TCA				TCA	0.54			caustic	1
Phenol	Aromatisch	Phenol			9.95			poisonous	Alcohol-Base

CLASSIFICATION DR.L.DEWANDRE

Positioning of Metabolic Peels Within the Protocol

Metabolic Peels are not defined by intensity, but by their role within the protocol sequence

🔴 BLOCK 1 — CORRECTION PHASE

Primary role:
Active metabolic correction

Clinical indications:
- Dyschromias
- Acne and post-acne sequelae
- Photoaging with functional impairment
- Altered epidermal renewal

Mechanism:
- Stimulation of cell renewal from the basal layer
- Metabolic activation without forced tissue injury

🙂 Clinical objective:
Correct pathological signaling while minimizing trauma

🟠 STABILIZATION PHASE

Primary role:
Functional normalization and consolidation

Clinical indications:
- Post-correction phase
- Barrier recovery
- Reduction of inflammatory rebound
- Prevention of pigment relapse

Mechanism:
- Support of physiological regeneration
- Regulation of epidermal metabolism
- Buffering of previous corrective interventions

🙂 Clinical objective:
Stabilize results and restore skin homeostasis

🟢 MAINTENANCE PHASE

Primary role:
Long-term metabolic support

Clinical indications:
- Maintenance of clinical results
- Anti-aging prevention
- Long-term pigment control
- Home-care integration

Mechanism:
- Controlled stimulation without downtime
- Support of natural skin renewal cycles

🙂 Clinical objective:
Preserve results and prevent recurrence over time

Chiral Correction

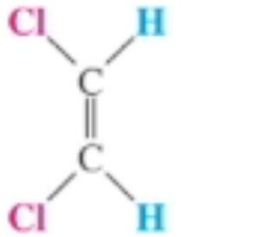
What is Chiral Correction?

In a Nut Shell - Chiral-correction is the purification on a molecular level to ensure optimal interaction with your body.

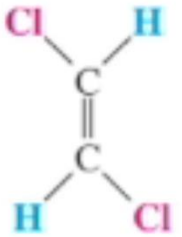
The Science - Some molecules are like hands. Left and right hands are mirror images, but are not superimposable.

A molecule that is not superimposable is said to be ***chiral***.

Chemically the same ingredient, but structurally different. An L-or D-prefix denote the chiral version.



cis-1,2-Dichloroethene
($C_2H_2Cl_2$)



trans-1,2-Dichloroethene
($C_2H_2Cl_2$)

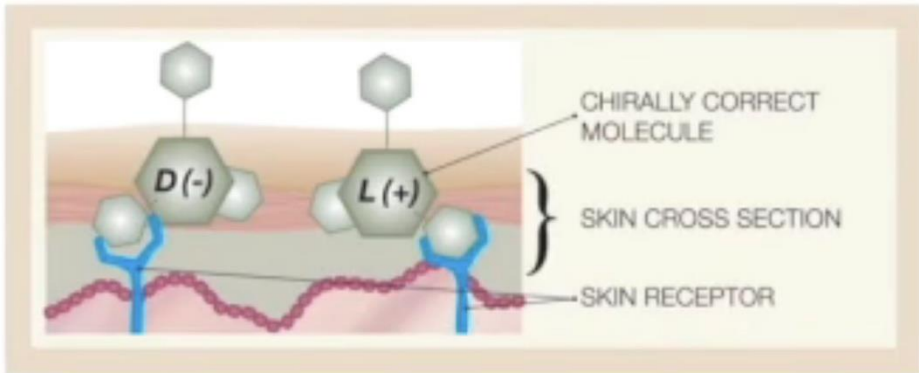
Chiral Correction 2

Implications for the Skin

Although chemically two forms of an ingredient may be identical, because their shape is different they will interact with the skin differently.

Like a **key in a lock**, only the chirally-correct form of an ingredient can interact with the appropriate cell receptor and trigger the right cellular response.The wrong form of the ingredient can collect on the skin's surface and can cause irritation.

How a Chiral Molecule Works



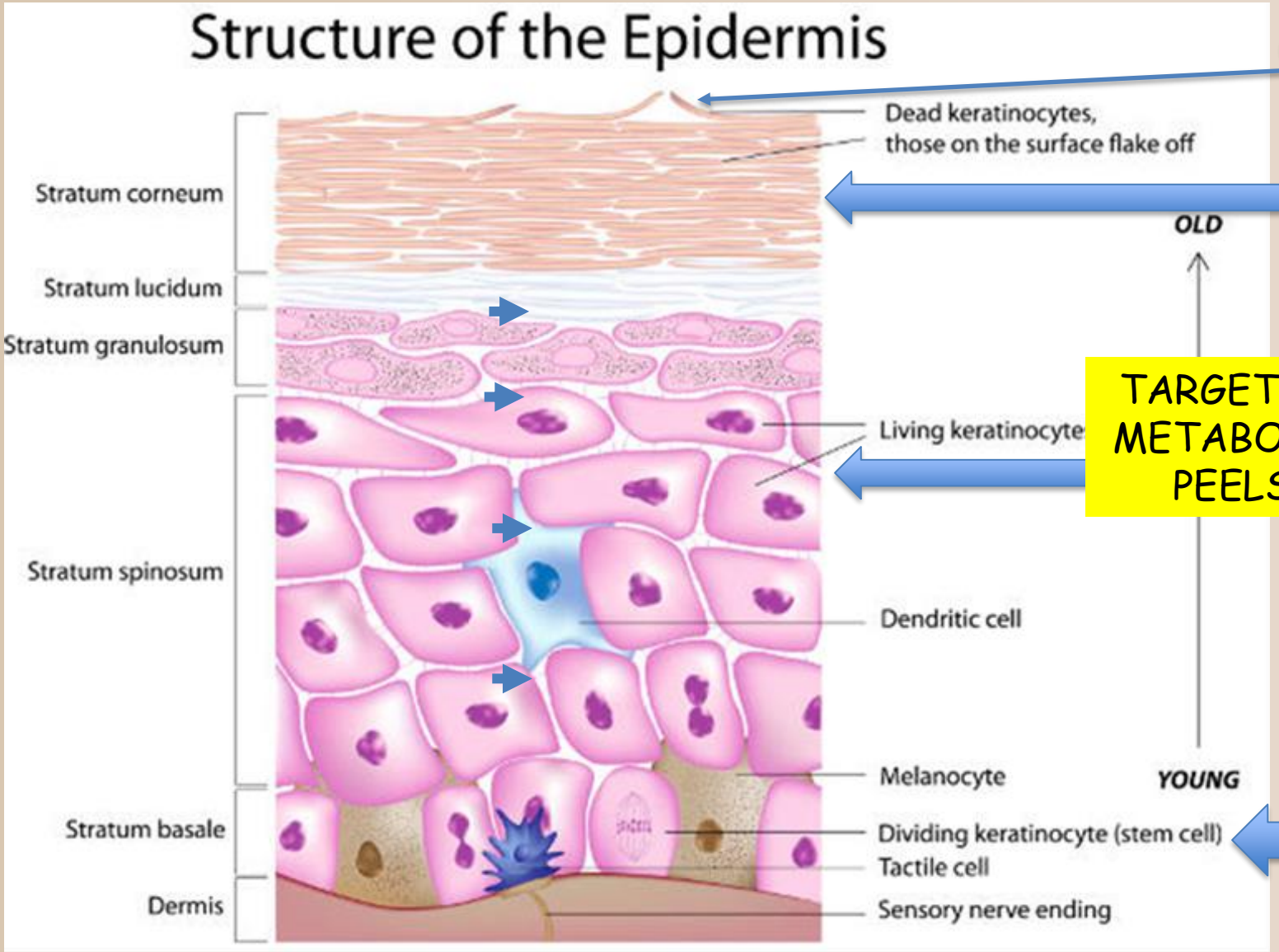
CosMedix ingredients contain only the correct-fitting molecules for the skin's receptors

- L-Lactic Acid - Boosts ceramide production by 50%
- D-Lactic Acid - Has no effect on ceramide production and causes irritation.

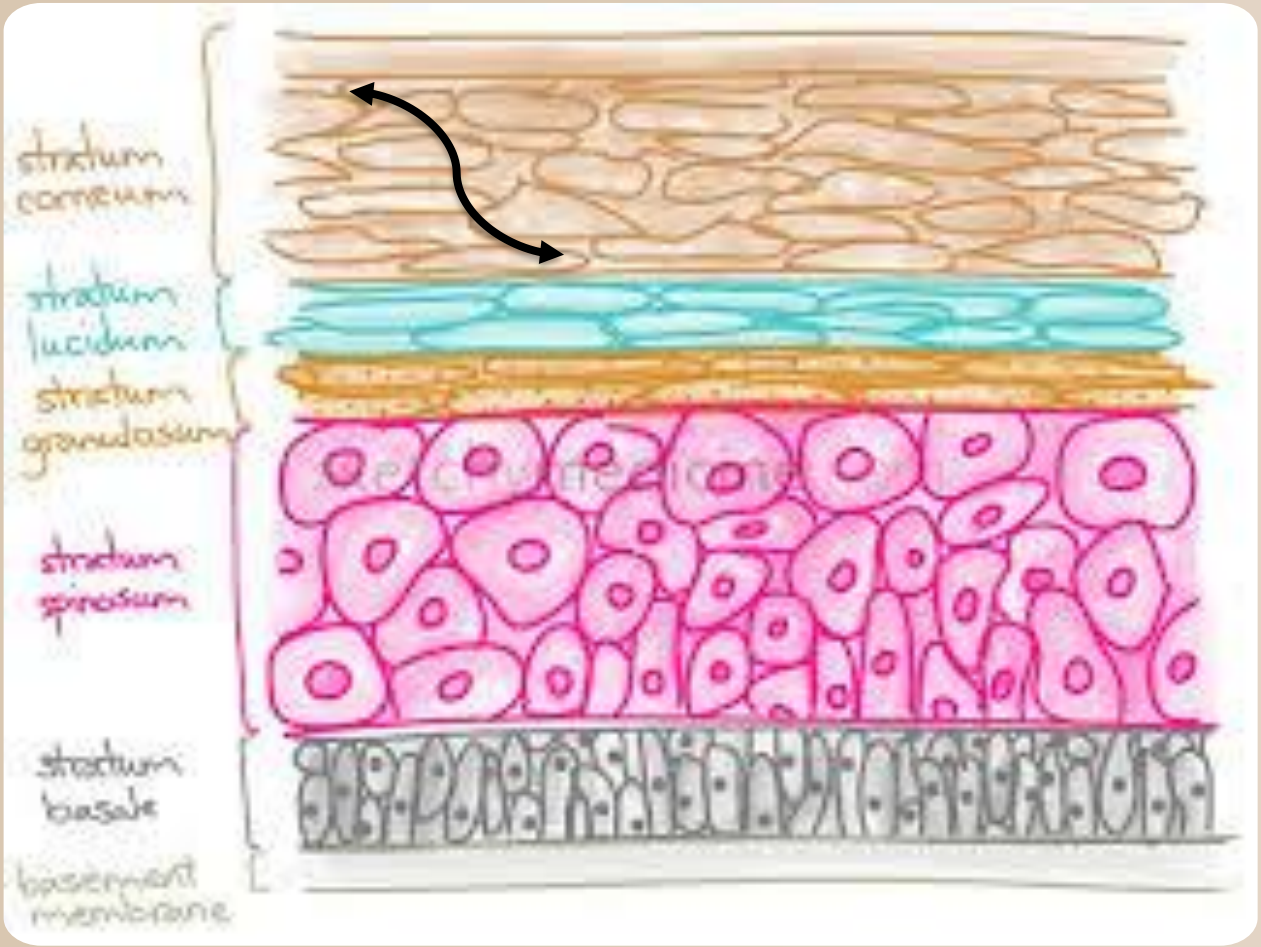
Ceramides are fats or lipids that are found in skin cells. They make up 30% to 40% of your outer skin layer, or epidermis. Ceramides are important for retaining your skin's moisture and preventing the entry of germs into your body.

Acid category	Acid subcategory	pKa>3 rising	pKa=3	pKa<3	pKa1	pKa2	pKa3	**Tenenbaum ENANTIOMERS**	Number of reactions
Alpha Hydroxy	Aliphatic		Wine A (tartaric)		3.04	4.37		Chiral	2
		Citric A			3.15	4.77	6.40	Chiral	3 Triprotic
		Apples A (malic)			3.40	5.13		Chiral	2 Diprotic
CLASSIFICATION Chiral Acids A.TENENBAUM		Glycolic A	**Skin does not have a receptor site for glycolic acid.**		3.83			Not available	1 monoprotic
		Milk.A (lactic)			3.86			Chiral	1
	Aromatic Benzene ring		Almond.A mandelic		3.37			Chiral	1
Alpha Keto				Grapes Acid (pyruvic)	2.49			Not available	1
Bicarboxylic acid		Azelain a			4.55	5.59		Not available	2
Beta-Hydroxid			Salicylic a		2.97			Chiral Aspirin not chiral	1
TCA				TCA	0.54			caustic	1

MAIN TARGET OF METABOLIC PEELS



Traditional chemical peels -> forcing repair



- Exfoliate the skin from the stratum corneum downwards

PH AND PKA

BUFFER IN DERMATOLOGY- SKIN HYDRATION

PH SKIN = 5.5

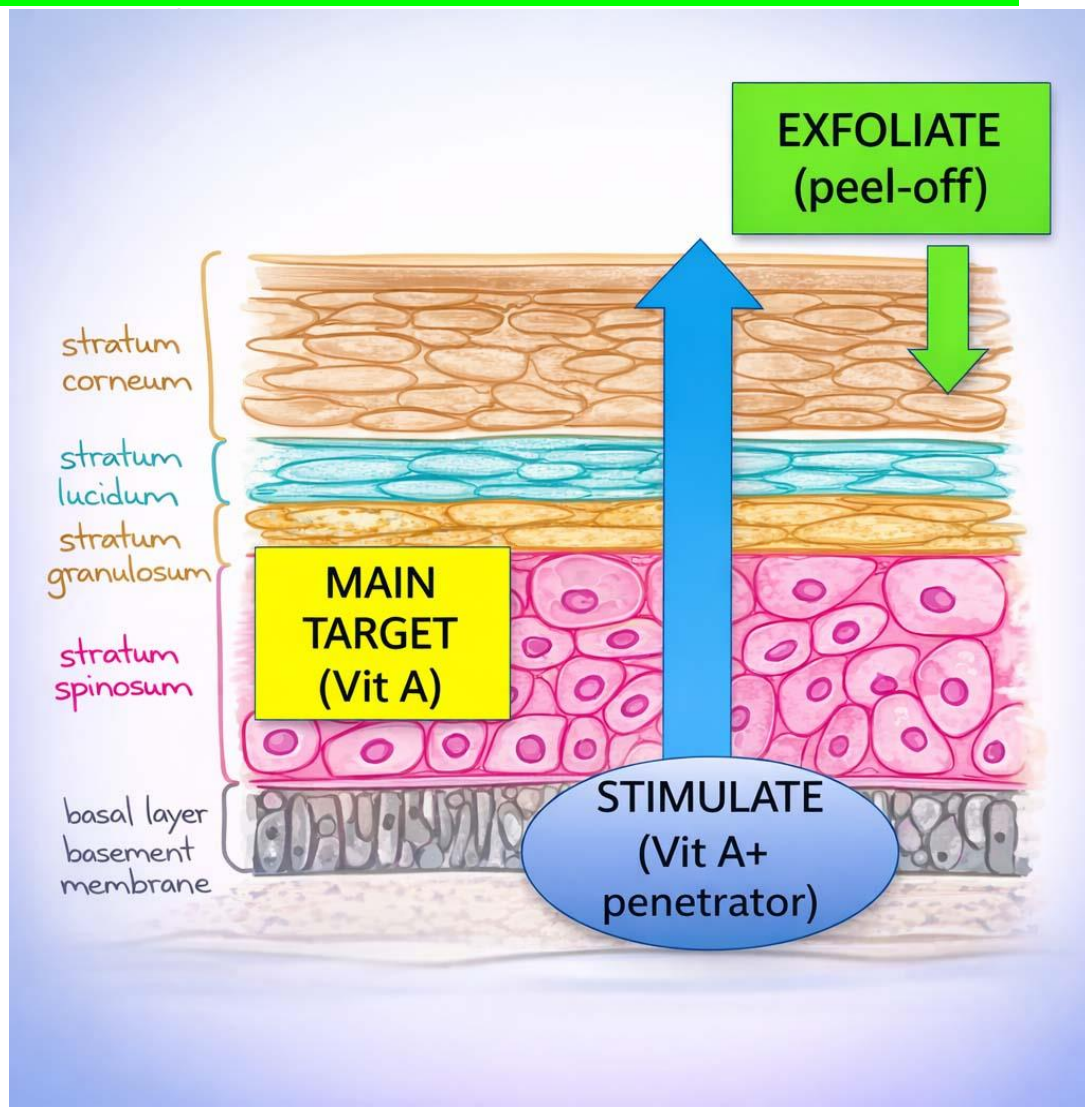
- pH skin (5.5) < pKa < 7 Moisturizing and less corrosive. (hydratant-MOISTURIZER)
- 0< pKa < pH skin(5.5) keratoregulators and promote desquamation (desquamation + cell regeneration)
- pKa = pH (5.5) skin Ideal (citric acid - triprotic) moisturizing + desquamation

Die Haut muss nach einem Peeling mit einer keratoregulatorischen Säure (pKa < 5.5) systematisch mit Feuchtigkeit versorgt werden

Peeling de Luxe Plus is the ideal buffer for any acid that needs to be buffered.
Peeling de Luxe Plus is not a moisturizer.

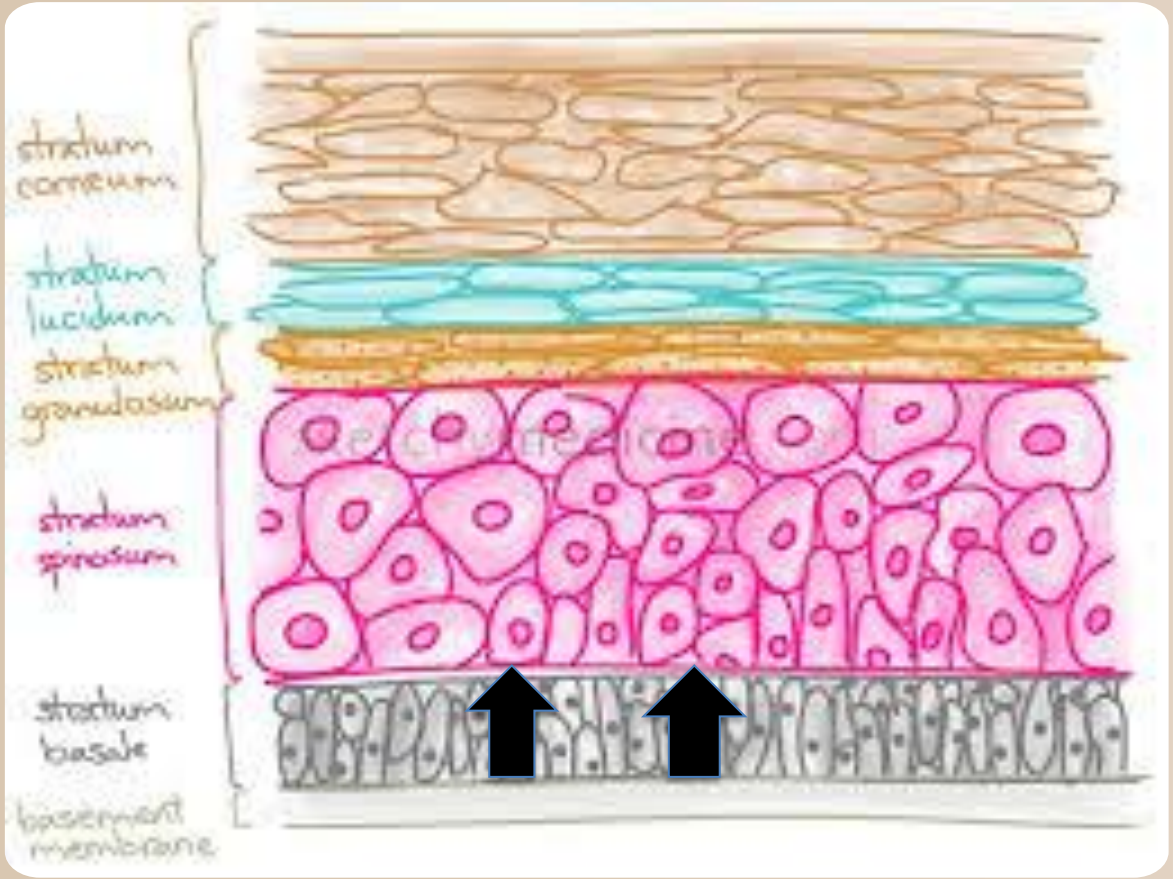
METABOLIC PEELS VS CHEMICAL PEELS

- Metabolic Peels contain Vit A that targets the living layer of the skin and increases cell renewal. (Ex *Peeling de Luxe Plus)*
- Traditional Chemical Peels use Acids to exfoliate the skin from the stratum corneum downwards (Ex 30 min peel-off)
- Metabolic Peels use encapsulated Retinoic Acid to stimulate renewal from the stratum germinativum upwards, working with the skins natural renewal instead of forcing repair.
- This is a non ablative, non traumatic approach to skin peeling that supports skin function



Stratum basal = Stratum Germinativum

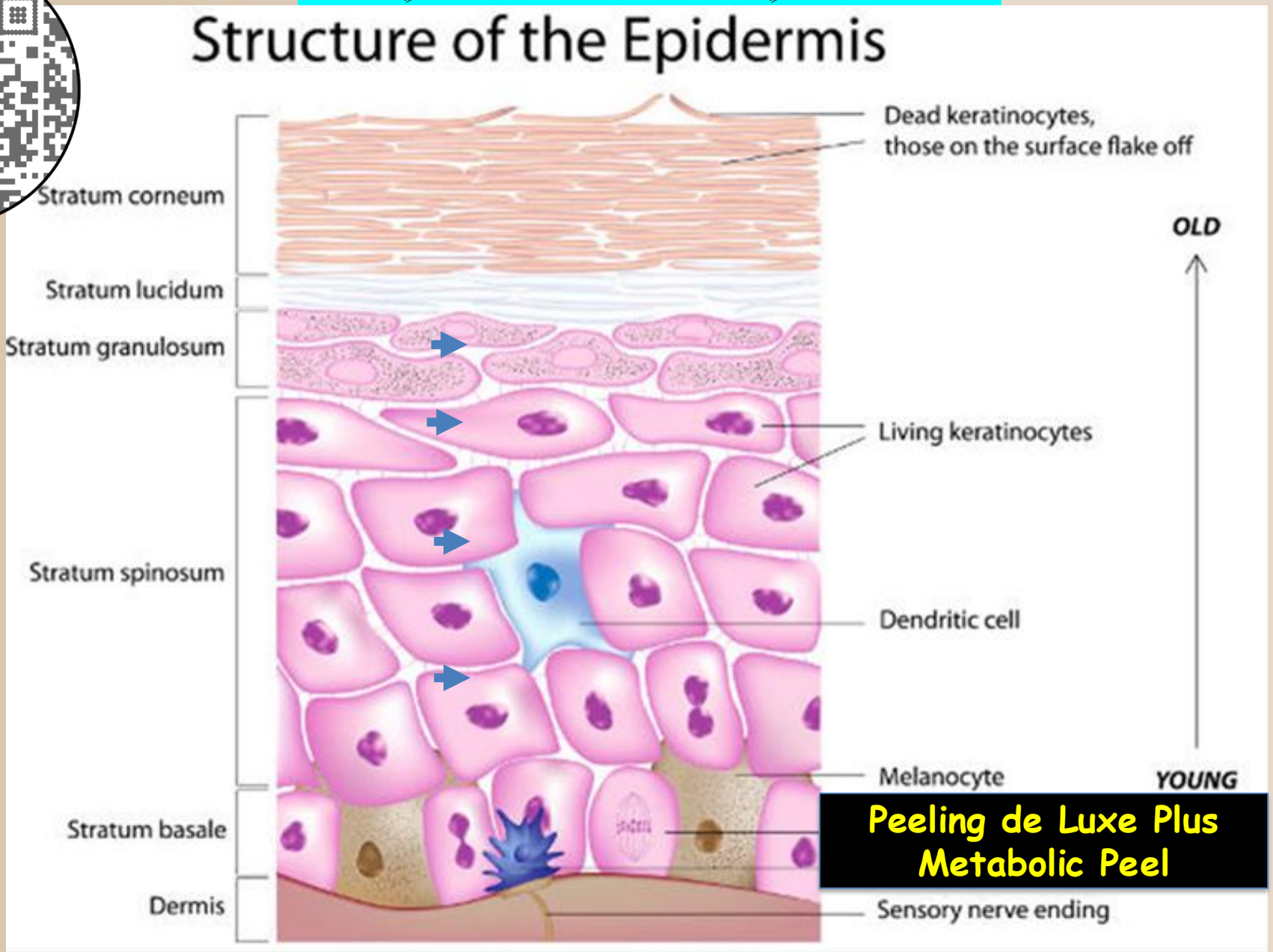
METABOLIC PEELS -> SKIN NATURAL RENEWAL SUPPORTING SKIN FUNCTION



- Stimulate renewal from the stratum basal or germinativum upwards

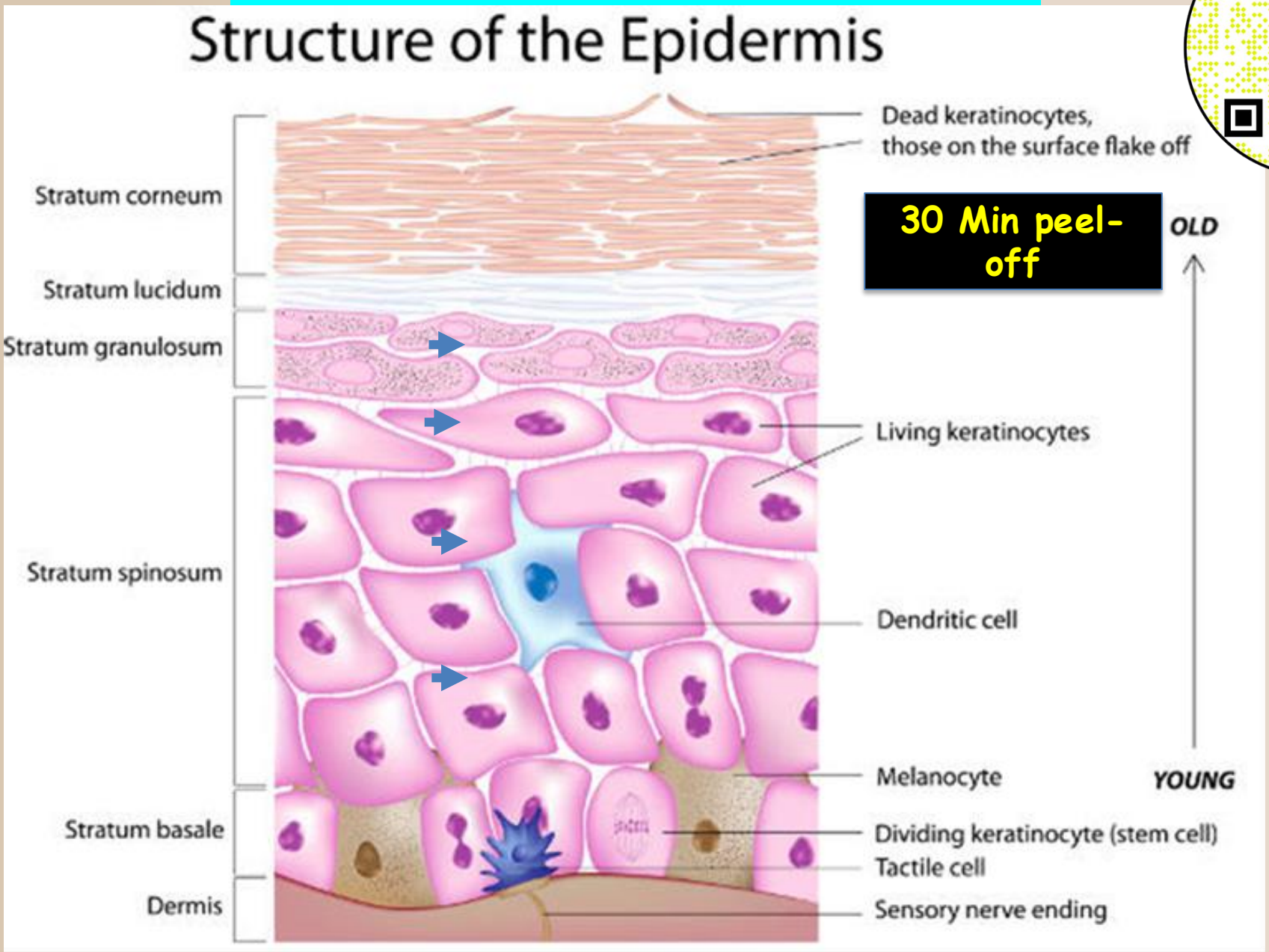
DIFFERENT TARGETS OF EPIDERMIS

METABOLIC PEEL TARGETS STRATUM BASAL AND INCREASES CELL RENEWAL

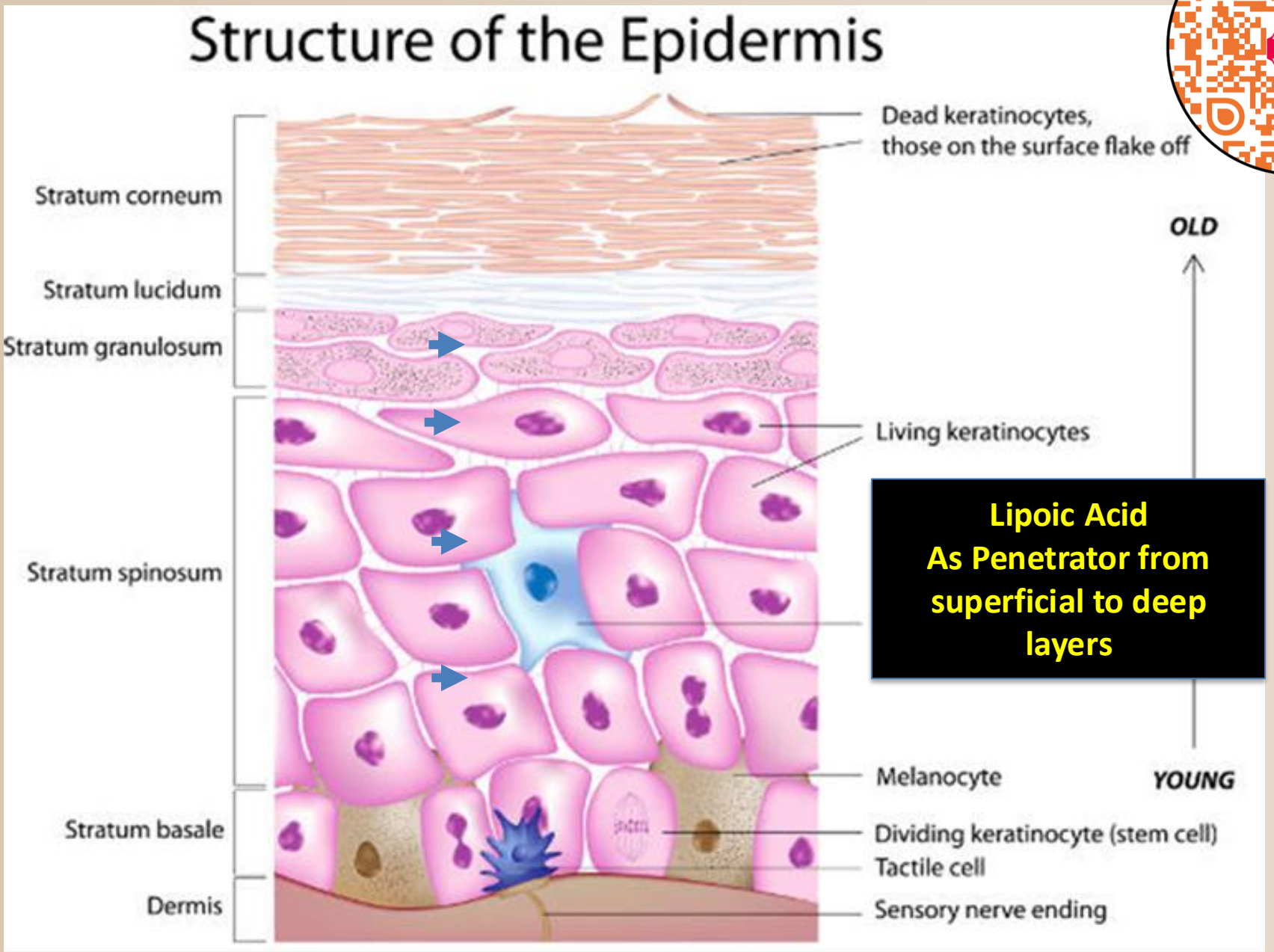


DIFFERENT TARGETS OF EPIDERMIS

SUPERFICIAL TARGET



Different Targets of Epidermis



Why Desquamation Is Not Mandatory

DESQUAMATION-BASED APPROACH

- Underlying assumption:
  Visible peeling equals clinical efficacy
- Biological mechanism:
  - Chemical injury to the stratum corneum
  - Protein coagulation and necrosis
  - Inflammatory response
- Clinical consequences:
  - Epidermal disruption
  - Barrier impairment
  - Downtime and social eviction
- Clinical consequences:
  - Epidermal disruption
  - Barrier impairment
  - Increased risk of PIH and complications
- Clinical limitation:
  - Efficacy depends on the degree of tissue damage

FUNCTION-BASED APPROACH

- Underlying principle:
  Clinical efficacy does not require visible peeling
- Biological mechanism:
  - Activation of epidermal metabolism
  - Stimulation of cell renewal from living layers
  - Regulation of skin signaling pathways
- Clinical consequences:
  - Preservation of the skin barrier
  - Minimal inflammation
  - No mandatory downtime
  - Improved safety profile
- Clinical advantage:
  - Efficacy achieved through functional modulation, not through tissue destruction
- Clinical advantage:
  - Efficacy achieved through functional modulation, not through tissue destruction

TREATMENT PROTOCOL OF MAURO TIZIANI
3 TARGETS = 3 PRODUCTS
STIMULATE,EXFOLIATE,PENETRATE

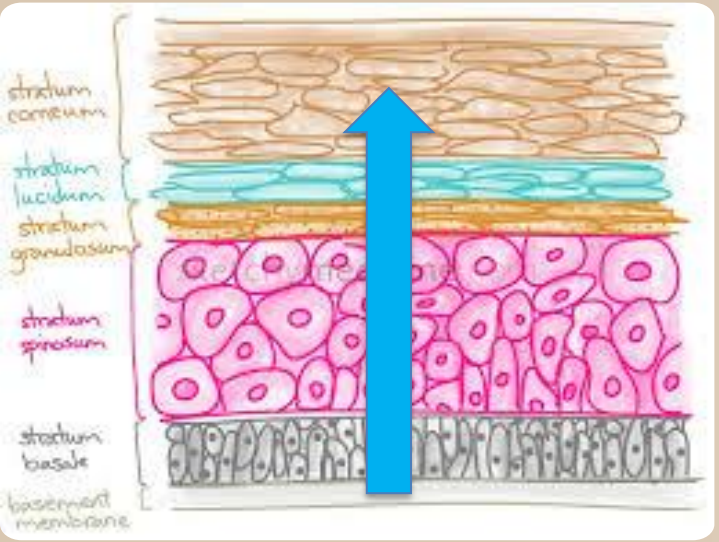
THE METABOLIC PEELS SET

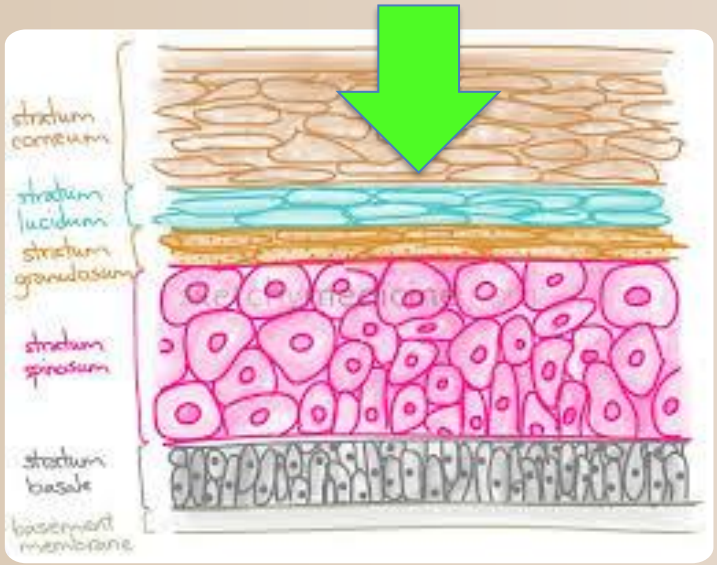
STIMULATE	EXFOLIATE	PENETRATE
PEELING DE LUXE PLUS PURE METABOLIC PEEL	30 MIN PEEL OFF	LIPOIC ACID
		

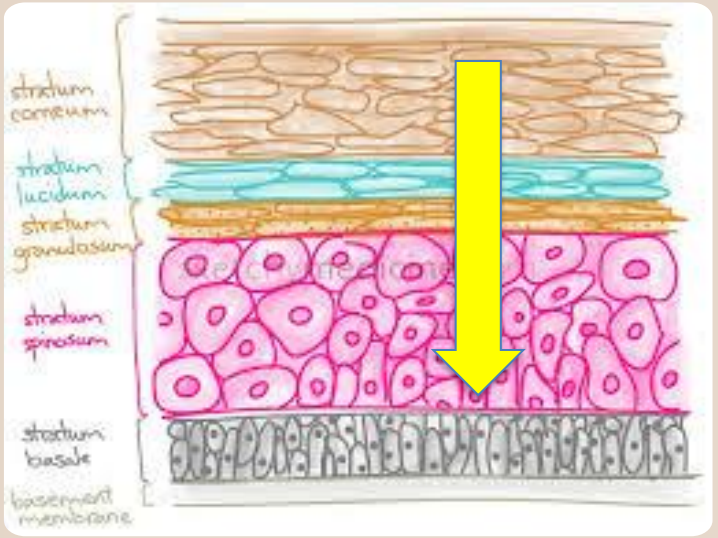
STIMULATE

EXFOLIATE

PENETRATE







PEELING DE LUXE PLUS

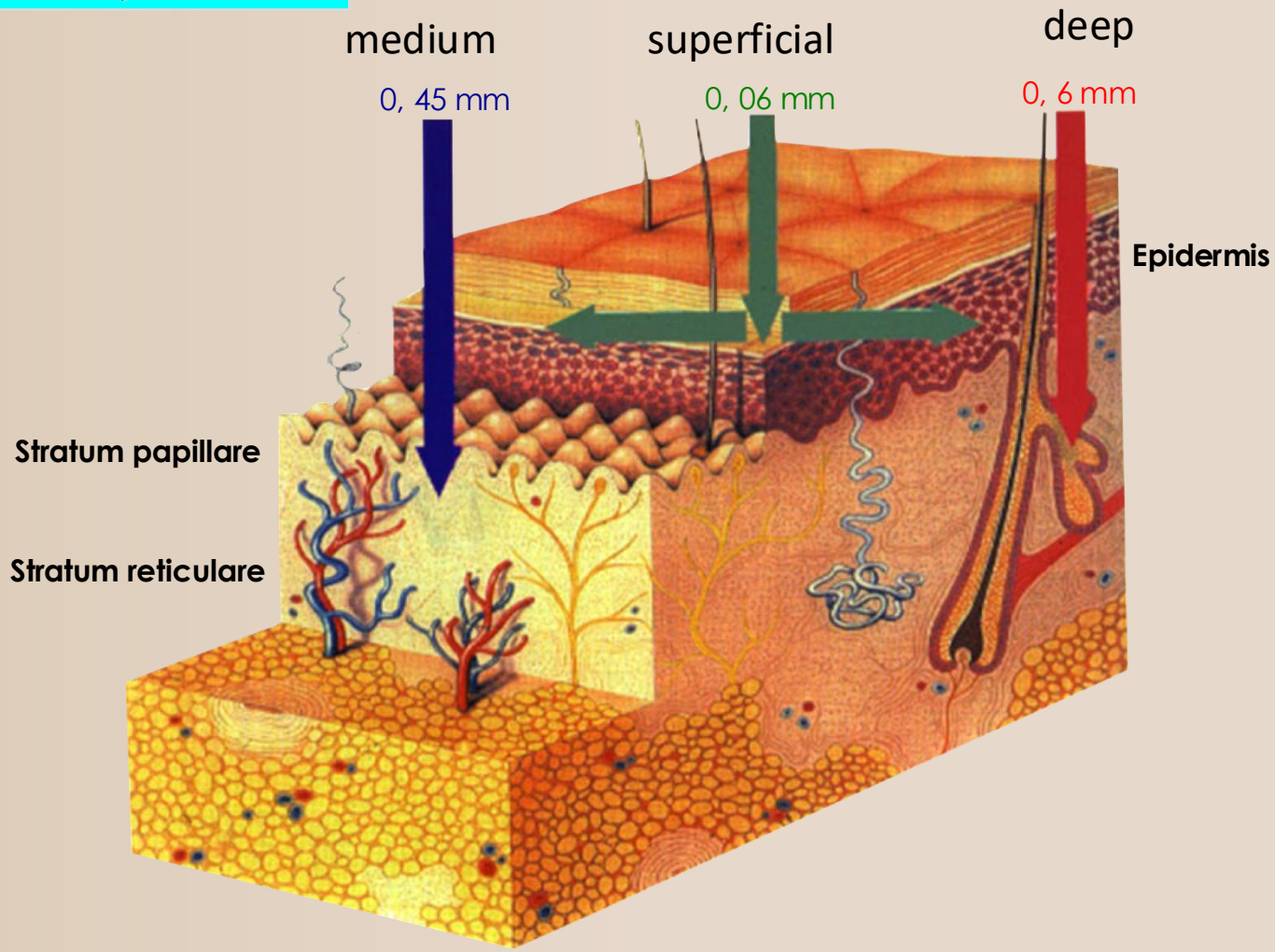
30 MIN PEEL OFF

LIPOIC ACID

SUPERFICIAL, MEDIUM & DEEP PEELS

PENETRATION DEPENDS OF PH MODULATION

NEW CONCEPT OF MAURO TIZIANI



Get deeper with Lipoic Acid without modulating the pH

(A.TENENBAUM)

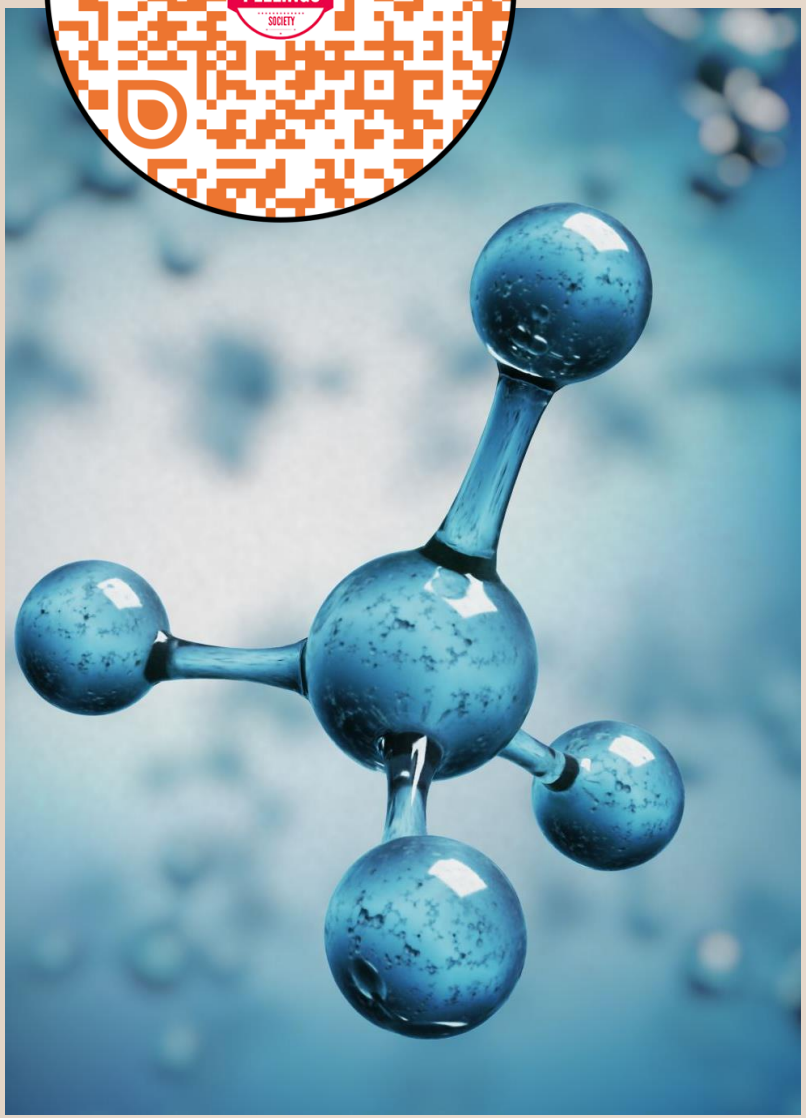
CONCEPT OF MAURO TIZIANI

- Chin
- Perioral area
- Forehead
- Nasal Tip
- Cheeks / nose
- Frown
- Periocular area
- Neck

APPLICATION PRESSURE

RECOMMENDED METHODS FOR HELPING INGREDIENTS TO PENETRATE INTO THE SKIN OR DECREASING THE PH (MODULATE THE PH)

- Q or exothermic reaction
  (Cream 1 + Cream 2)
- Increasing the concentration of the acid
- More coats applied on same area with same acid
- Lipoic acid(A.TENENBAUM + M.TIZIANI)
- The fewer ingredients a cream contains, the easier it is to penetrate due to its low molecular weight (M.TIZIANI)
- For severely dehydrated skin,
  use a low molecular weight moisturizer + Lipoic acid in a sequential way



HOW TO ALLOW AN ACID TO PENETRATE DEEPLY INTO THE SKIN LAYERS

CHOOSE AN AGGRESSIVE ACID (PKA MIN) AT LOWER CONCENTRATION IS THE BEST TOOL

1. High acid concentration
2. Number of coats on the skin
3. Time on the skin before neutralization or defrosting
4. From Rosé Frosting to White Frosting
5. Repeat sessions (especially during desquamation)
6. Best Option:Add Lipoic Acid

LIPOIC ACID

PRACTICAL TRENDS OF A.TENENBAUM

Do peels without downtime or social eviction, for all skin types in any seasons

Better a long ,,invisible,, desquamation than a short visible one (downtime) A.Tenenbaum

Choose best tools to convert a superficial peel into a medium or deep peel (Q, lipoic acid ..) reducing the side effects

FORBIDDEN COMBINATION OF CHEMICAL PEELS

- With not chiral molecules
- With alcohols I, II
- With bases
- With L+D mixed molecules
- With D molecules

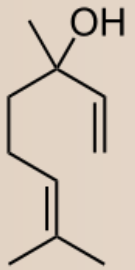
THE 3 TYPES OF PRIMARY, SECONDARY AND TERTIARY ALCOHOL

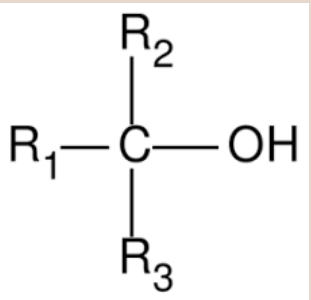
- primary alcohol R-CH20H ex Ethanol CH3-CH2OH
- Secondary Alcohol R1-CHOH-R2

zB Isopropanol CH3-CHOH-CH3

Ethanol and isopropanol are disinfectants

- Tertiary Alcohol ex Linalol oder 3,7-Dimethyl-1,6-octadien-3-ol is a tertiary alcohol with a floral and fresh smell.





ESTERIFICATION REACTIONS THE ESTERS

- Alcohol I or II + acid <------> ester + H20
- Alcohol III : No esterification reaction with acids

R1-CH20H + R2-COOH <---> H20 + R1-CH2-0-CO-R2 ALCOHOL I + ACID <---> H20 + ESTER

R1-CHOH-R2 + R3-COOH <---> H20 + R1-CH-COO-R3 ALCOHOL II + ACID <--> H20 + ESTER

For us, this means that the skin should never be disinfected with alcohol I or II before applying an acid to the patient's skin. Use better a wipe with cetrimonim (Aseptiskin)

Similarly, after exfoliation, the patient should not wear perfumed clothing or use perfume.

ESTERIFICATION REACTIONS
THE ESTERS

Ethanol as Desinfection
TCA after

Esterification Reaction on the Jowl
Alcohol as Skin Desinfectant + Acid

Courtesy of Dr.Alain Tenenbaum

PRIMARY & SECONDARY ALCOHOLS IN MOST SKINCARE SUNSCREENS SPF30!

- **Cetyl Alcohol used as emollient**
  - primary alcohol
  - High molecular weight
  - $CH_3–(CH_2)14-CH_2OH$

- **Butylene Glycol used as Solvent**
  - primary alcohol & secondary alcohol
  - $CH_2OH-CHOH-CH_3$

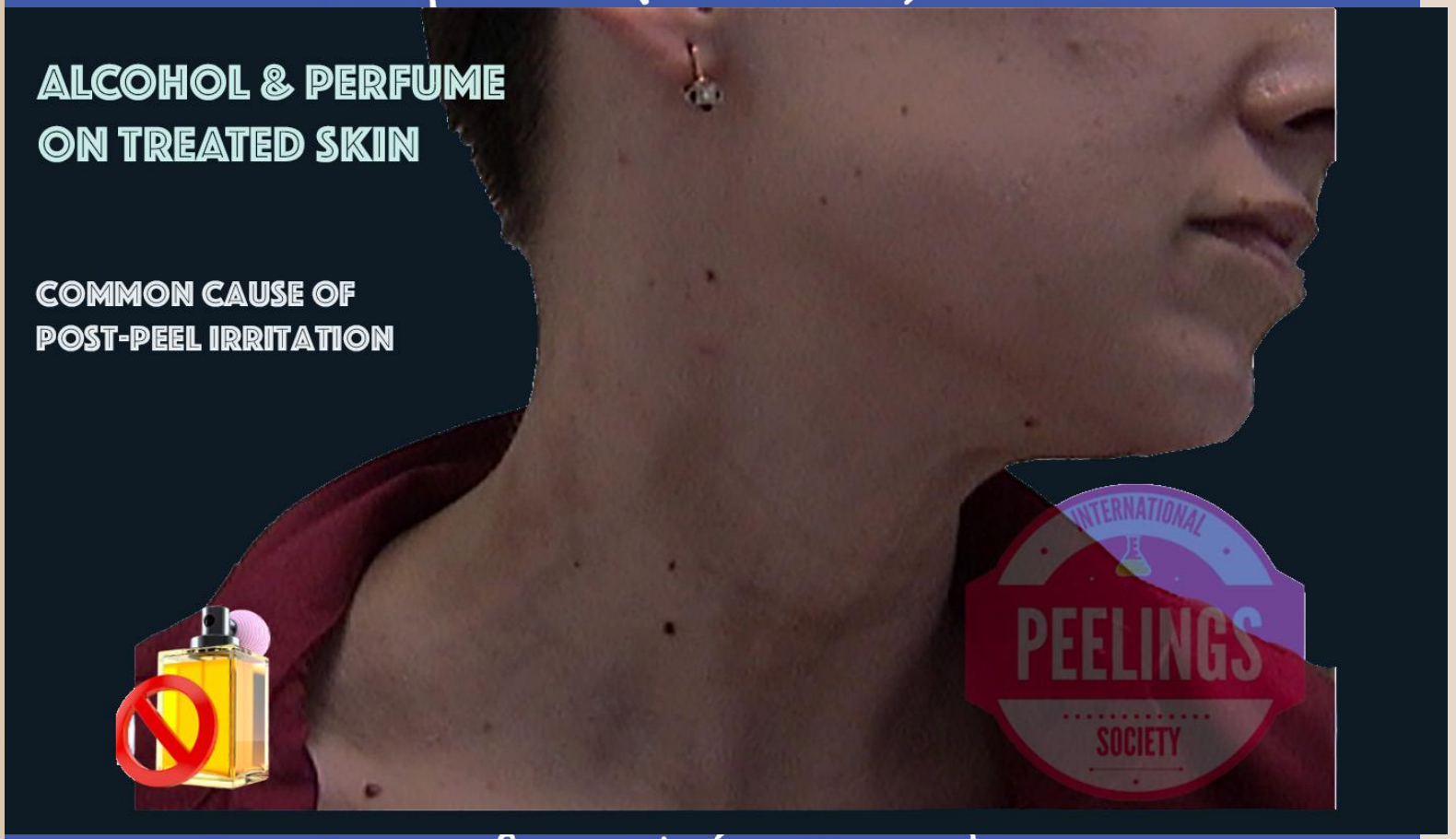
ETHANOL IS UNFORTUNATELY MOSTLY USED AS SKIN DESINFECTANT –SKIN TONICS- SKIN CLEANSERS AND TOO AS ,, DENATURED ALCOHOL !,,

CH3-CH2OH

A denatured alcohol is made unfit for human consumption by adding additives

Esterification Reaction on the Neck

Perfume (Alcohol) + Acid

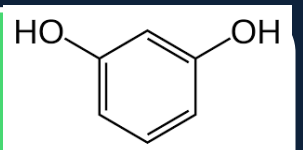


Courtesy of Dr.Alain Tenenbaum

ONE *MIXTURE*
COMBINATION TO KNOW
JESSNER PEEL

100 mg of 95% ethanol !!

14 g of resorcinol (chiral).



It is neither a primary nor a secondary alcohol

14 g of salicylic acid (chiral)
BHA

and 14 ml of lactic acid (chiral)
AHA

OLD FASHION PEEL

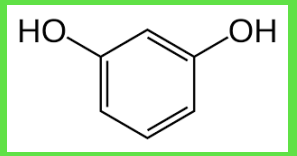
NOT SEQUENTIAL COMBINATION

THIS MODIFIED JESSNER IS FOR ME LOGIC

ONE *MIXTURE*
COMBINATION TO
KNOW
JESSNER PEEL
MODIFIED

5% W/V citric acid (chiral)

20% W/V of resorcinol
(chiral)



10% W/V lactic acid
(chiral)

NOT SEQUENTIAL COMBINATION

Modern PEEL

Acid category	Acid subcategory	pKa>3 rising	pKa=3	pKa<3	pKa1	pKa2	pKa3	L. Dewandre Modified by AT ENANTIOMERS	Number of reactions
Alpha Hydroxy	Aliphatic		Wine A (tartaric)		3.04	4.37		Chiral	2
		Citric A			3.15	4.77	6.40	Chiral	3 Triprotic
		Apples A (malic)			3.40	5.13		Chiral	2 Diprotic
		Glycolic A	Skin does not have a receptor site for glycolic acid.		3.83			Not available	1 monoprotic
		Milk.A (lactic)			3.86			Chiral	1
	Aromatic Benzene ring		Almond.A mandelic		3.37			Chiral	1
Alpha Keto				Grapes Acid (pyruvic)	2.49			Not available	1
Bicarboxylic acid		Azelain a			4.55	5.59		Not available	2
Beta-Hydroxid			Salicylic a		2.97			Chiral Aspirin not chiral	1
TCA				TCA	0.54			caustic	1

CLASSIFICATION DR.L.DEWANDRE modified by A.TENENBAUM

COMBINATION CHEMICAL PEELS VS SINGLE CHEMICAL PEELS IN MILD MODERATE ACNE

Single Chemical Peels	Combination Chemical Peels
TCA 30% W/V	Jessner followed by TCA 20% W/V- **SEQUENTIAL**
Salicylic 30% W/V	Salicylic 20% W/V + Mandelic 10% W/V **MIXTURE**

Side Effects !!!

Treatment Protocol : 6 SESSIONS WITH 2 WEEKS INTERVAL
FOLLOW UP 3 MONTHS AFTER LAST SESSION

OLD FASHION TREATMENT OF ACNE

SEQUENTIAL COMBINATION > MIXTURE COMBINATION

Mild Acne treatment with no side effects since 26 years !

NEUTRALIZATION OF AN ACID
PH REGULATION
AND EXOTHERMIC REACTION (RELEASE OF THERMAL ENERGY)

- Ex HCl + NaOH → NaCl + H20 + Q

Hydrochloric acid + caustic soda -> table salt + water + Q

Acid + Base → Salt + Water + Q

(pH<7) + (pH>7) -> pH=7

Products which are pH Regulators of Peels acids

NaHCO3 (sodium bicarbonate salt) instead of NaOH (base) (IMPORTANT) is not a frosting stopper but increases the pH

PEELING DE LUXE PLUS

(frosting stopper) for your emergency equipment stops the duration of the low pH effect of the peelings acid

NEVER ADD WATER because Acid+ H20 = Q (combustion)

PH REGULATION AND NEUTRALIZER

NaHCO3

Not frosting stopper

Use for acid with pKa>3

FROSTING STOPPER

for your emergency equipment

Use for acid with pKa <3

BUFFER OR TAMPON
PKA = PH

- A buffer solution is used to limit fluctuations in pH.
- If you want to buffer a ,,weak,, acid , you need to use a strong base salt
- Best : NaHC03 and as well as peeling de luxe plus
- *It's up to you to buffer*, but do not buy products containing acid + buffer in the same bottle
- **Some companies sell, "buffered TCA »which is responsible of pigmentary rebounds !**

COSMETIC CREAMS SHOULD NOT CONTAIN

1. Primary or secondary alcohols (esterification)
2. Acids with pKa <3
3. Phenol
4. Aldehydes without antioxidants
5. Comedogenic agents
6. Allergic INGREDIENTS
7. Acne pathogens
8. Not INCI Ingredients
9. Animal collagen (sheep, beef, chicken, pig)
10. Huge amounts of preservatives (parabens..)

COMEDOGENIC INGREDIENTS

in post-peel cosmetic formulations

HIGHLY COMEDOGENIC INGREDIENTS

- Lanolin / Lanolin Alcohol
- Isopropyl Palmitate
- Isopropyl Myristate
- Butyl Stearate
- Octyl Stearate
- Laureth-4 / Laureth-23
- Ethylhexyl Palmitate

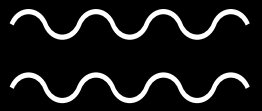
Clinical note: post-peel barrier recovery increases susceptibility to comedogenic flares.

Potentially comedogenic depending on concentration

- Petrolatum
- Paraffinum liquidum
- Mineral oil
- Dimethicone (certain grades)

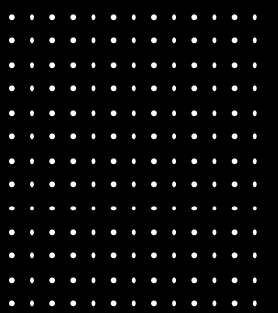
Always check the INCI list before using a cosmetic product after a peel.

CHOOSE PRODUCTS WITH LOWEST MOLECULAR MASS



Home care must include

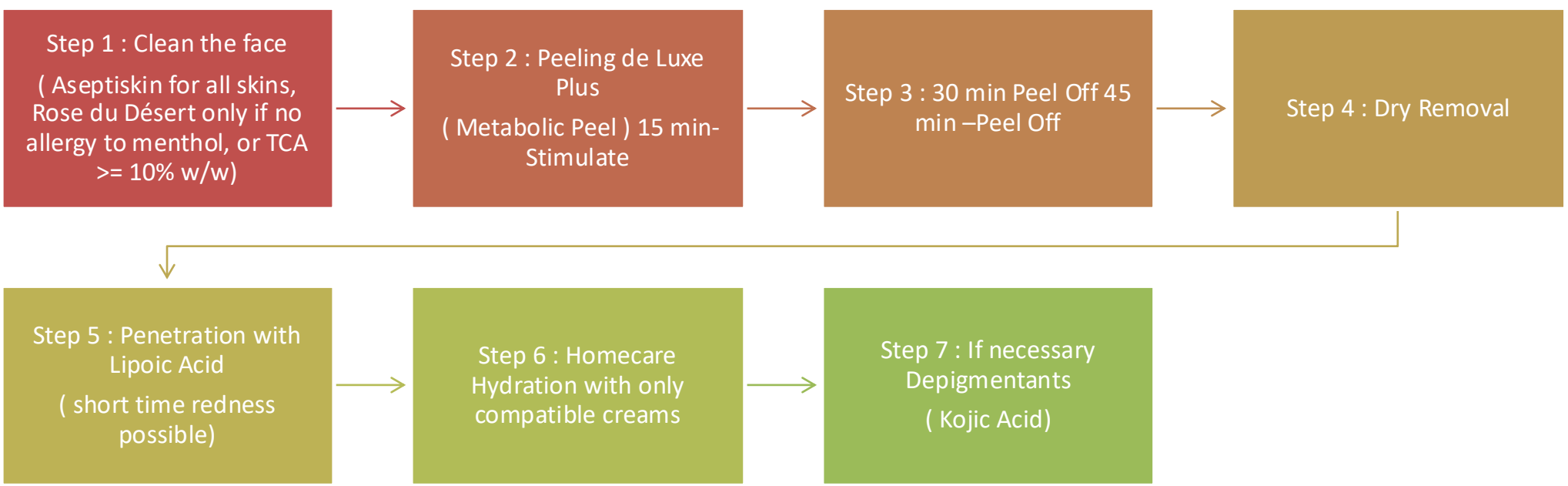
1. Anti-UVA, Anti-UVB without Alcohols (no sunscreens) -> melasma story
2. Antioxidants
3. Anti free radicals
4. Hydratant factors
5. Vitamin factors
6. Depigmentation agents (choose them)
7. Triprotic or Diprotic Acids with high pKa, which continue the peeling effect
8. Sea vegetable collagen
9. Avoid parabens



MEDICATIONS THAT CAUSE ACNE

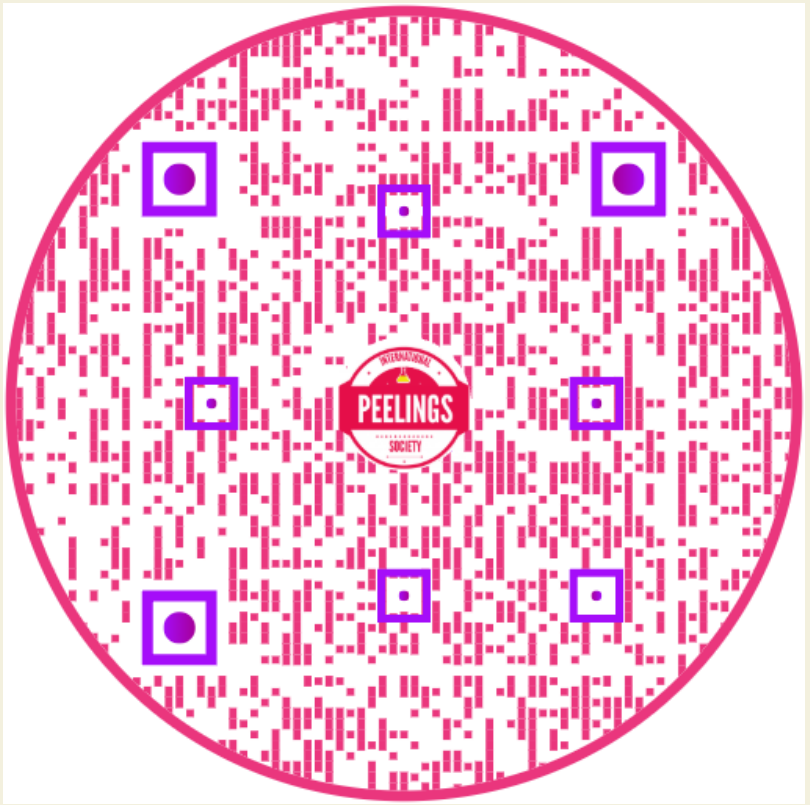
- Steroids
- ACTH hormone
- Antiepileptics: phenytoin,phenobarbital
- Vitamins: B1, B6, B12
- Halogens: fluorine, bromine, iodine
- Androgens: anabolic, danazol
- Tetracyclines
- Isoniazid
- Lithium
- Quinidine
- Amineptine
- Thyroid hormone
- Ammonium salts
- Chemotherapy: actinomycin D.
- Thiourea

TREATMENT PROTOCOL OF MAURO TIZIANI , MOLECULAR BIOLOGIST FOR MOST INDICATIONS, VALID FOR ALL SKIN TYPES IN ANY SEASONS



MAIN PROTOCOL METABOLIC PEELS

Protocol Metabolic Peels



Peeling on Black Skin
Metabolic Peels-Protocol of Mauro Tiziani

BEFORE

AFTER

Courtesy of Dr.Alain Tenenbaum

Peeling on Black Skin
Metabolic Peels-Protocol of Mauro Tiziani

BEFORE

AFTER

Courtesy of Dr.Alain Tenenbaum

Peeling on Latino (Argentina) Skin
Metabolic Peels-Protocol of Mauro Tiziani

BEFORE

AFTER

Courtesy of Dr.Alain Tenenbaum

Peeling on Latino (Argentina) Skin
Metabolic Peels-Protocol of Mauro Tiziani

BEFORE

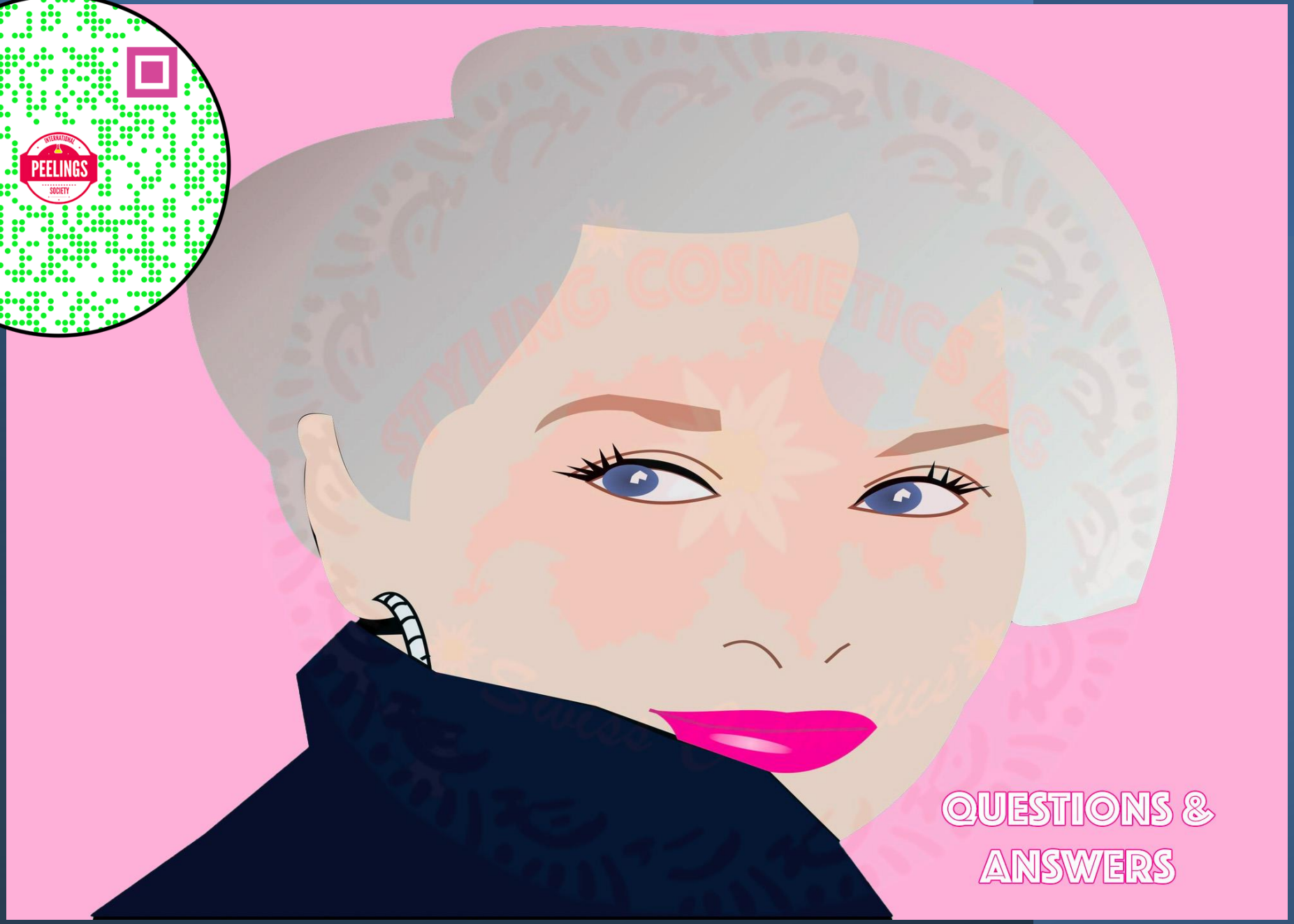
AFTER

Courtesy of Dr.Alain Tenenbaum

AESTHETIC TREATMENTS MAINLY USED BY COSMETOLOGISTS

Milchsäure (Lactic Acid)	Azelainsäure Azelaic Acid	Mandelsäure Mandelic Acid	Kojisäure (in Cremes) Kojic Acid	Phytinsäure Phytic acid	Glykolsäure Glycolic acid
- Keratoregulator ++ ~~- Skin lightener~~ - Bacteriostatics - Stimu~~lates cell differentiation~~ ~~- Moisturizing~~	- Skin lightener - Bacteriostatics - Anti-oxidant - Keratoregulator + - Moisturizer	- Keratoregulator +++ - Bacteriostatics - ~~Moisturizing~~	-Tyrosinase-Inhibitor -Depigmentation	~~- Melanin Formation Blocker~~ - Anti-oxidant ??	- Good results (epidermal enzymes) ~~- Dispersion of melanin of the basal layer~~ - Keratoregulator +++ ~~- Moisturizing~~

Medical supervision is helpful in reducing the risk of post-inflammatory hyperpigmentation PIH that has been observed with the use of these products.

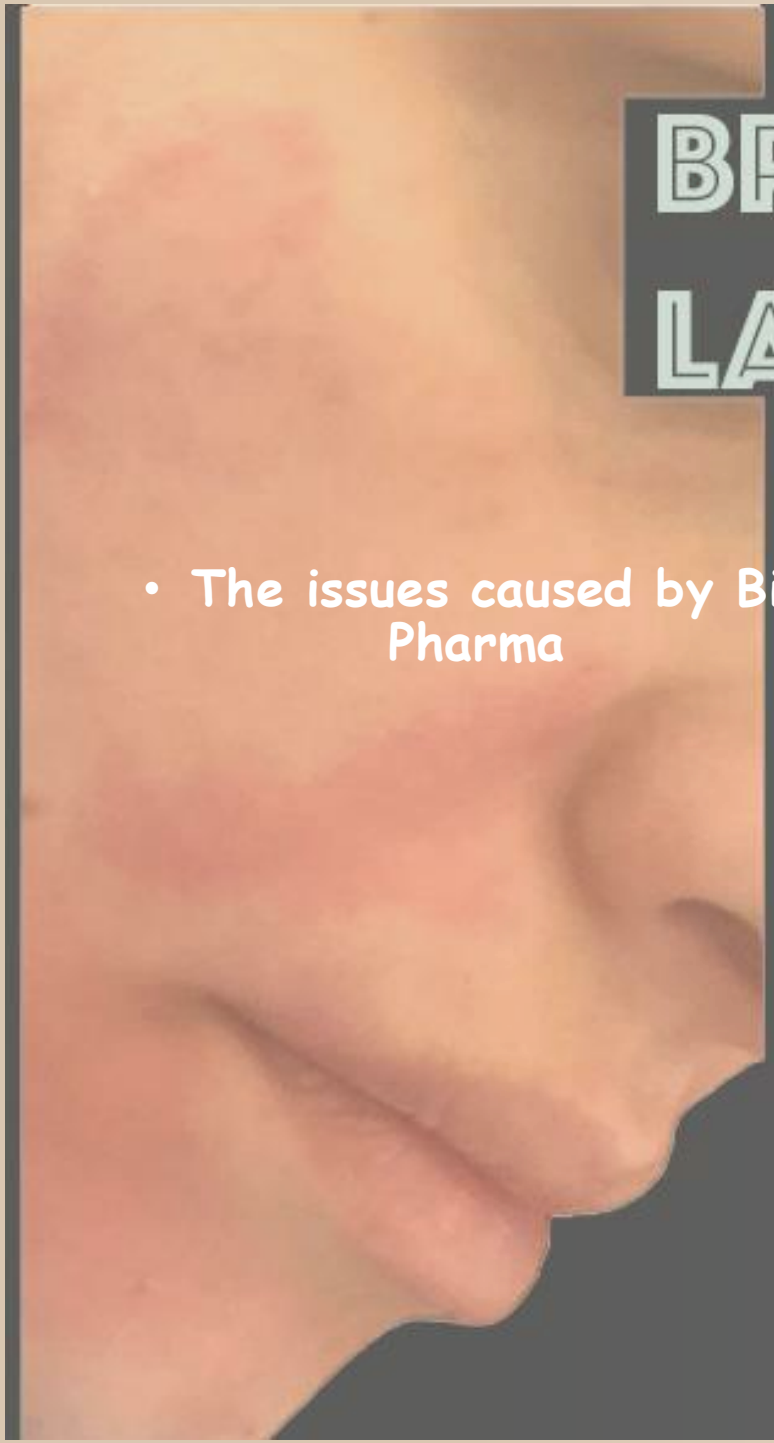

QUESTIONS &
ANSWERS

CHOOSING THE RIGHT ACID : LACTIC ACID VS. TCA VS. SALICYLIC ACID

Property	Lactic Acid	TCA (Trichloroacetic Acid)	Salicylic Acid
Chemical Type	AHA	Medium-depth chemical acid	BHA
Main Actions	Gentle exfoliation	Resurfacing, pigmentation, texture	Keratolytic, seboregulating, anti-acne prone skin
Penetration Depth	Superficial	Superficial to medium	Superficial
Skin Type Suitability	Dry, sensitive, dehydrated skin	Photodamaged, aged, thick skin	Oily, acne-prone skin
Risk of PIH	Moderate to high	Moderate to high (especially in dark skin)	Moderate
Downtime	Moderate to significant	Moderate to significant	Mild to moderate
Best for	~~Brightening~~	Deep pigmentation, lines, texture	Acne Prone Skin, comedones, enlarged pores
Hydrating	No	No	No
Common Side Effects	Temporary redness, stinging	erythema	Dryness, stinging

- Lactic Acid is ideal for gentle, no-downtime treatments in sensitive or dry skin. But for my own opinion never use it.
- TCA offers deeper results but must be used with caution, especially on darker skin types.
- Salicylic Acid is the go-to for ,, oily,, acne prone skin and oily skin management.

Tip: Always consider skin type, medical history, and desired outcomes when choosing a peeling agent.



BRAND NAME LACTIC COMPLICATION

- The issues caused by Big Pharma

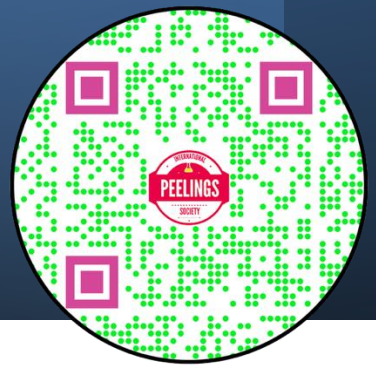
Complications of Brand Names Peels with Big Marketing & Poor Chemistry Knowledge (Spain,Uruguay,Ecuador,Argentina Korea,China,Poland,Austria...)

PEELS VS LASERS

	Peelings	Lasers
Goals	Peels involve applying a chemical solution to the skin, which exfoliates the outer layers, promoting cell turnover and revealing fresher, smoother skin.	Laser treatments use focused light to target specific layers of the skin, stimulating collagen production and improving skin texture.
Advantages	• Effective for texture issues like fine lines, acne scars, and pigmentation. • No need for expensive equipment. • Minimal risk when used correctly. • Generally less expensive than lasers.	• Targeted treatment for specific concerns like pigmentation, vascular issues, and deeper wrinkles. • Stimulates collagen production for long-term skin improvements. • Can offer more precise results with less risk of post-inflammatory pigmentation (depending on the type of laser).
Disadvantages	• Potential for side effects like irritation, redness, or pigmentation changes (especially with deep peels). • Downtime can vary depending on the depth of the peel.	• More expensive than peels. • Can involve more downtime, especially with more aggressive lasers. • Potential for side effects like hyperpigmentation or scarring (especially if not done correctly).

	Peelings. (M.D)	Hydrafacial (Cosmetician)
How it works	Chemical peels involve applying a chemical solution to the skin, which causes the top layers to **exfoliate and peel off.**	Hydrafacial is a non-invasive treatment that combines **cleansing**, exfoliation, extraction, hydration, and antioxidant protection. It uses a specialized device that vacuums out impurities and infuses the skin with hydrating serums.
Benefits	• **Improves skin texture** and tone. • **Reduces fine lines and wrinkles**. • **Treats acne** by unclogging pores and reducing oil production. • **Brightens pigmentation** (e.g., melasma, age spots). • **Results are typically more dramatic**	• **Instant hydration** and glow. • **Gentle exfoliation** • **Improves skin texture and appearance**. • **No downtime** • **Targets a wide range of concerns**, such as acne, fine lines, hyperpigmentation, and dullness. • **No risk of peeling** as it's more a "**deep cleansing" than a full exfoliation.**
Intensity	• more intense • longer-lasting results	• Gentler
Downtime	• Peeling • redness post-treatment.	• No downtime
Customization	• higher degree of customization based on skin type and concerns	• Customization , especially in terms of serums used, but are more focused on hydration and exfoliation (gommage)
Maintenance		• **hydration, quick glow**, maintain a perfect hydrafacial

Peels vs Microneedling



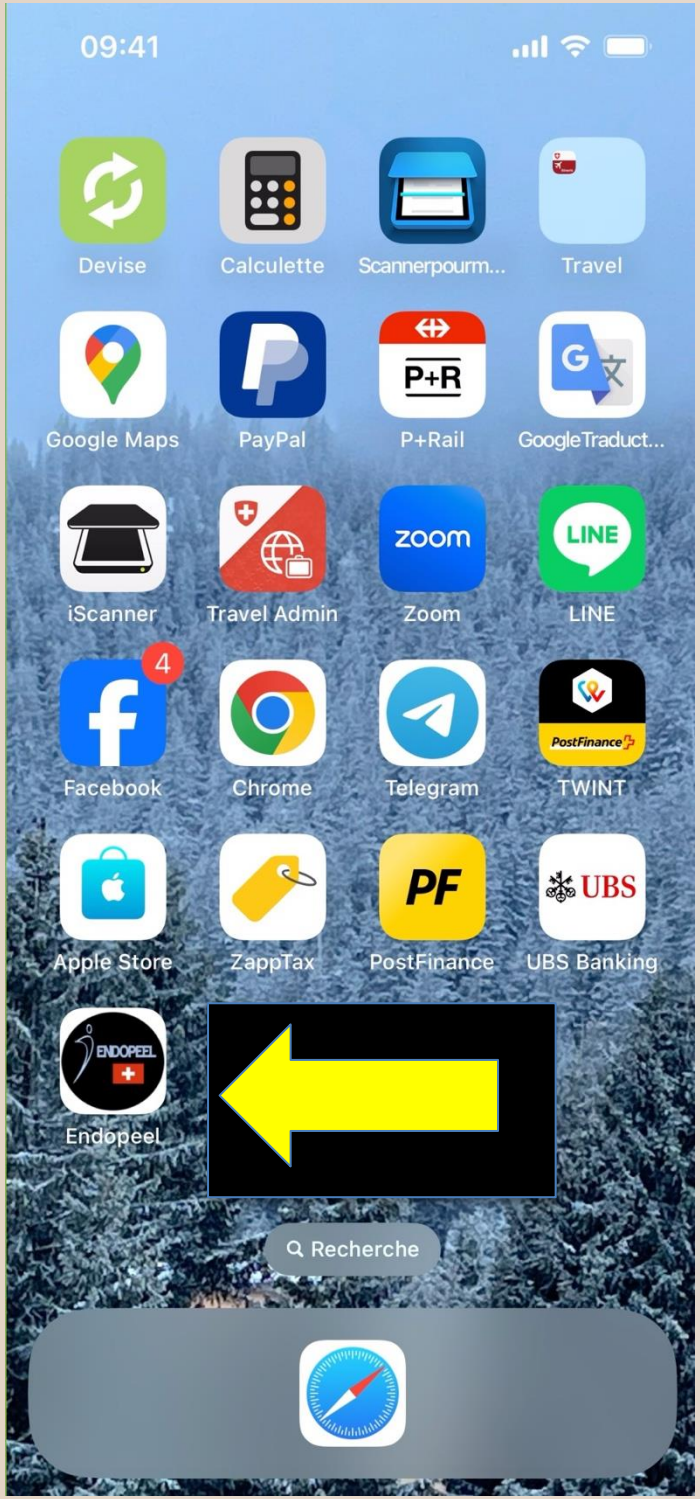
	Peelings	Microneedling
Mechanisms of Action	• *Chemical* Exfoliation • Skin Regeneration	• *Physical* Stimulation to get Collagen Production through • Micro Injuries
Treatment Depth	• All layers but superficial layers are mostly diffused	• Deeper Layers
Downtime	• Desquamation • Redness for deep ones	• *No desquamation* • Redness • *Swelling*
Indications	• Pigmentation Issues • Fine Lines • Texture • *Immediate* Results	• Collagen Boosting • Tackling Scars • Advanced Aging Concerns
Recommandations	• Use **Lipoic Acid** to allow a better penetration	• Can be done after a light peeling to enhance results • To get deeper use bestens **Lipoic Acid**

emergency-skin-rash-kit

APP „ ENDOPEEL„

VALID TILL SUMMER 2026

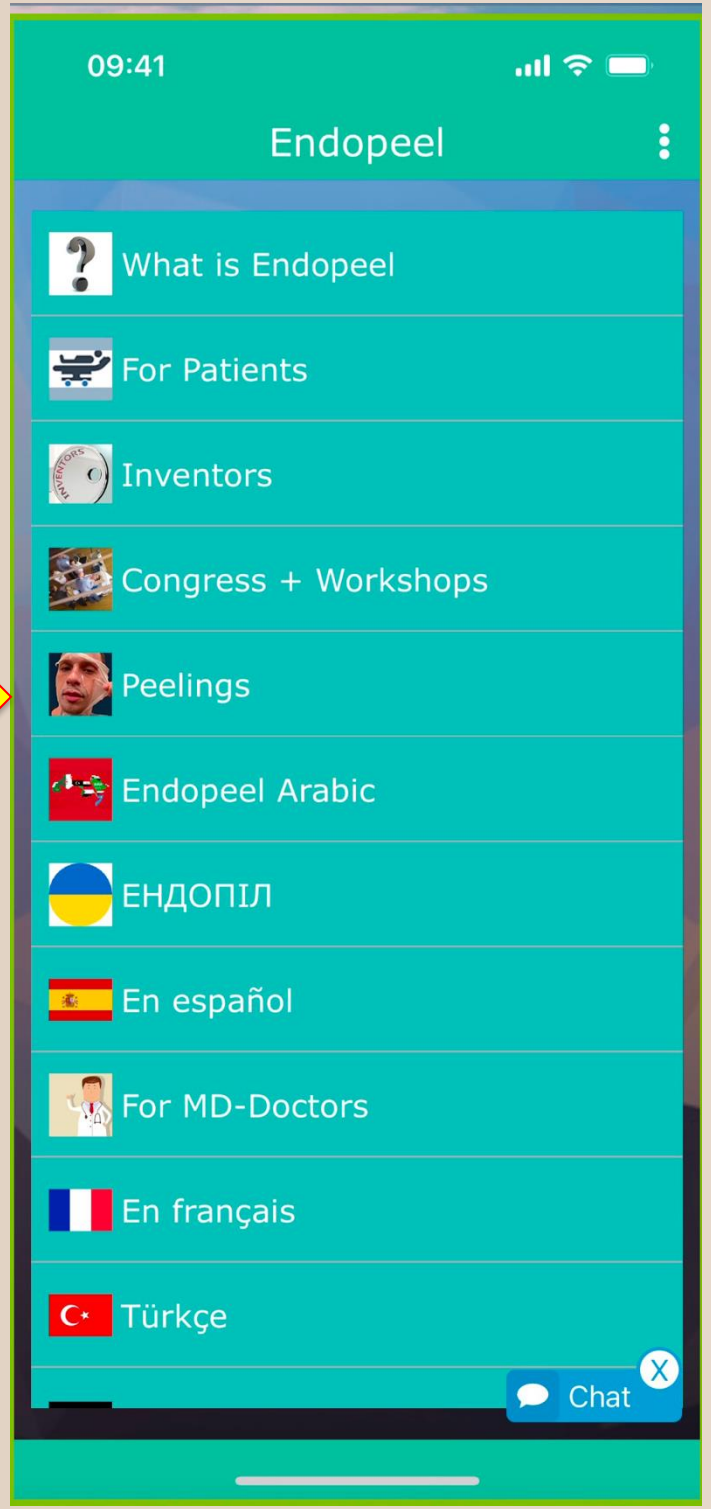
ON APPLESTORE & GOOGLEPLAY



APP „ ENDOPEEL„

VALID TILL

SUMMER 2026



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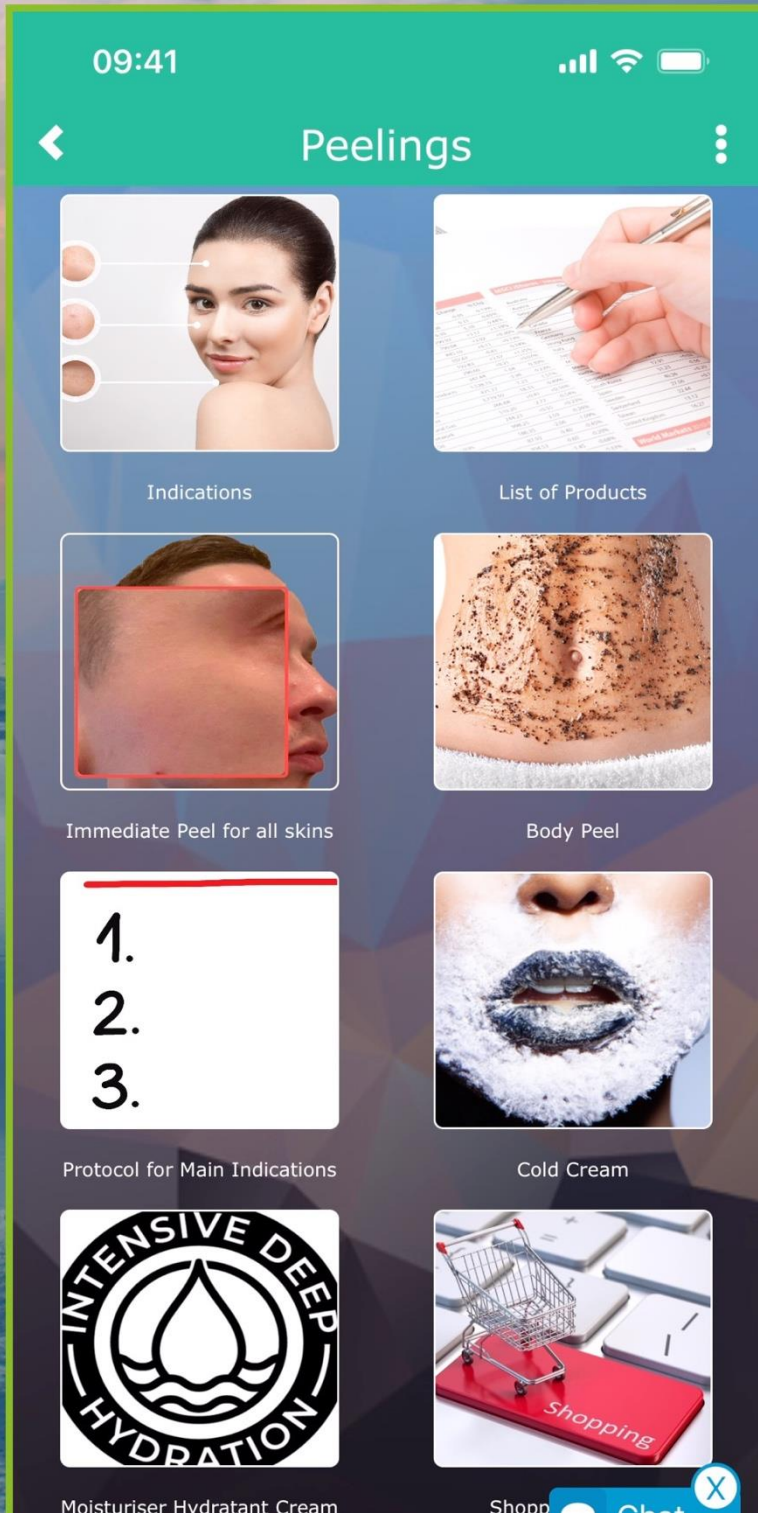
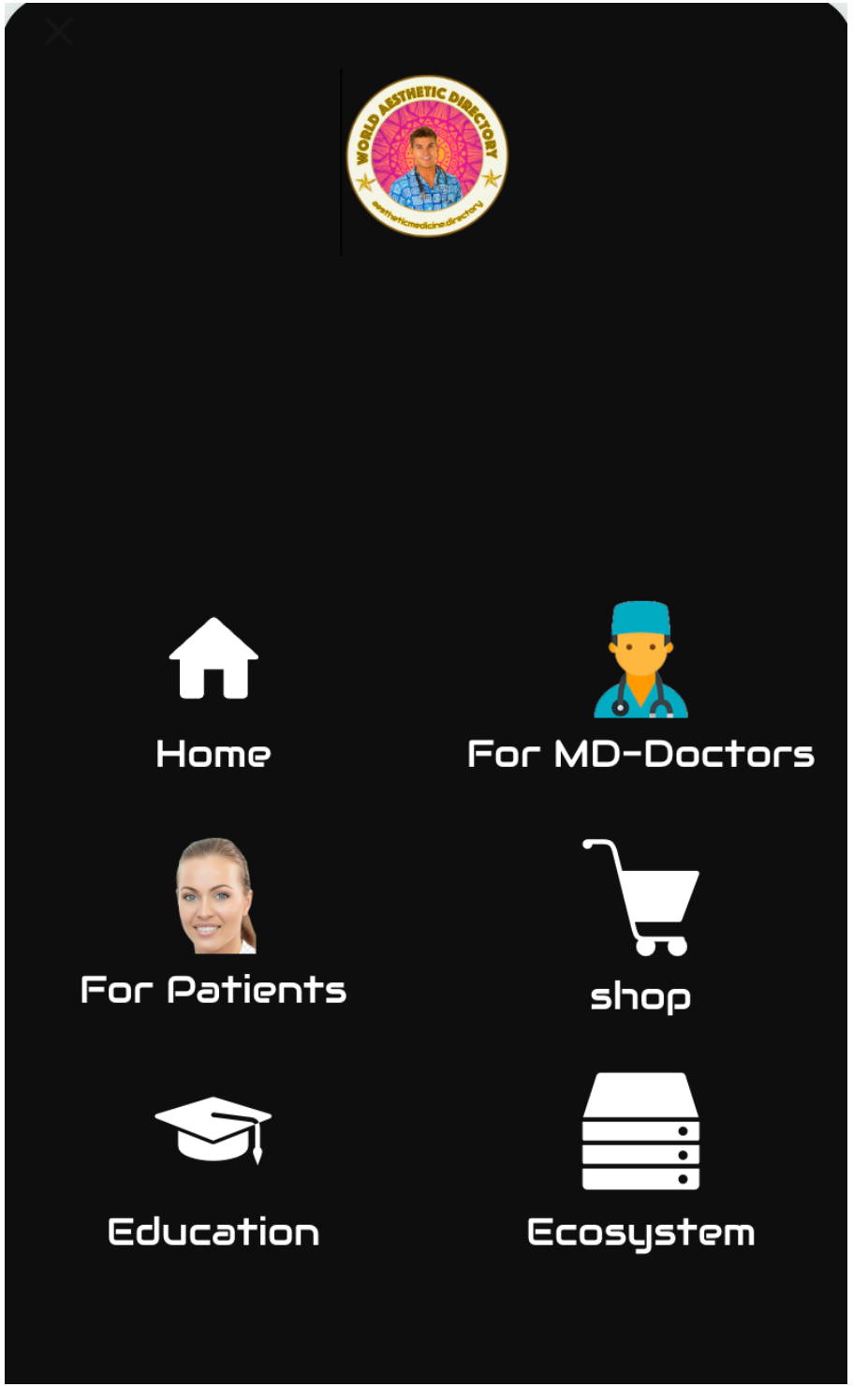
valid till summer 2026



AesthetiMedica

SOON BEFORE SUMMER 2026 NEW APP : AESTHETIMEDICA



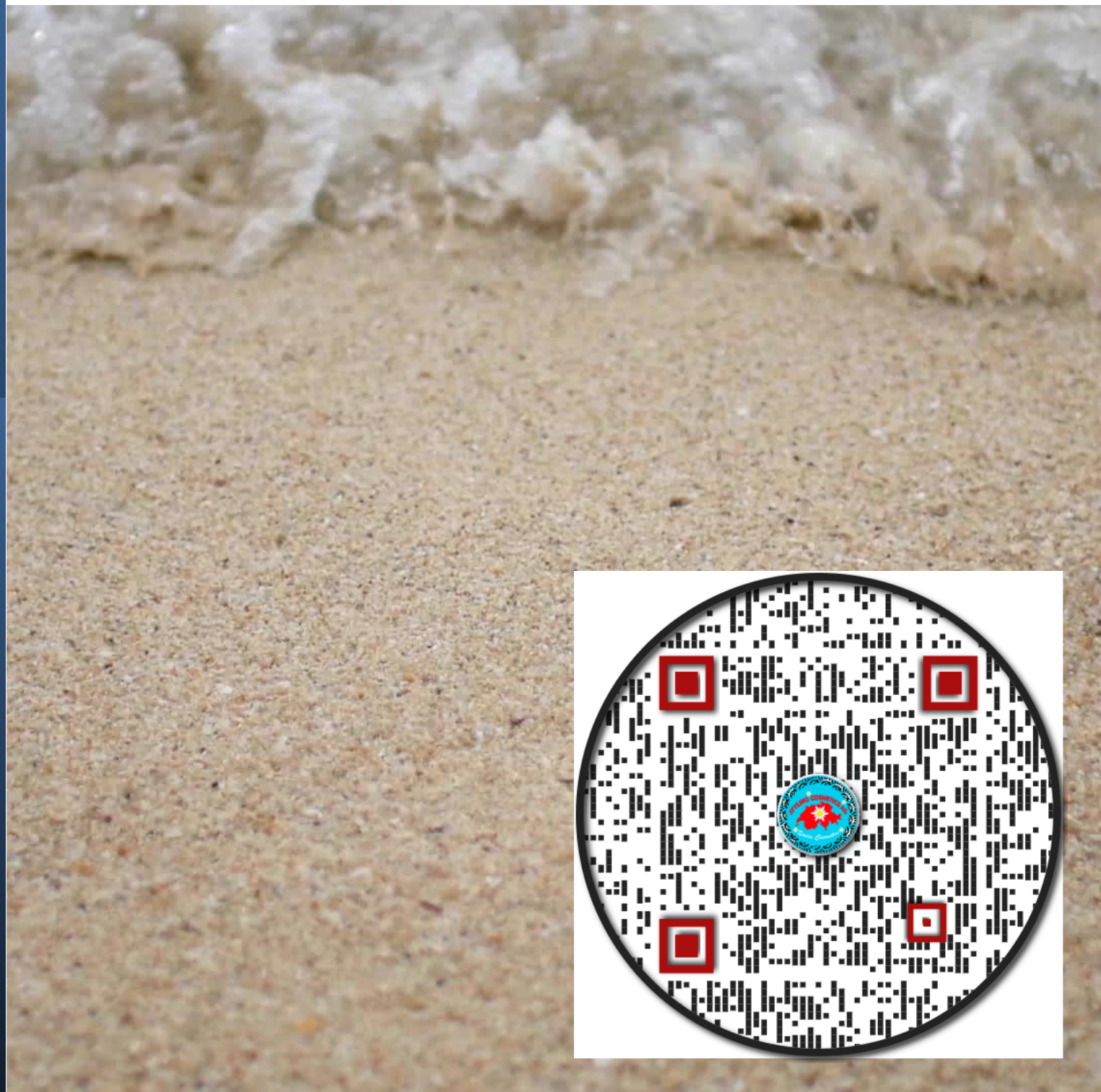
BRING HOME THIS MESSAGE

- Peelings should be done the day of sutures removals, even on the scars
- If peelings are done without previous surgery, OUR peelings can be done by your MPA
- Do not use ,, cocktail peelings,, made in countries without knowledge of chemistry
- Do not use phenol peelings which can be lethal, with stricted limited indications, which need OP room with anaesthesist and which cant be controlled as surgery

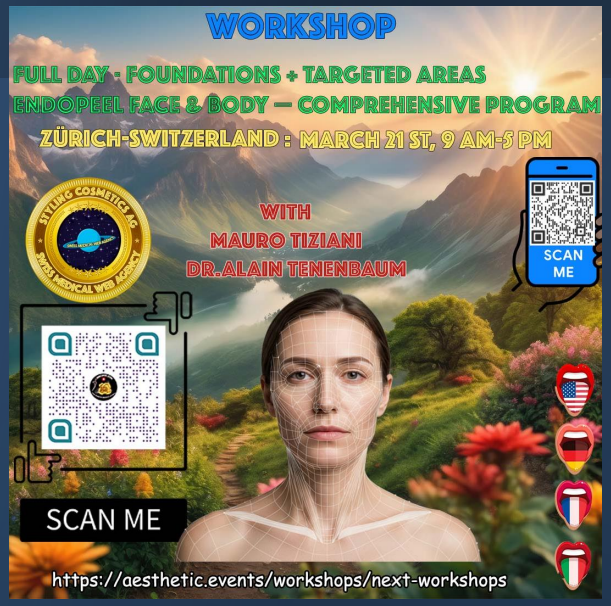

THE GOOD
DINOSAUR

GET QUICKLY TANNED WITHOUT BURNS

How to get quickly and deep tanned without burns



Next Workshops in Zürich



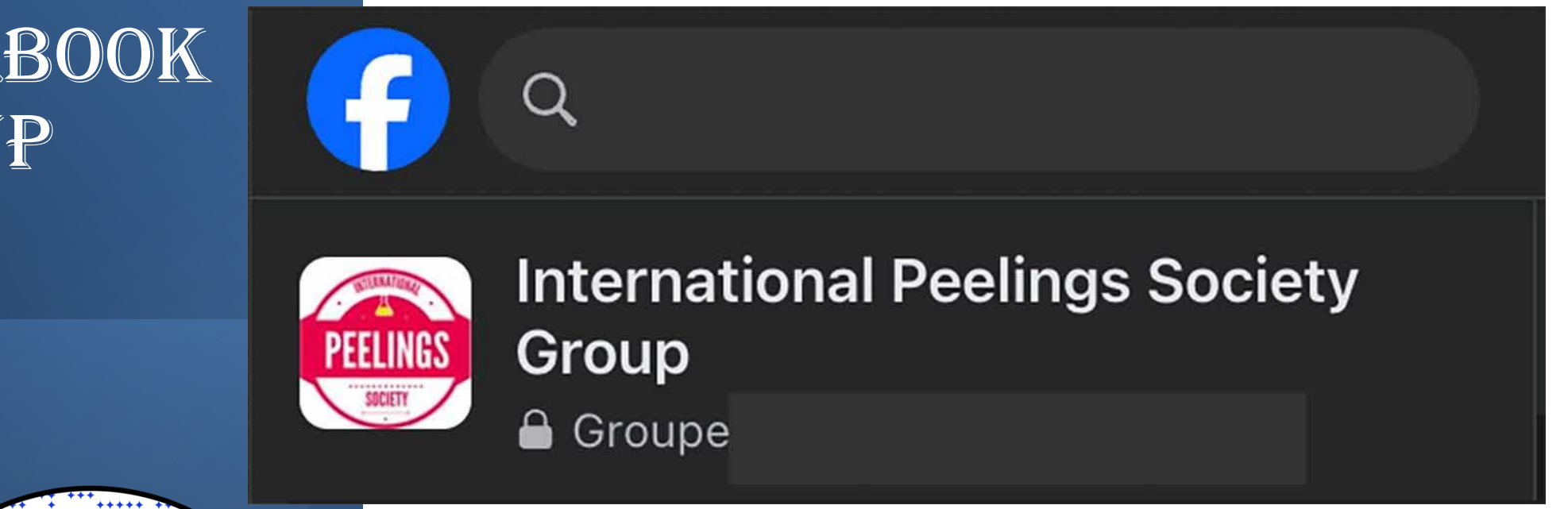
DURING COFFEE BREAK I CAN HELP YOU FOR

DURING THE COFFEE BREAK

Become a Member

MEMBERSHIP

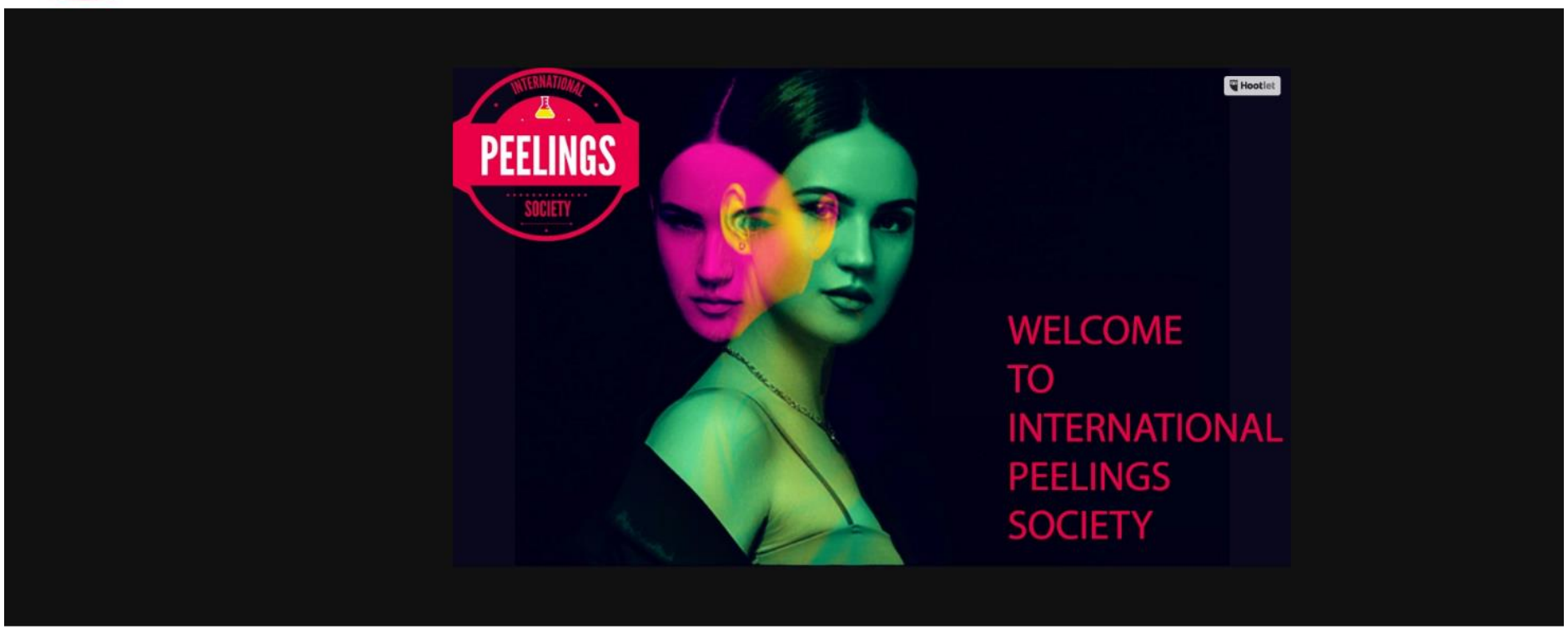
FACEBOOK GROUP

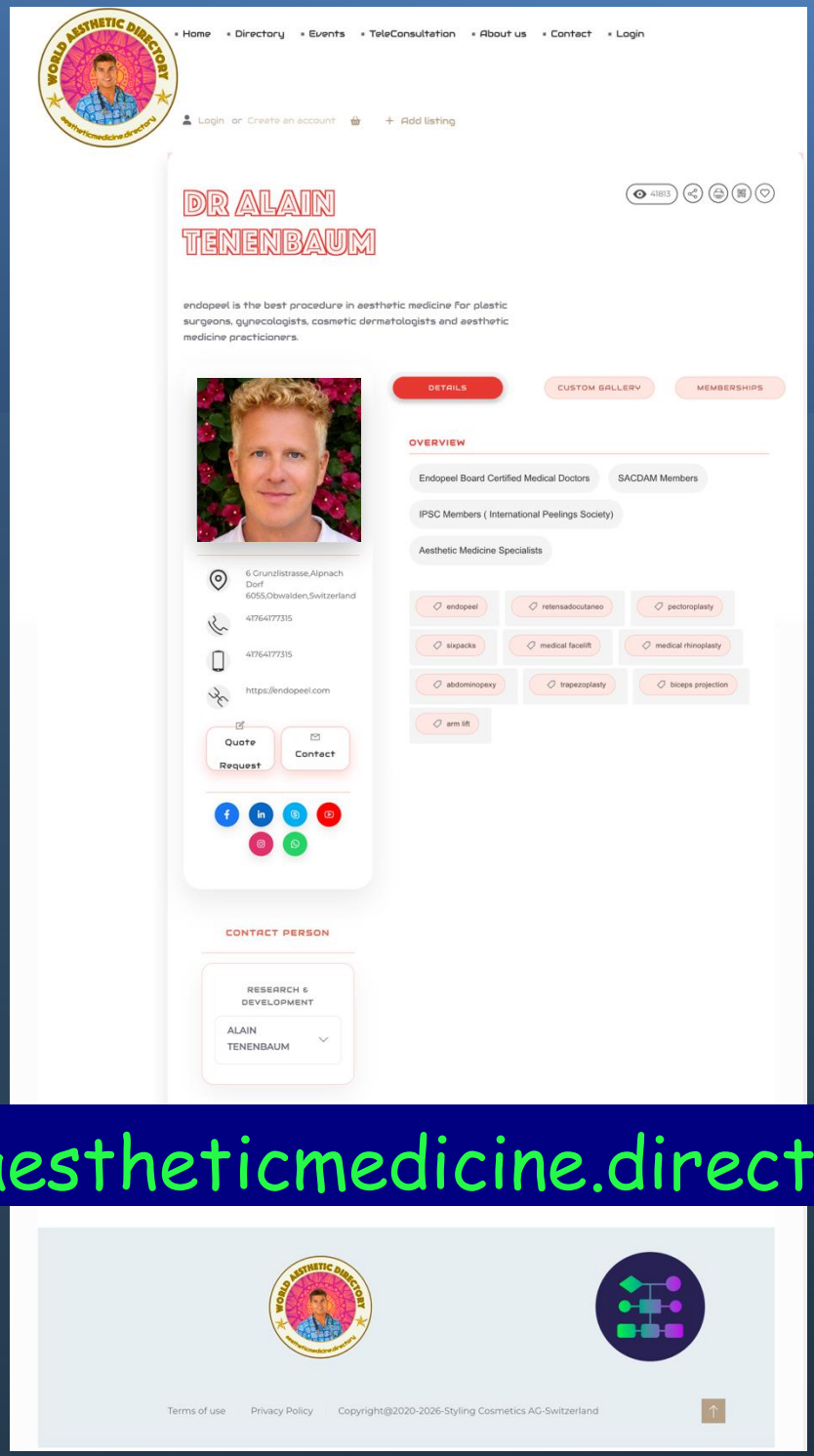


ask to be inside this group

link to website

HOME MISSION PEELINGS INVENTORS BOARD MEMBERSHIP





https://aestheticmedicine.directory/your-name

TENENBAUM

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DETAILS | CUSTOM GALLERY | MEMBERSHIPS

OVERVIEW

- Endopeel Board Certified Medical Doctors
- SACDAM Members
- IPSC Members (International Peelings Society)
- Aesthetic Medicine Specialists

endopeel | retensadocutaneo | pectoroplasty | sixpacks | medical facelift | medical rhinoplasty | abdominopexy | trapezoplasty | biceps projection

CONCLUSION

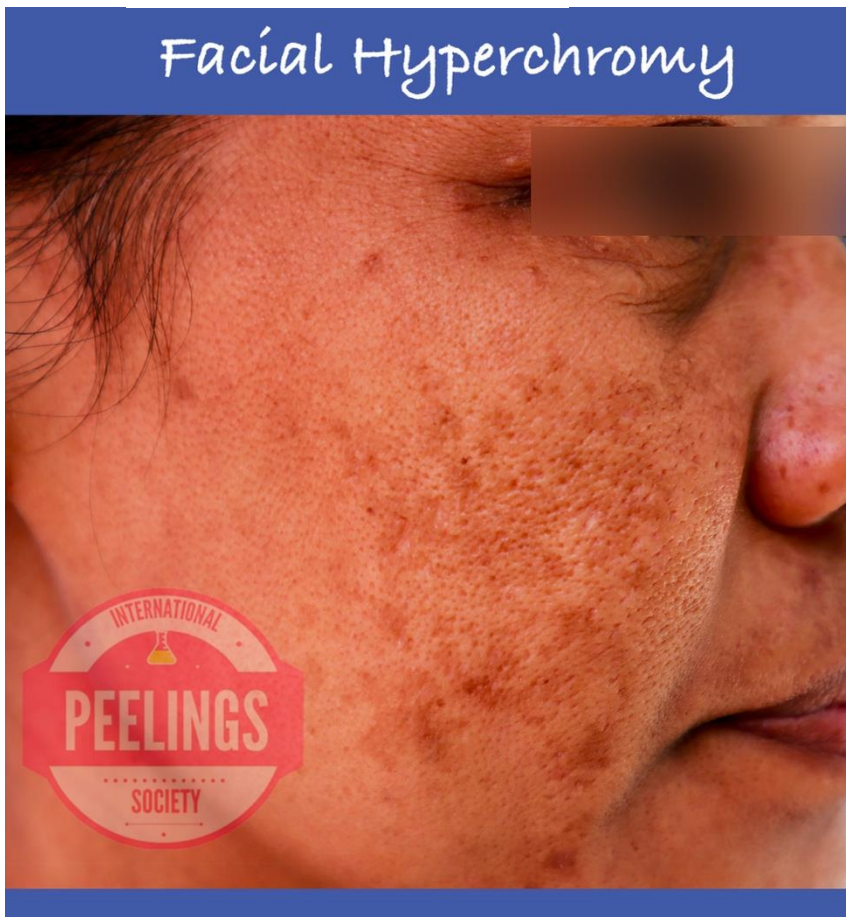
CHEMISTRY PROVIDES TOOLS.

BIOLOGY DEFINES OUTCOMES.

CLINICAL RESPONSIBILITY IS KNOWING THE DIFFERENCE.

NEXT LECTURE

HYPERPIGMENTATION



Introduction to Hyperpigmentation

Hyperpigmentation refers to the *darkening of the skin* due to an *increase in melanin production or deposition*. It can occur in localized areas or over larger areas of the body. This condition is commonly seen in clinical practice and can result from a variety of intrinsic and extrinsic factors.

Definition

- **Hyperpigmentation** is the condition in which certain areas of the skin become darker than the surrounding skin due to an excess production of melanin. It can be either focal (localized) or diffuse (spread over a larger area) and is often a cosmetic concern for patients. *Hyperpigmentation is not a single disorder but rather a clinical manifestation of various underlying pathophysiological processes*.

Specific types of hyperpigmentation

- *melasma*
- *post-inflammatory hyperpigmentation*
- *Lentigines*

CONCEPTS OF A.TENENBAUM & M.TIZIANI

Targeting the pigment directly

(ColorKiller – non-cytotoxic metabolic approach)

-Acts on **abnormal melanin accumulation**, not on normal melanocytes

-Targets **pathologic pigment retention** within the eidermis

-Does **not inhibit physiological melanogenesis**

By inducing controlled protein coagulation affecting abnormal pigment retention

Complete frosting is required on the hyperpigmented lesion itself;
peri-lesional areas must be managed separately to prevent demarcation lines.

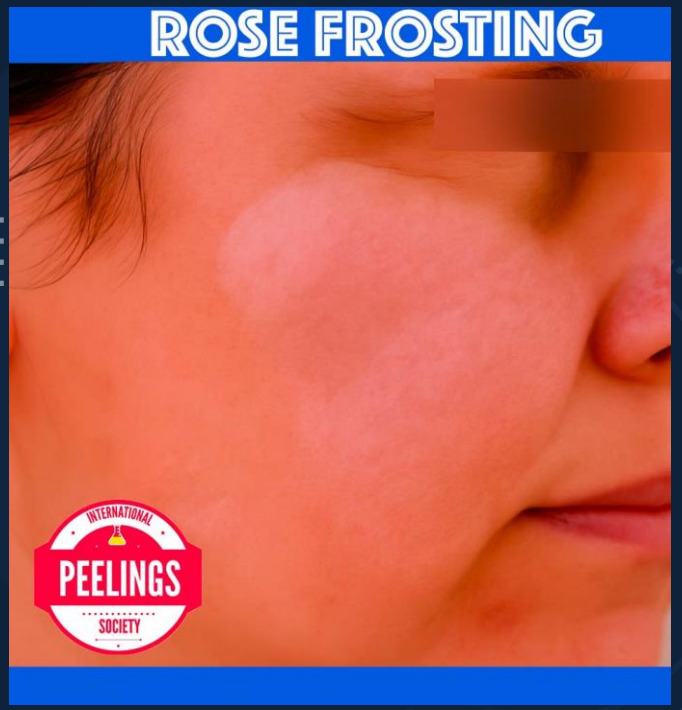
Addressing the 3 key compartments of melanin metabolism

- **Production**: *normalization , not suppression* (Modifying the melanogenesis process to reduce melanin synthesis.)
- **Transport**: *limiting abnormal melanosome transfer* (Interfering with the movement of melanin within the skin to prevent uneven distribution.)
- **Destruction**: *Control removal of excess pigment* (Enhancing the breakdown and removal of excess melanin from the skin.)

Colorkiller is a metabolic regulator, not a chemical depigmenting agent

FROSTINGS

Targeting the pigment (ColorKiller)



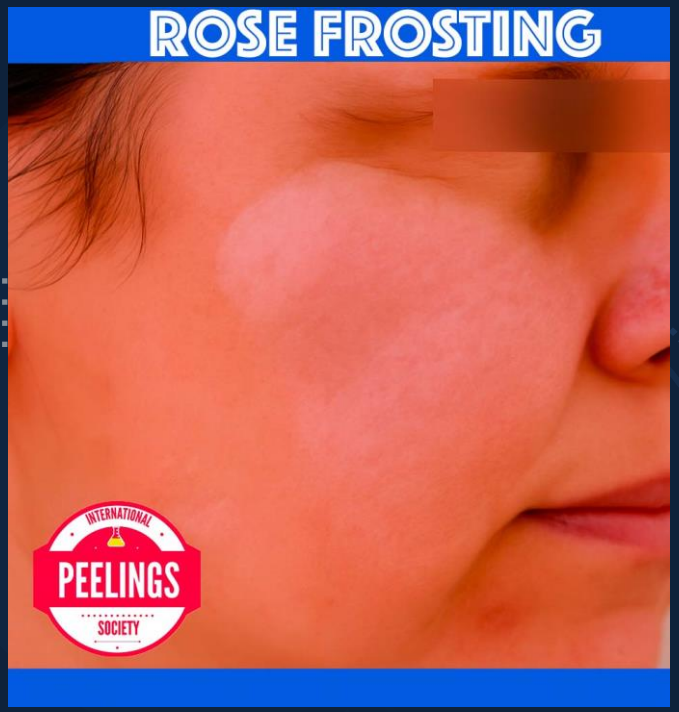
Superficial protein coagulation
(early epidermal response)

Intermediate coagulation with pigment interaction
(active ColorKiller phase)

Dense protein coagulation
(maximum pigment coverage on lesion)

FROSTINGS & TCA

Targeting the pigment (ColorKiller)



Frosting intensity reflects protein coagulation patterns,
not the depth of tissue injury nor the TCA concentration alone.

Targeting the pigment (ColorKiller)

The frosting has to <u>completely</u> cover the hyperpigmented areas

DO'S

Incomplete frosting may lead to insufficient correction or post-inflammatory hyperpigmentation

Residual untreated pigment areas can act as triggers for rebound pigmentation.

FROSTING DOESNT COMPLETELY COVER THE HYPERPIGMENTED AREAS ON THIS ASIAN MALE PATIENT

Courtesy of Dr.Alain Tenenbaum

DO'S

White Frosting appearing over existing Crusts at 2nd or 3rd Session

The goal is pigment control, not mechanical crust removal.

FROSTING APPEARING OVER EXISTING CRUSTS

Courtesy of Dr.Alain Tenenbaum

Complication Observed After Chemodermabrasion Performed by a Dermatologist

Demarcation lines result from abrupt transitions between treated and untreated skin.

They reflect insufficient peri-lesional management rather than excessive treatment.”

POST CHEMO-DERMABRASION DEMARCATION LINE

INTERNATIONAL PEELINGS SOCIETY

Courtesy of Dr.Alain Tenenbaum

Targeting the pigment (ColorKiller)

Degressive Concentrations (from higher to lower) around the lesion are the Best Option to avoid Demarcation Lines.

Don’t forget to treat WHOLE FACE even for a small loco-regional lesion ! (A.TENENBAUM)

The TCA Mosaic Approach allows selective pigment correction while preserving progressive transitions between treated and untreated skin.

THE TCA MOSAIC APPROACH FOR TREATING A DEMARCATION LINE

INTERNATIONAL PEELINGS SOCIETY

Courtesy of Dr.Alain Tenenbaum

CORRECTION-STABILIZATION-MAINTENANCE

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THE TCA MOSAIC APPROACH FOR TREATING A DEMARCATION LINE

INTERNATIONAL PEELINGS SOCIETY

Courtesy of Dr.Alain Tenenbaum

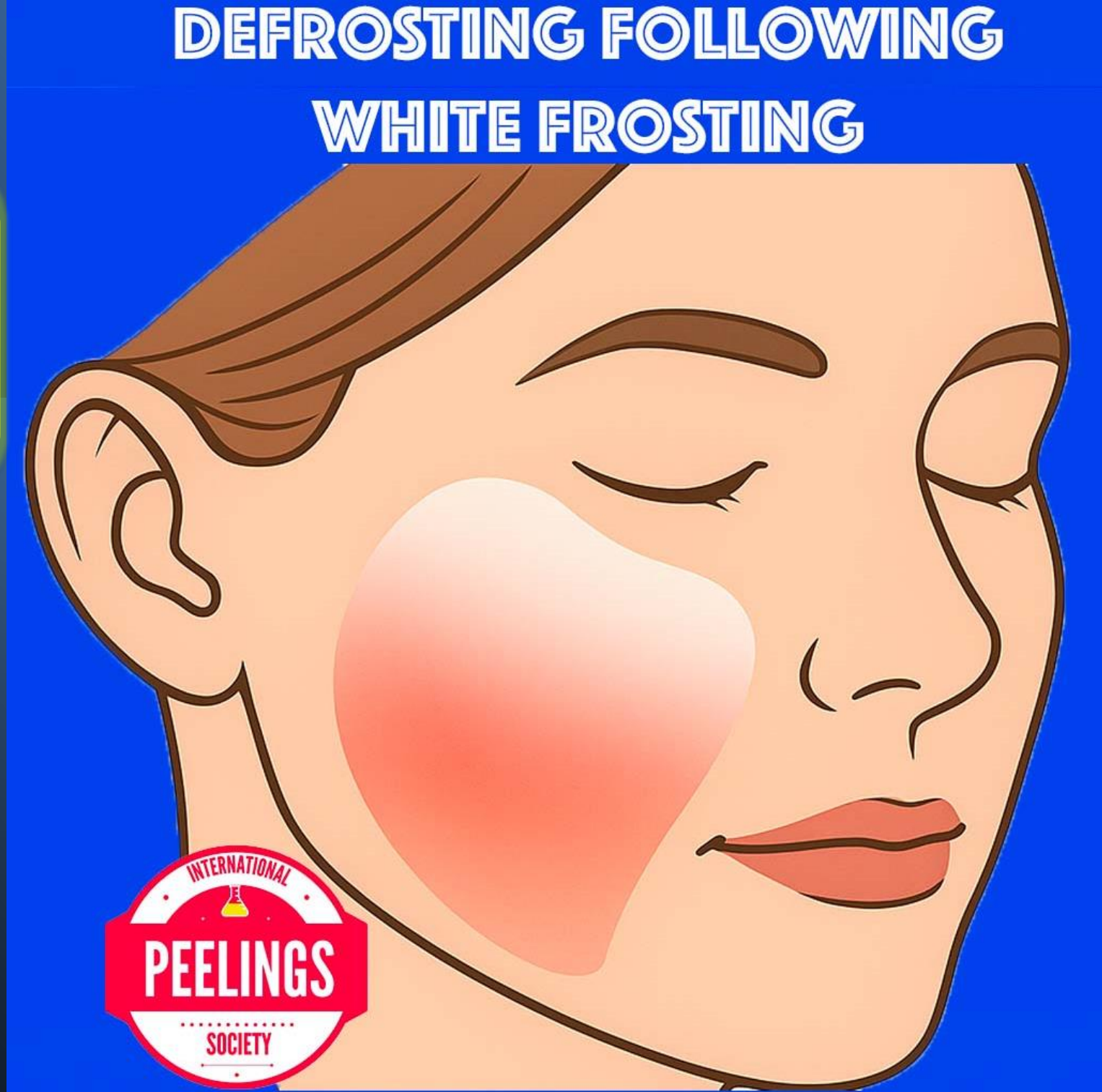
Targeting the pigment (ColorKiller)

Peri-lesional frosting must be recognized and controlled, not ignored.

THE WHITE FROSTING EXTENDS BEYOND THE LESION INTO THE PERILESIONAL AREA

Courtesy of Dr.Alain Tenenbaum

Targeting the pigment (ColorKiller)



Targeting the pigment (ColorKiller)

When to apply the frosting stopper (Peeling de luxe plus)

Condition	Action
White frosting appears on the lesion	Apply the frosting stopper at the moment of defrosting following the white frosting on the lesion.
Frosting turns from grey to white on the perilesion (external limits of the lesion)	Apply the frosting stopper just juxtaposing the external limits of the lesion.
Frosting turns from red to grey on the perilesion (near the lesion but not in direct contact)	Apply the frosting stopper not directly juxtaposing the lesion, but at the moment of defrosting.

Targeting the pigment (ColorKiller)

When to apply the frosting stopper (Peeling de Luxe Plus)

Timing determines outcome more than concentration

CONCEPTS OF A.TENENBAUM & M.TIZIANI

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HYPERPIGMENTATION REQUIRES COMPARTMENT-SPECIFIC TARGETING, NOT UNIFORM TREATMENT.

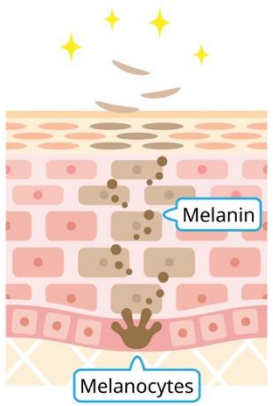
	COMPARTMENT	GOAL/AIM	CATEGORY OF TREATMENT	INGREDIENTS	PRODUCT
1	**Production**	Reduce the production of melanin	Prevention + Maintenance Treatments	• Tretinoin • Tranexamic Acid	Peeling de Luxe Plus
2	**Circulation**	Lower the melanin transfer through melanosomes	Maintenance Treatment	• Topical Melatonin Regulates Melanin (see below)	Clarté de Lune
3	**Destruction**	Treat the hyperchromy or hyperchromies	Attack Treatment	• Azelaic Acid • Arbutin • Kojic Acid • Vit C	StretchPeel

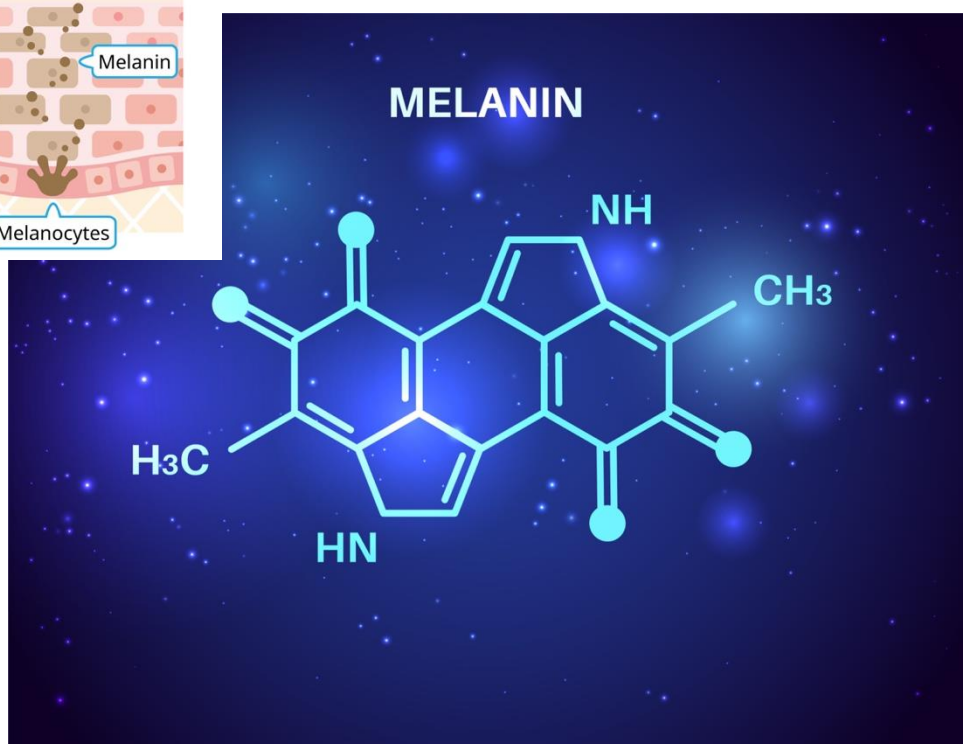
Addressing the 3 Key Compartments of Melanin Metabolism

PROTOCOL HYPERPIGMENTATION

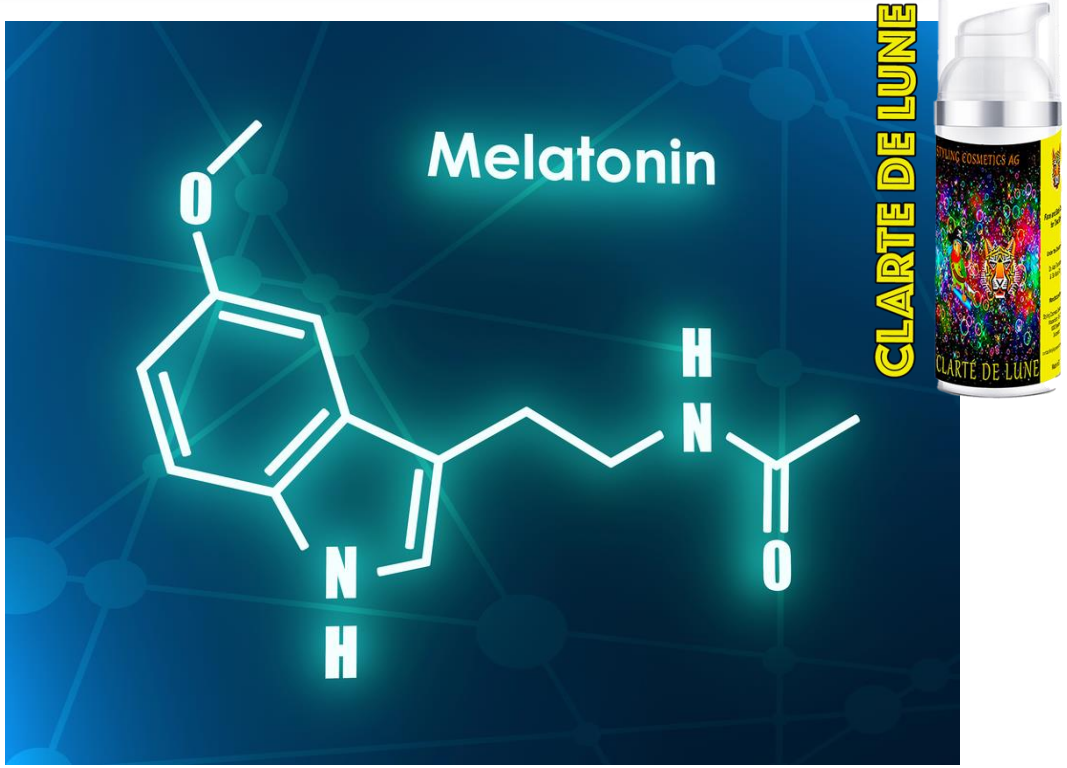
Protocol Hyperpigmentation

No Confusion





Addressing the 3 key compartments of melanin metabolism



Treatment of Cervical Hyperchromy
Post Chemodermoabrasion
TCA + Metabolic Peels + Depigmentants
Protocol of A.Tenenbaum

BEFORE

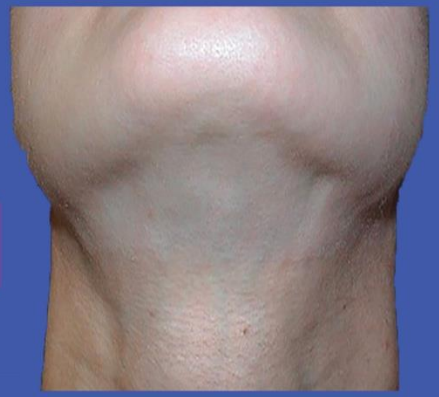
AFTER 4 SESSIONS

Courtesy of Dr.Alain Tenenbaum

Treatment of Cervical Hyperchromy
Post Chemodermoabrasion
TCA + Metabolic Peels + Depigmentants
Protocol of A.Tenenbaum : 4 sessions-1 session/week

D0

D365 stable



D60

Courtesy of Dr.Alain Tenenbaum

Treatment of Cervical Hyperchromy
Post Chemodermoabrasion
TCA + Metabolic Peels + Depigmentants
Protocol of A.Tenenbaum : 4 sessions-1 session/week

D0

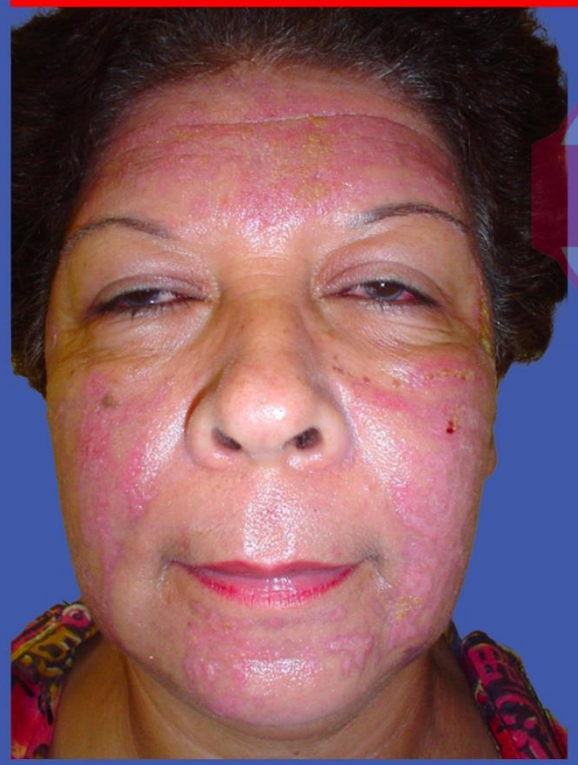
D365 stable

D60

Courtesy of Dr.Alain Tenenbaum

Treatment of Facial Hyperchromy
dued to a peelings complication (TCA + Glycolic Acid)
Fixed with TCA + Metabolic Peels + Depigmentants

BEFORE
3 weeks after TCA + Glycolic Acid



AFTER 4 MONTHS

Protocol Hyperchromy of Dr.Alain Tenenbaum

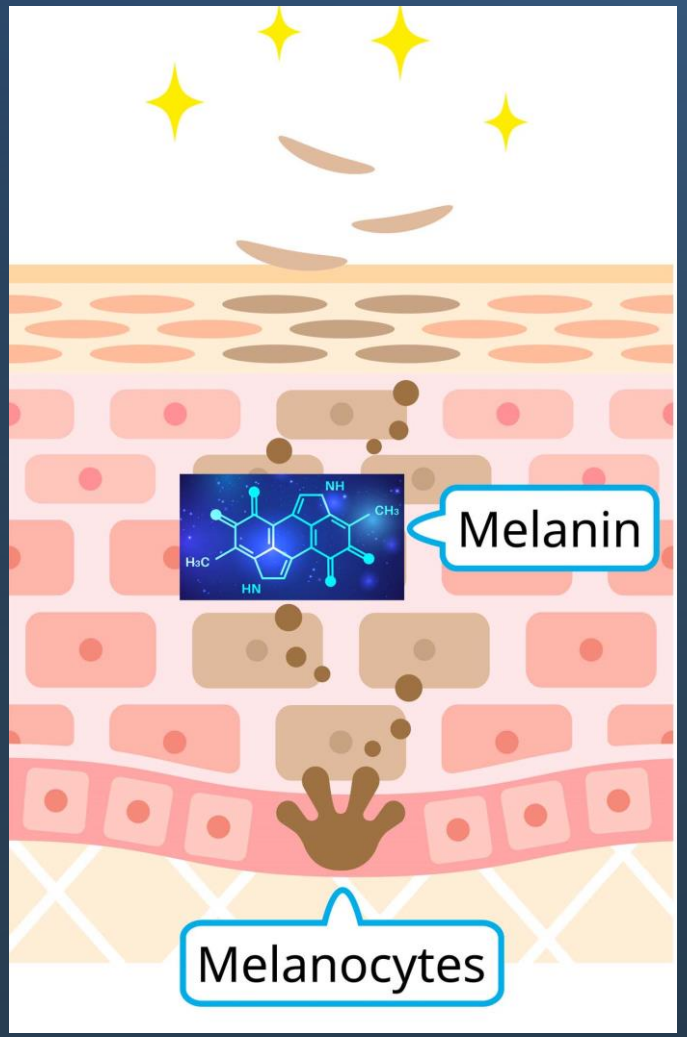
Treatment of Facial Hyperchromy
dued to a peelings complication (TCA + Glycolic Acid)
Fixed with TCA + Metabolic Peels + Depigmentants

Never give up

before | 1month | 2 months | 3 months | 4 months

Protocol Hyperchromy of Dr.Alain Tenenbaum

2.ADDRESSING THE 3 KEY COMPARTMENTS OF MELANIN METABOLISM



MECHANISM OF ACTION OF TOPICAL MELATONIN IN SKIN PIGMENTATION REGULATION

Key Ingredients

- Melatonin: neuroohormone with cutaneous activity
- Tocopherol (Vitamin E): antioxidant synergy
- Glutamic Acid & Citric Acid: support skin metabolism and pH balance

Mechanisms of Action

Mechanism	Description
Antioxidant Activity	Neutralizes free radicals and reduces oxidative stress that stimulates melangensis
Tyrosinose Downregulation	Inhibits tyrosinase enzyme, reducing melanin synthesis
Melatonin Receptor Antivation	Binds MT1/MT2 receptors o melanocytes, modulating melanogenic signaling pathways
Inhibition of Melanin Transfer	Modulates keratinocyte-melanocyte communication, decreasing melanosome tansfer
Gene Expression Regulation	Influences MITF and related genes controlling melanin production
Anti-inflammatory Effects	Reduces post-inflammatory hyperpigmentation through skin calming and repair

Clinical Effects

- Reduction of hyperchromia and dark spots
- Improved skin tone uniformity
- Enhanced skin protection against UV-induced pigmentation

Application Tips

- Can be combined with metabolic peels for synergistic depigmentation

CLARTE DE LUNE

DEFINITION OF MELASMA

- Melasma is a common skin condition characterized by the development of brown or grayish-brown patches, typically on the face.
- It is often found on areas that are exposed to the sun, such as the
- -cheeks
- -forehead
- -nose and
- -upper lip.
- The condition is more common in **women**, especially during **pregnancy** or when using **birth control pills**, due to hormonal changes.
- It can also be triggered or worsened by **sun exposure**, certain **medications**, or skin irritation.
- The patches are usually symmetrical, and melasma is typically more noticeable in individuals with darker skin tones.

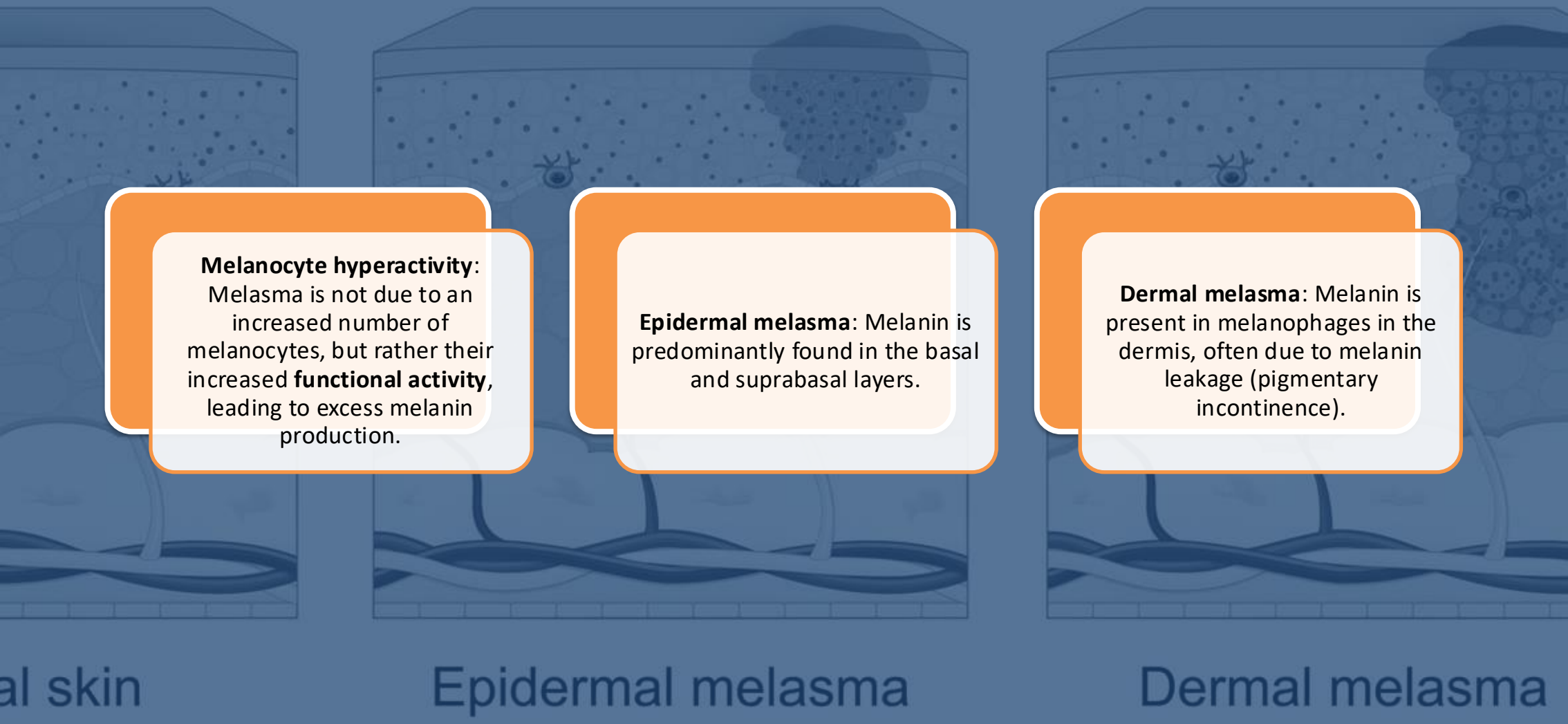
MELASMA

Histo-Pathophysiology of Melasma

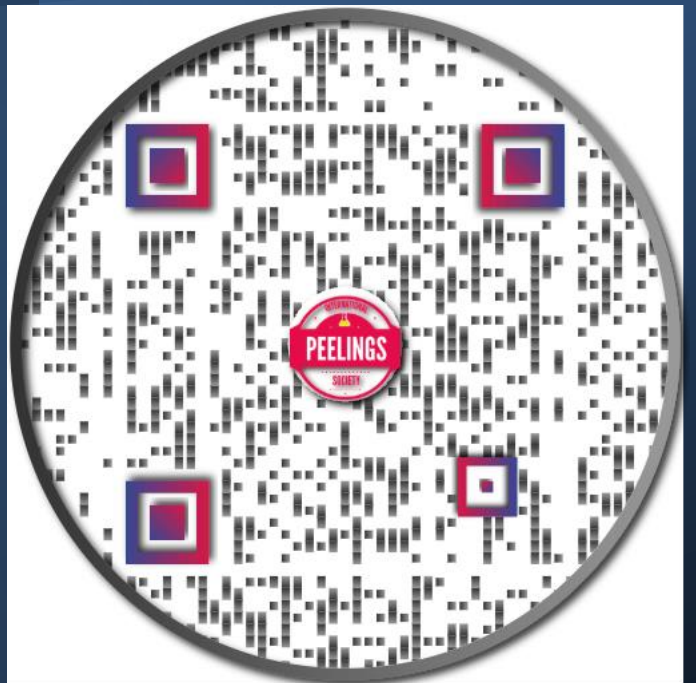
Melanocyte hyperactivity: Melasma is not due to an increased number of melanocytes, but rather their increased **functional activity**, leading to excess melanin production.

Epidermal melasma: Melanin is predominantly found in the basal and suprabasal layers.

Dermal melasma: Melanin is present in melanophages in the dermis, often due to melanin leakage (pigmentary incontinence).



MELASMA HAS BECOME MORE PREVALENT IN RECENT YEARS

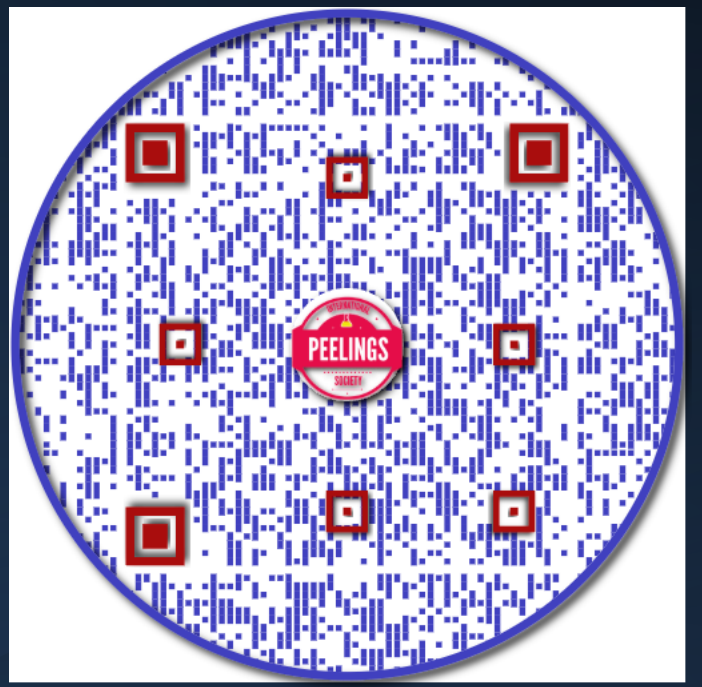


Melasma

MELASMA

Treatment must be aggressive
Any "soft" treatment will only worsen the results

PROTOCOL MELASMA

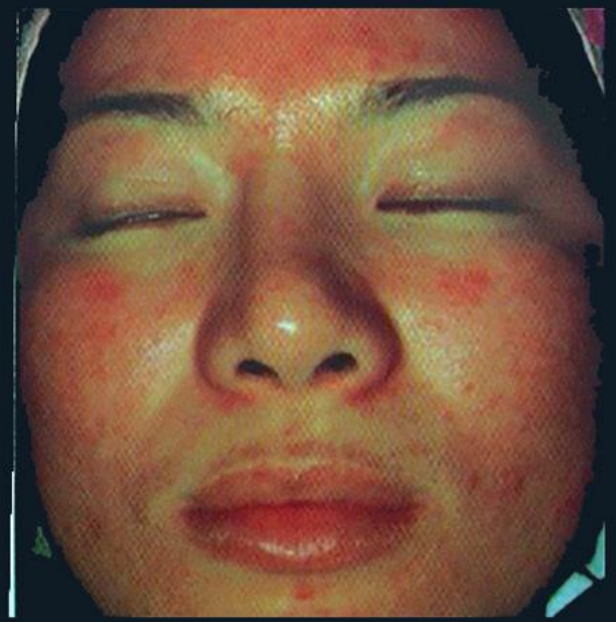


Protocol & Treatment Melasma

CLINICAL PITFALLS

CLINICAL PITFALL IN MELASMA
INCORRECT VS CORRECT ENDPOINT

7 DAYS AFTER TCA
INCORRECT ENDPOINT



Insufficient frosting
Color-killer not achieved

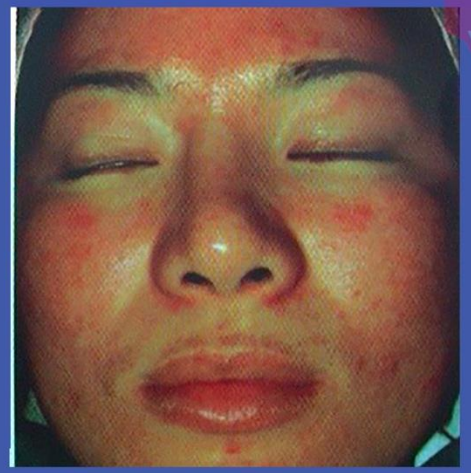
7 DAYS AFTER TCA
CORRECT ENDPOINT

Complete color-killer coverage
Melasma adequately treated

Correction of Insufficient Treatment of infraocular Melasma with TCA 30% w/w + Metabolic Peels + Depigmentants

Korean Female 29Y

7 DAYS
AFTER TCA 18% w/w
UNCORRECT



7 DAYS
AFTER TCA 30% w/w
CORRECT

Courtesy of Dr.Alain Tenenbaum

D0

D21+3

D8+3

D15+3

EXPECTED DOWNTIME DURING TCA + METABOLIC PROTOCOL

APPEARANCE MAY WORSEN AFTER EARLY SESSIONS — CONTINUATION IS ESSENTIAL

Patient Leaflet to avoid Panic

Patient Leaflet to Avoid Panic

Which Sunscreen without Alcohol ?

Melasma Maintenance

STRETCHPEEL AS SUNPROTECTOR

2.Addressing the 3 Key Compartments of Melanin Metabolism

Stretchpeel is helping to make heller hyperchromies and is acting as well as **sunprotector without alcohol.**

Stretchpeel is ***completely free of chemical filters like oxybenzone,***

avobenzone, and octinoxate.

These chemical filters can sometimes lead to hormonal disruptions or photosensitivity in some people, possibly contributing to melasma

Stretchpeel cream is a powerful Sunprotector Depigmenting agent and multivitamin cream.

Melasma Maintenance

COMPLEX ACNE SCARS PROTOCOLS

COMPLEX ACNE SCARS PROTOCOLS

TCA 30% w/w on Asian Skin for Deep Acne Scars

1 Session Only

Protocol : TCA + Metabolic Peel + Depigmentant + Moisturizer

D0 D7

Courtesy of Dr.Alain Tenenbaum

TCA 30% w/w on Asian Skin for Deep Acne Scars
1 Session Only
Protocol : TCA + Metabolic Peel + Depigmentant + Moisturizer

D0

D7

D1

D3

D4

Courtesy of Dr.Alain Tenenbaum

COMBINATION EBD+ PEELS ,,PEELING SUSHI,, OF A.TENENBAUM

Combination EBD (Erb Yag) & TCA 30% w/w
No waterphotodetersion ! Only with TCA

1 ST SESSION

Korean Male

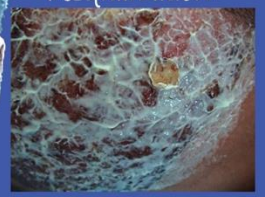
D0

D7

D1

D4

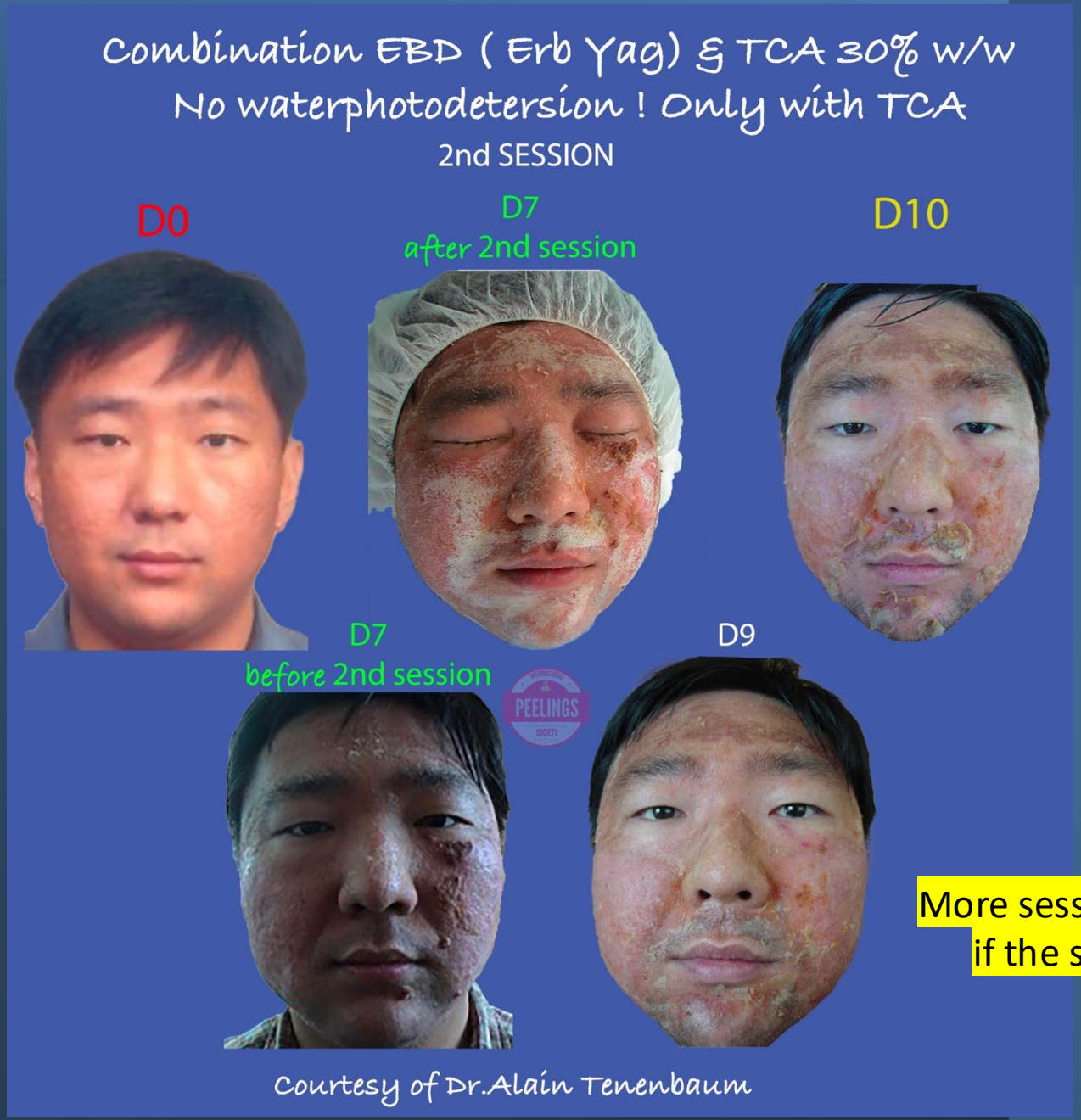
Peeling Sushi or
Laser Spot
Desquamation



Courtesy of Dr.Alain Tenenbaum

No need to go on with a 2nd session.

It s better to go on with metabolic peels without TCA

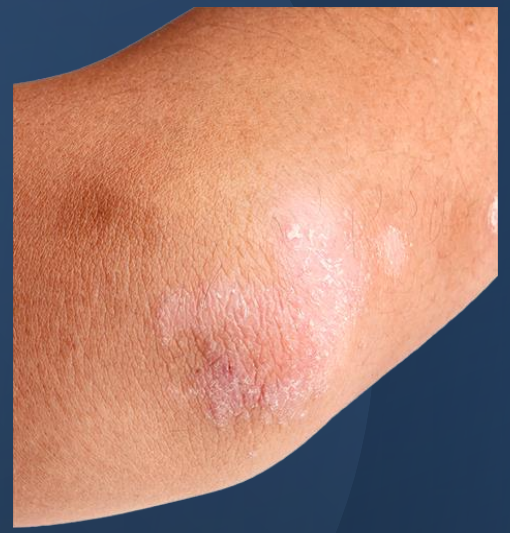


More sessions ≠ better results if the strategy is wrong.

INDICATIONS FOR *KERATOTIC ZONES*

USE OF SALICYLIC ACID IN ETHANOL

https://chemicalpeeling.com/products-list/superficial-peels/salicylic-acid



IS SALICYLIC ACID A COLOR KILLER?

2.Targeting the pigment (ColorKiller)

- **Frosting with salicylic acid is purely physical, not biochemical**
- Therefore, the **colorkiller** effect is more about **optical masking** or synergistic combination with agents like TCA or lactic acid for pigmentation correction.

- Unlike TCA, **salicylic acid does not produce true frosting through protein coagulation**.
- Instead, it creates a **pseudofrosting** due to **crystallization** of the acid on the skin as the solvent evaporates—often mistaken for "white frost."
- That said, we can still classify **clinical effects and visual appearances** by concentration

COMPARISON TABLE : TCA VS. SALICYLIC ACID FOR HYPERPIGMENTATION USED AS ,, COLOR KILLERS,,

S (Salicylic) for S (Superficial)

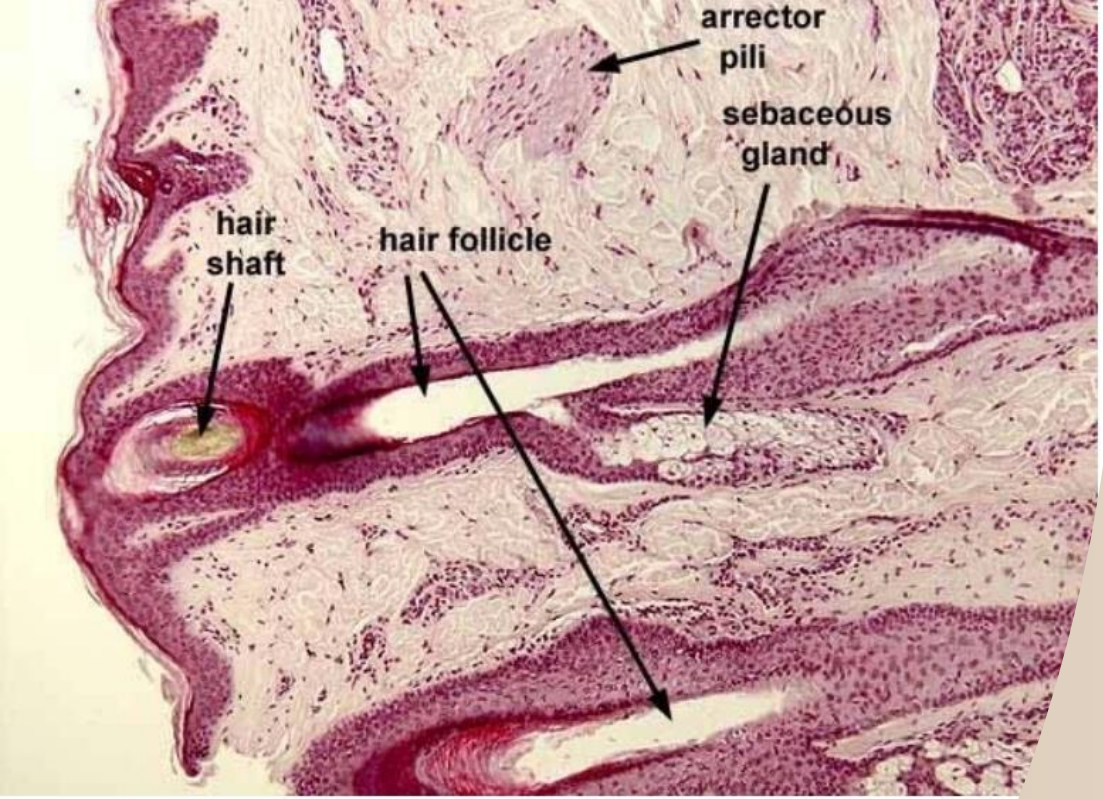
2.Targeting the pigment (ColorKiller)

Feature	TCA (Trichloroacetic Acid)	Salicylic Acid
Type of Acid	TCA	Beta-hydroxy acid (BHA)
Mechanism of Action	Medium-depth peel that exfoliates and stimulates collagen production	Superficial exfoliation, oil-soluble, penetrates pores
Target Area	Deeper pigmentation (e.g., melasma, sun spots)	Superficial pigmentation (e.g., PIH)
Penetration Depth	Medium depth	Superficial to medium depth
Suitable for Skin Types	Thicker skin types or severe pigmentation	Best for oily, acne-prone skin with superficial ,,light,,pigmentation
Frequency of Treatment	4 treatments spaced 1 /week or 2 weeks	Can be used more frequently (bi-weekly, monthly)
Main Benefits	Reduces deeper pigmentation, stimulates collagen production, improves skin texture	Prevents clogged pores, brightens skin
Side Effects	Redness, swelling, scabbing (can be intense)	Mild redness less intense than TCA

Clinical Effects & Visual Appearance

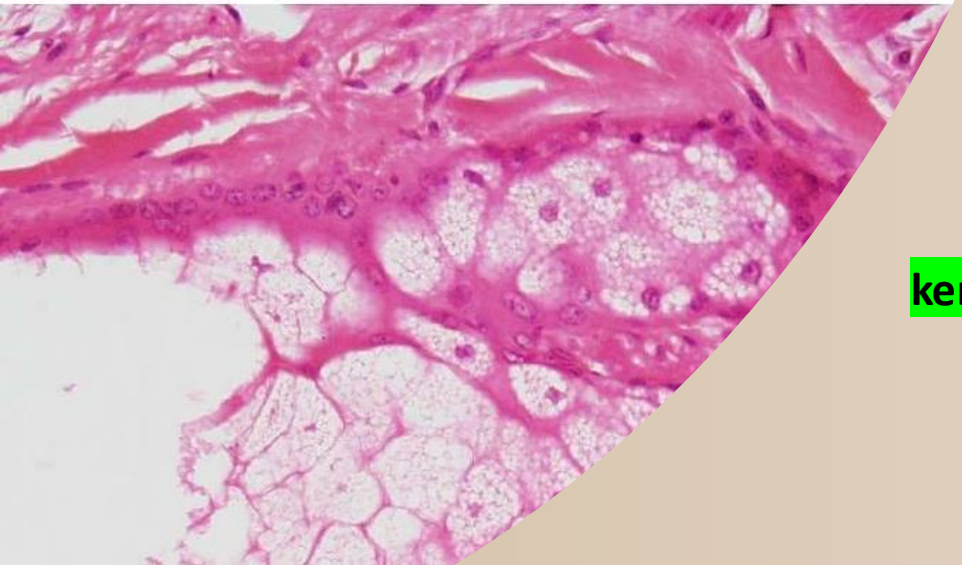
2.Targeting the pigment (ColorKiller)

	SALICYLIC CONCENTRATIONS & VISUAL EFFECTS	ROSE (BLUSH)	GREY (PATCHY)	WHITE DENSE
1	**Physical Effect**	Appearance	Crystallization	Pseudo Frosting
2	**Concentrations w/v**	25% or less	25-30%	30-40%
3	**Effects**	• Mild erythema • no visible frosting • no visible crystallization	• Visible **pseudofrosting** in some zones • partial precipitation of crystals	• Thick white film • **crystallized salicylic acid** • not true protein coagulation
4	**Depth**	• Very superficial	• Superficial peel	• Superficial epidermal peel
5	**Indications**	• Sensitive skin [redacted] • maintenance treatments	• Acne-prone skin • comedones • oily zones	• Acne • seborrheic skin • keratosis pilaris • thick skin areas (nose, chin, back)



DO'S

TO PEEL OR NOT TO PEEL ARMPITS



keratinized stratified squamous epithelium. = Keratotic Zone

Hyperpigmentation of Axillary Hollow
Treatment : Salicylic Acid + Metabolic Peels

BEFORE

AFTER

Courtesy of Dr.Alain Tenenbaum

TCA + Metabolic Peels
alternate with Salicylic Acid + Metabolic Peels

BEFORE

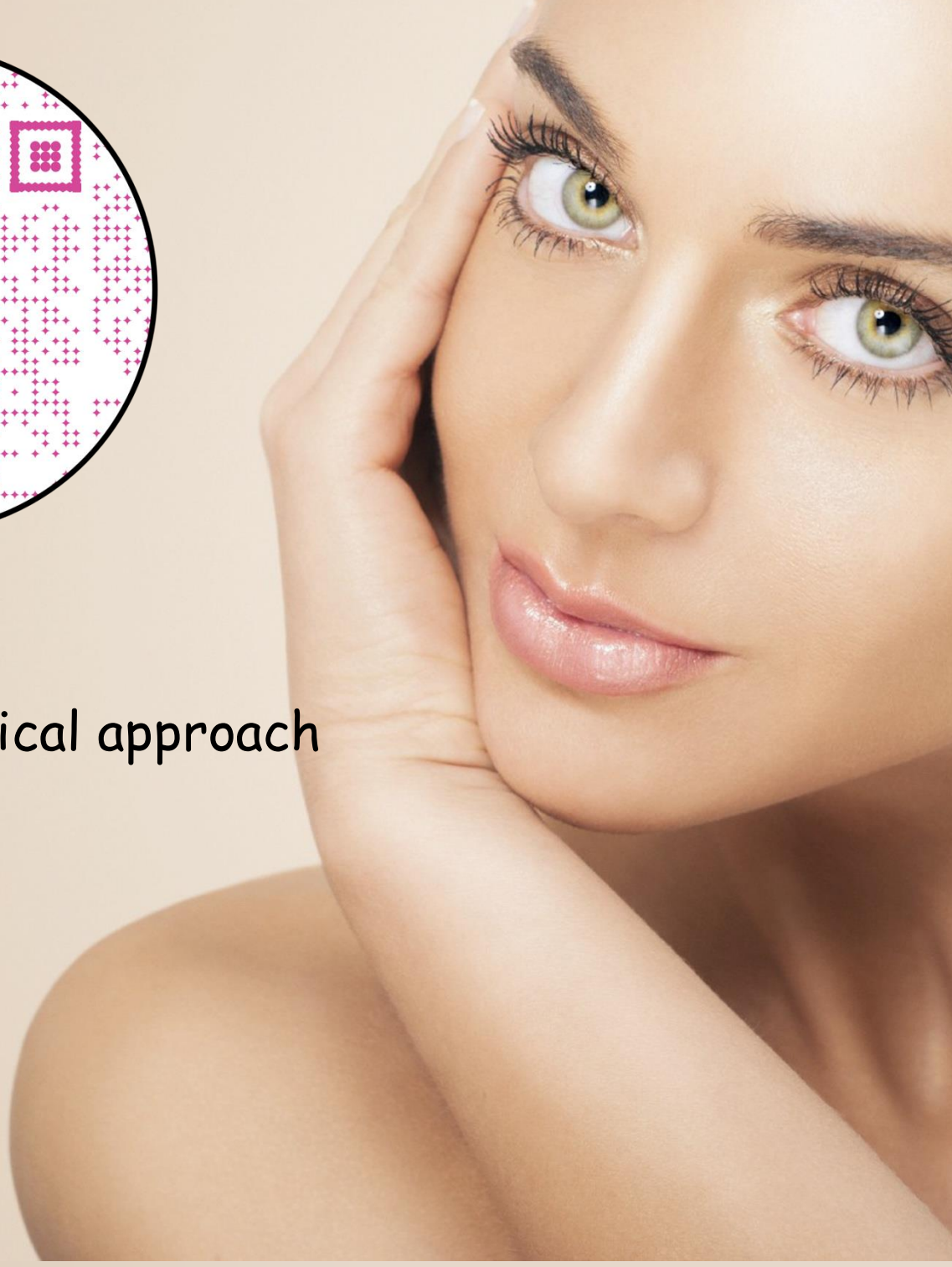
AFTER 3 SESSIONS

What do you need?

- Disposable clothing for patients and peelers (gown-e.g. non-sterile)
- Monouse gloves (S-M-L) non-sterile
- Robust cotton swabs non-sterile
- non-sterile wooden tongue depressor
- Monouse hoods
- Multicompresses 10x10 cm made of cotton non-sterile (no swabs)
- Porcelain, glass container-(No metal containers)
- Products

PEELS IN INTIMATE AREAS

Anatomical, histological and clinical approach



A.TENENBAUM, M.D.,Ph.D., D.Sc

M.TIZIANI, RCSA

drpeeling@bluewin.ch

INTIMATE AREAS
WHERE SKIN CARE IS IMPORTANT

For Men

- Perianal Area

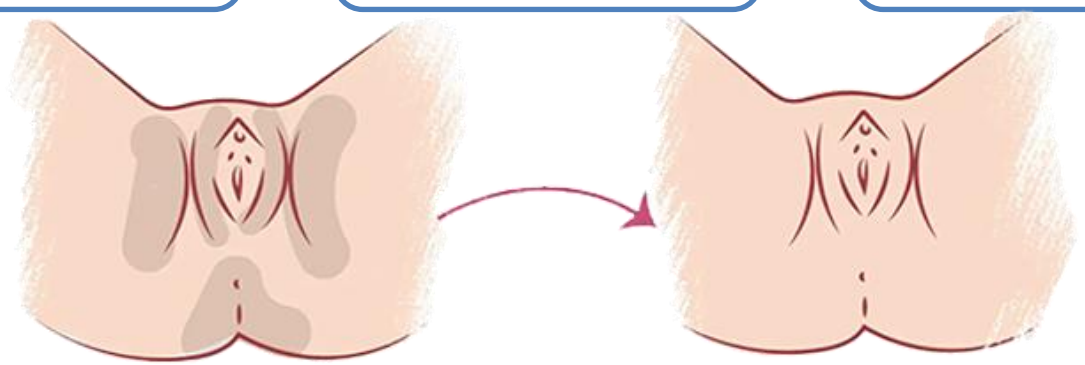
For Women

- Perianal Area
- External Genital Skin
- Inner Thighs

COMMON INDICATIONS

Common Aesthetic & Functional Indications

- Pigmentation Issues
- Post Pregnancy Skin Changes
- Age-related textural & pigmentary changes

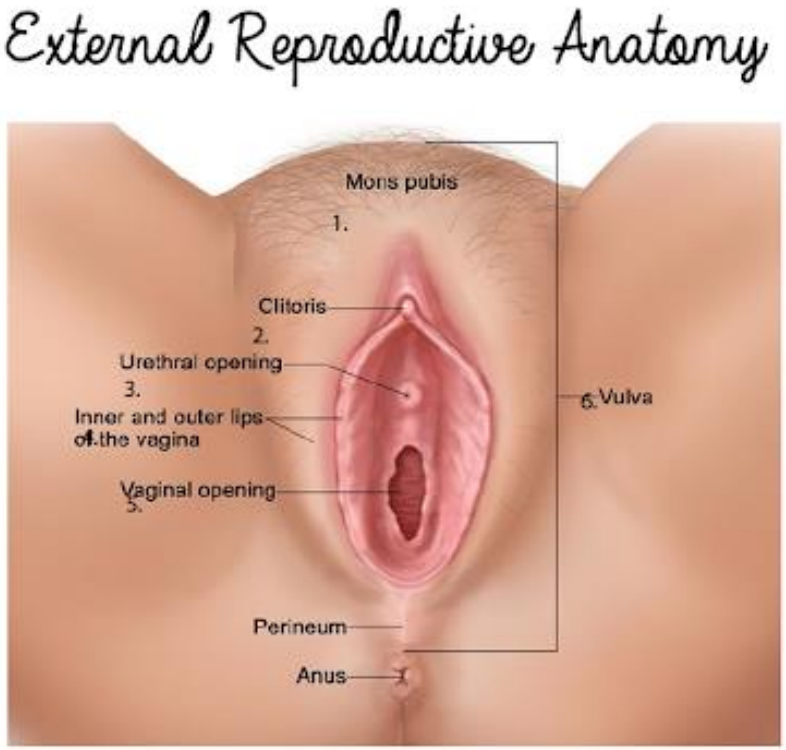


Specific Medical Indication (Expert Use Only)

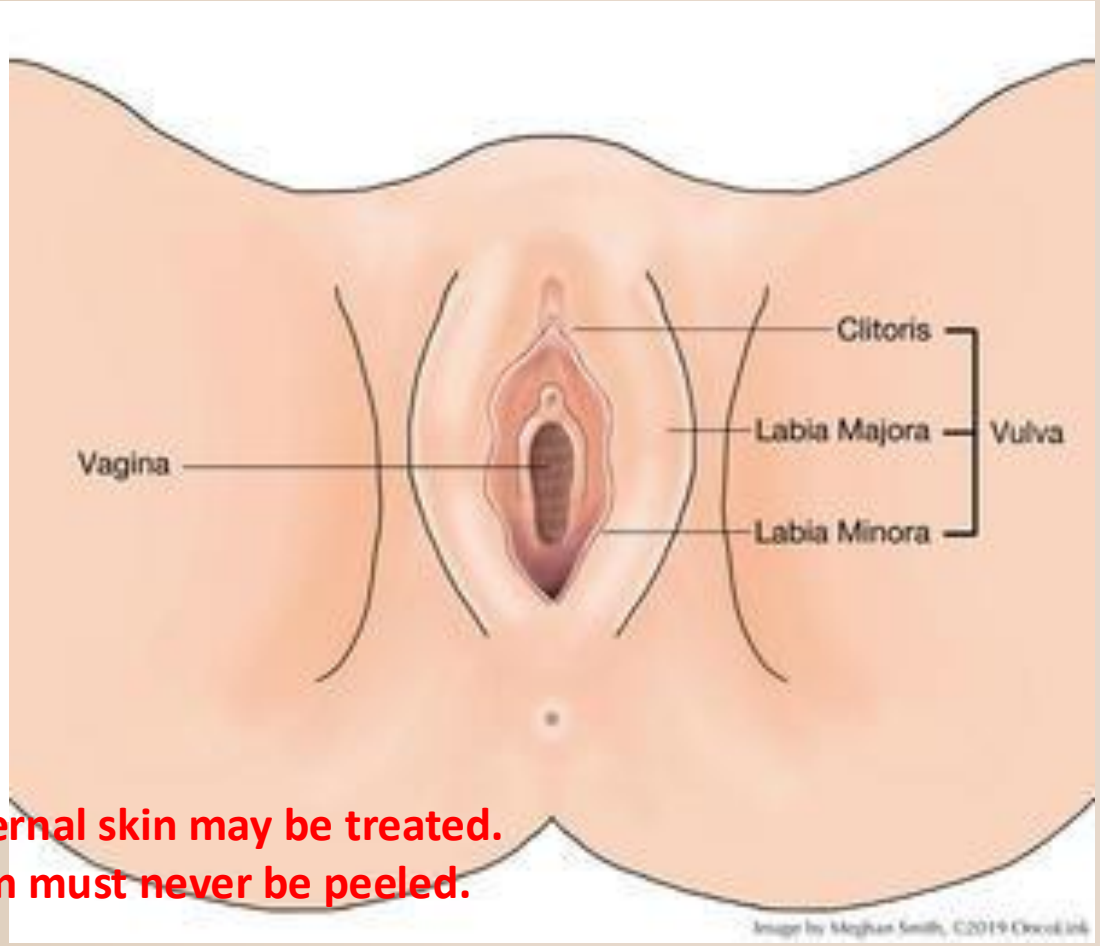
- Lichen Sclerosus

INTIMATE AREAS – EXTERNAL FEMALE ANATOMY

STRUCTURES OF THE VULVA



NEVER TREAT INTERNAL STRUCTURES OF THE VULVA WITH PEELS

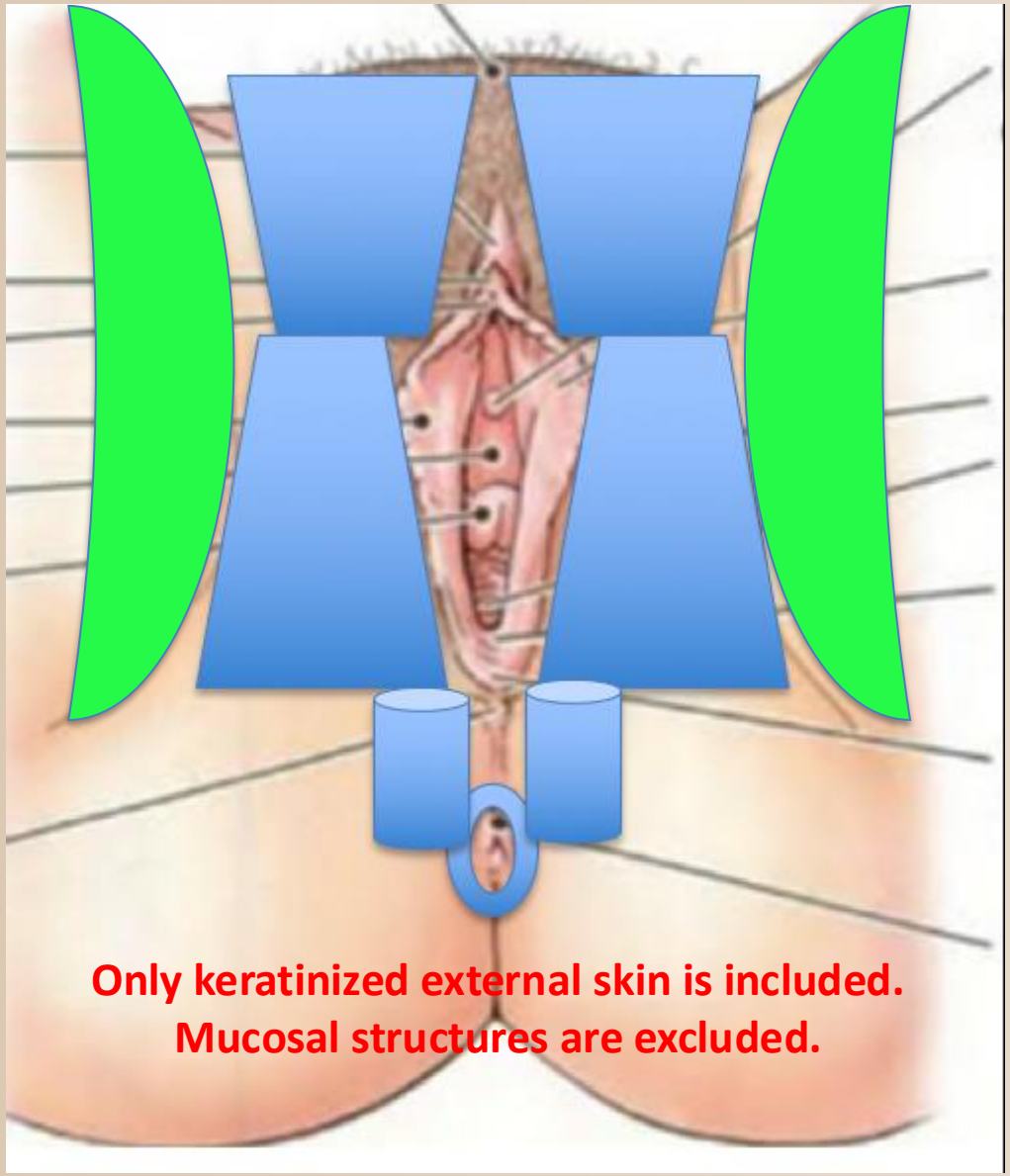


Only keratinized external skin may be treated.
Mucosal epithelium must never be peeled.

WHERE TO PEEL

IN BLUE : EXTERNAL FEMALE GENITALIA+ PERIANAL AREA

IN GREEN : INNER THIGHS

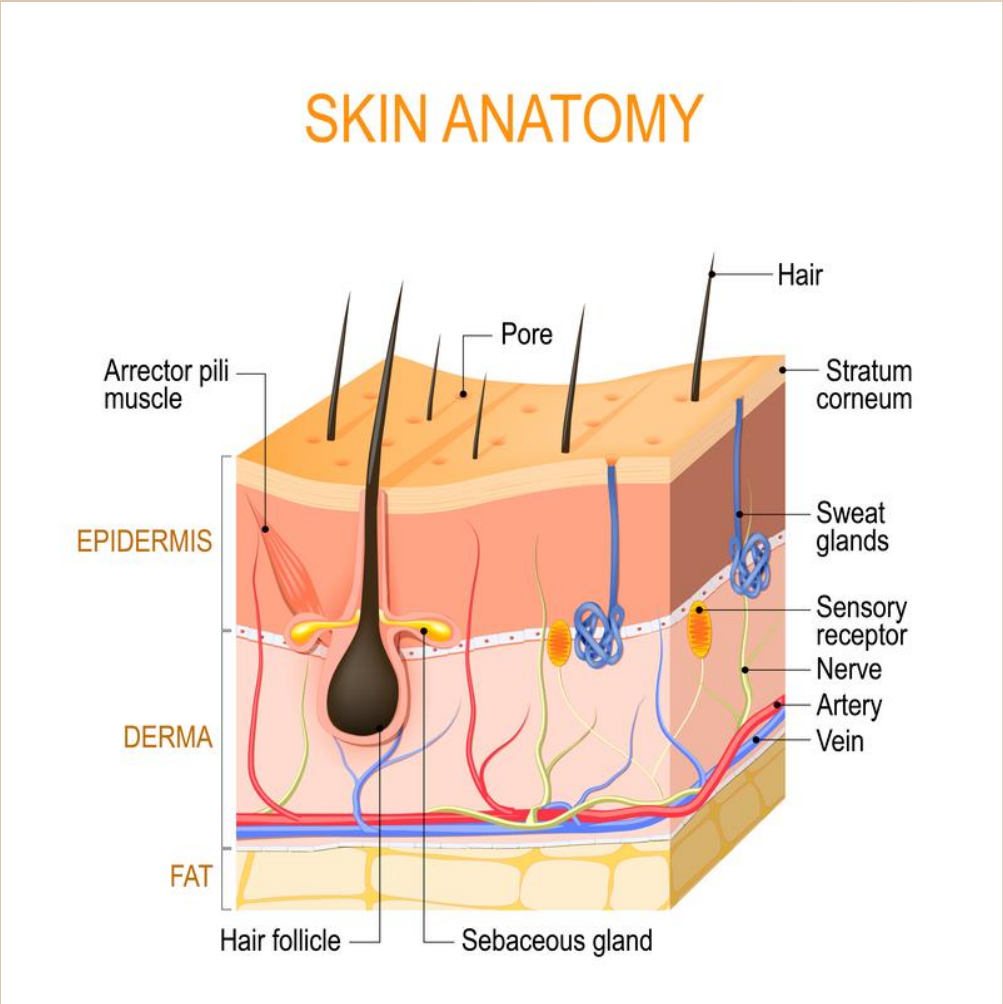


Color coding is based on epithelial type, not on anatomy alone.

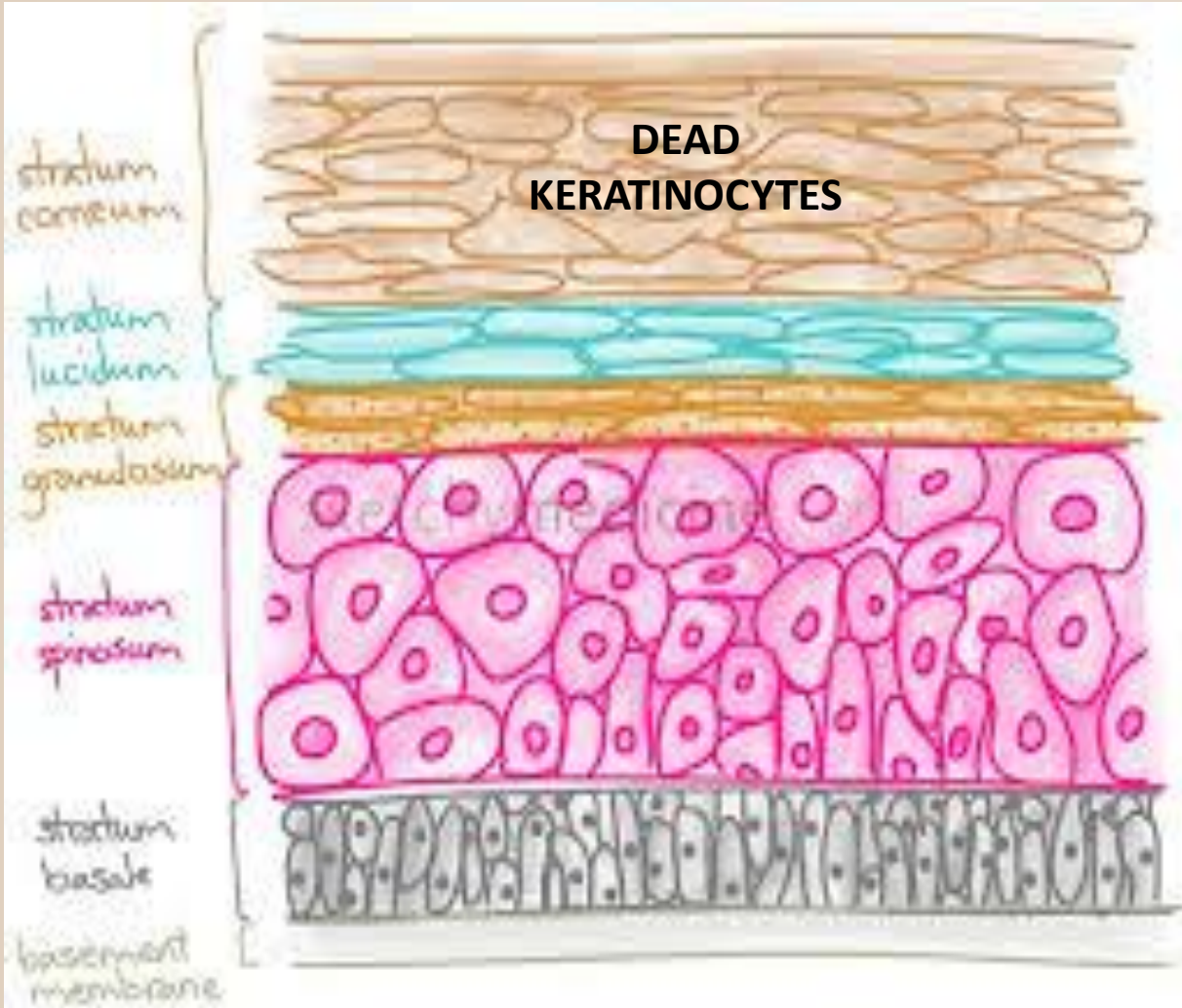
HISTOLOGY OF THE SKIN AND EPIDERMIS

Skin in Intimate Areas is thinner with higher sensitivity and potential for Hyperpigmentation

3 *Layers*

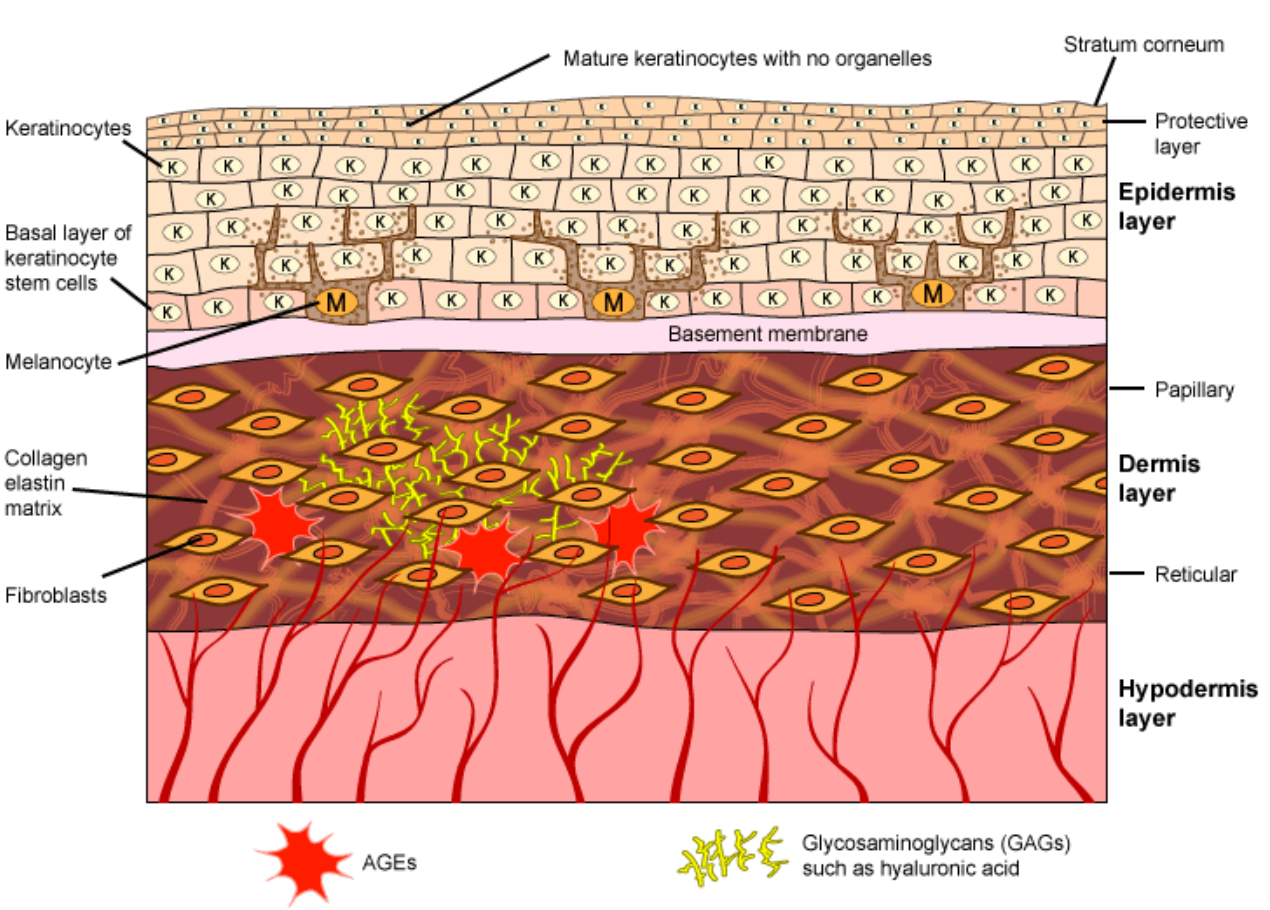


5 *Epidermal layers*



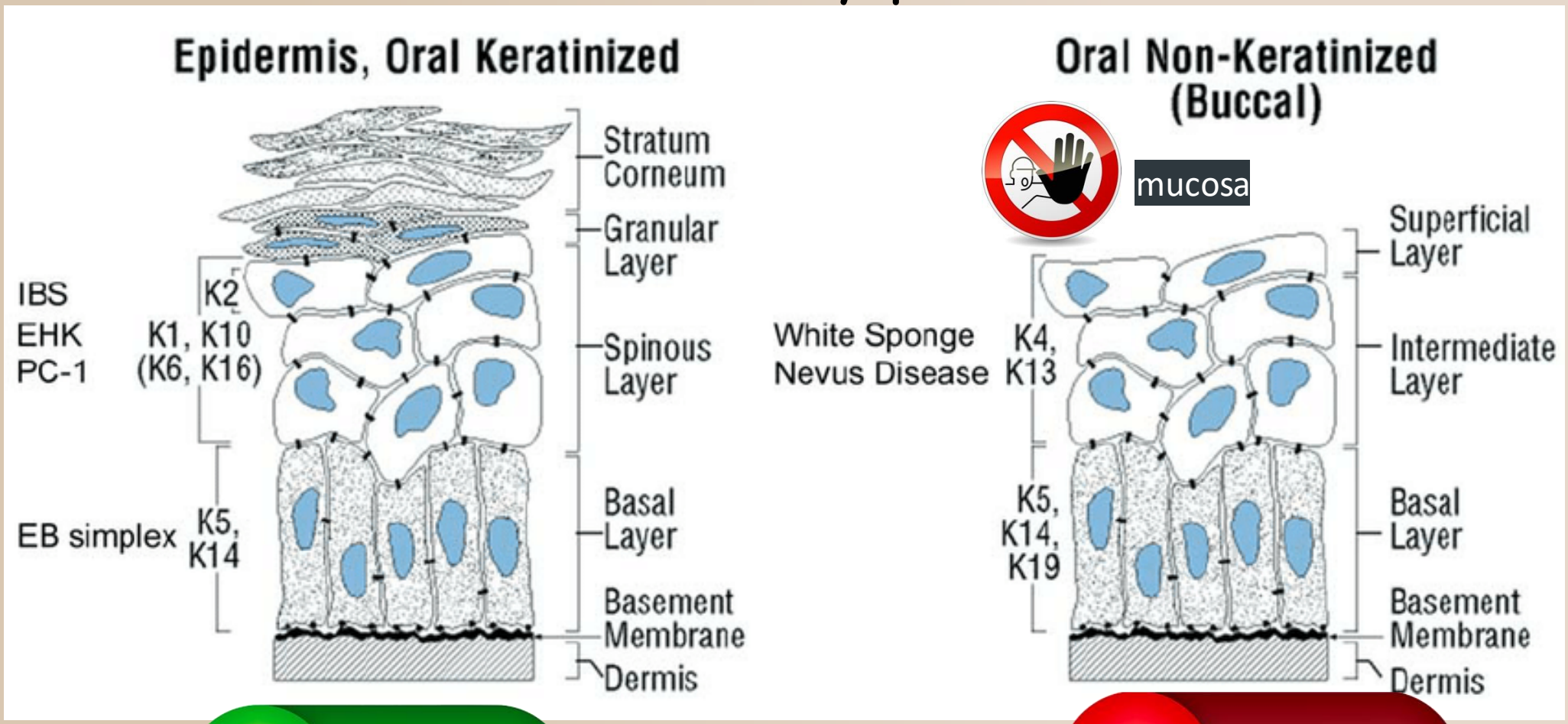
Pigment distribution involves epidermis, basement membrane and dermis

Superficial treatments alone are insufficient when pigment extends beyond the epidermis.



KERATINIZED AND NON KERATINIZED STRATIFIED SQUAMOUS EPITHELIUM

Only keratinized stratified squamous epithelium can be safely peeled.



TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

Anatomy is only a proxy – epithelial histology is the rule.

- keratinized stratified squamous epithelium
- MONS PUBIS
- LABIA MAJORA
- EXTERNAL ANAL MARGIN
- PERIANAL AREA
- INNER THIGHS

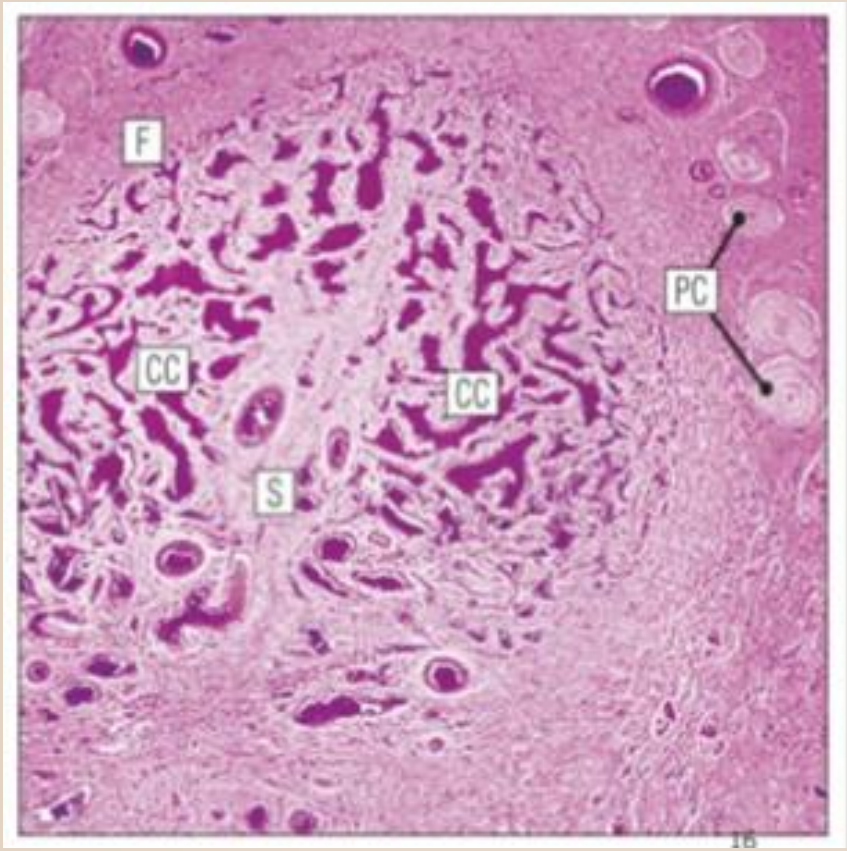
- **NOT** keratinized stratified squamous epithelium (Mucosa)
- CLITORIS
- LABIA MINORA
- VESTIBULE
- ANUS
- VAGINA

TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

DON'TS

- **NOT** keratinized stratified squamous epithelium (Mucosa)
- CLITORIS
- LABIA MINORA
- VESTIBULE
- ANUS
- VAGINA

CLITORIS

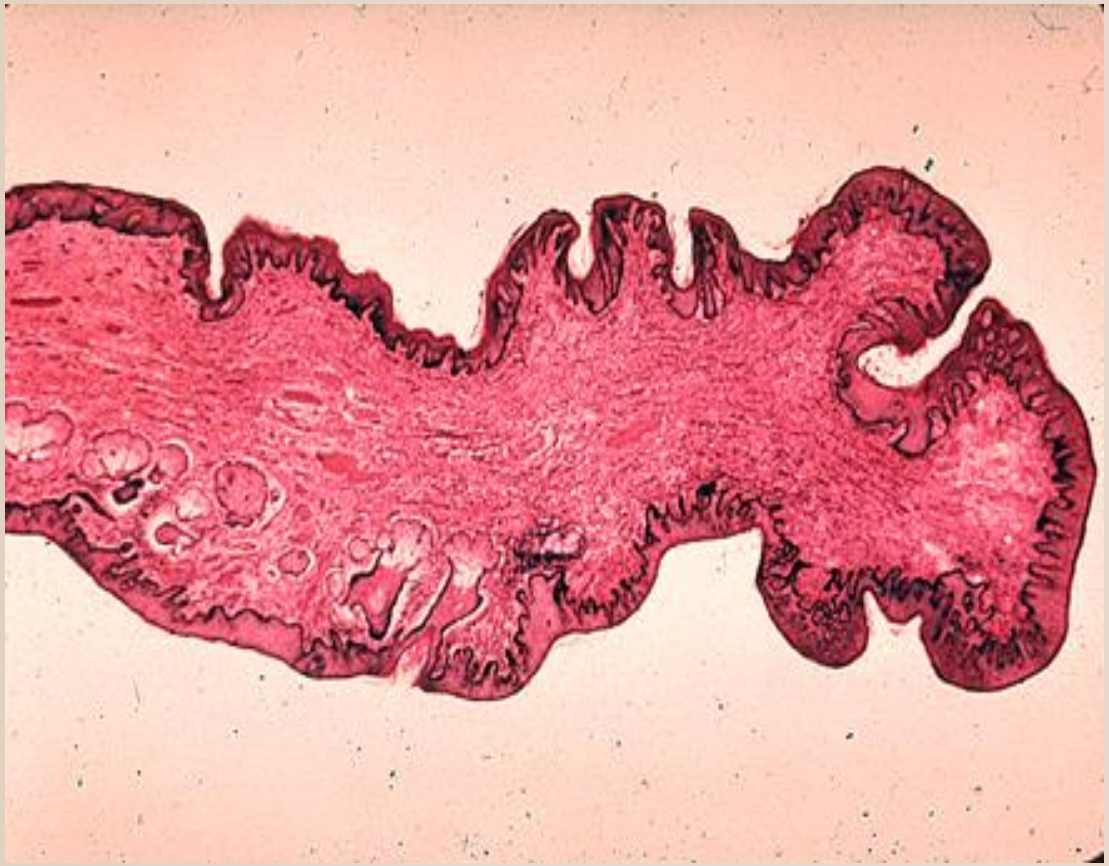


No hair follicles are observed in this section

TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

- **NOT** keratinized stratified squamous epithelium (Mucosa)
- CLITORIS
- LABIA MINORA
- VESTIBULE
- ANUS
- VAGINA

LABIA MINORA



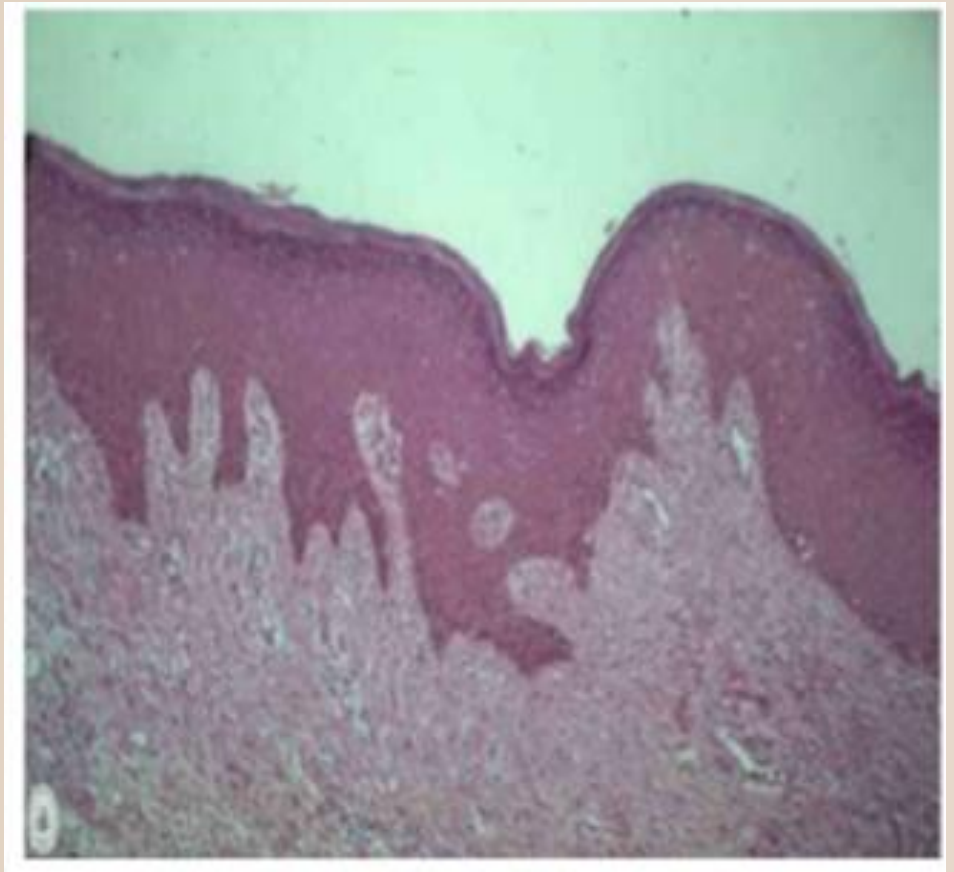
No hair follicles are observed in this section

TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

DON'TS

- **NOT** keratinized stratified squamous epithelium (Mucosa)
- CLITORIS
- LABIA MINORA
- VESTIBULE
- ANUS
- VAGINA

VESTIBULE



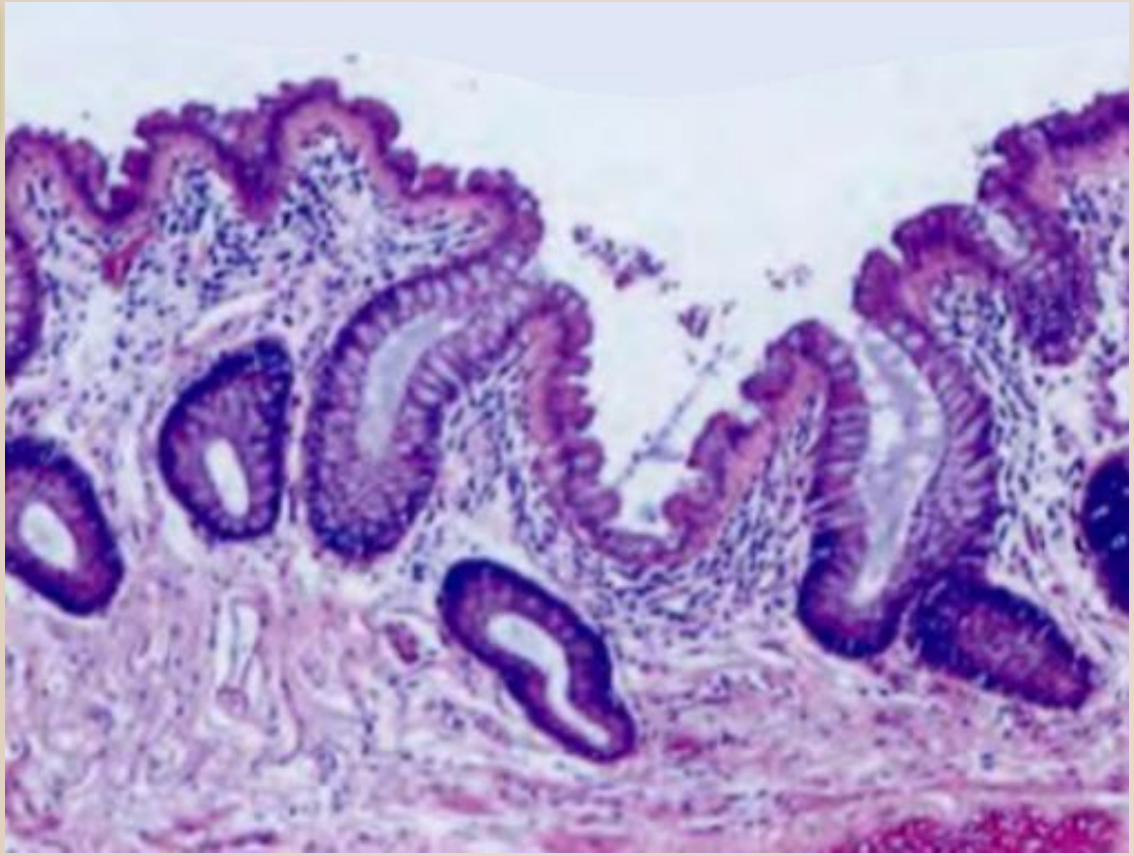
No hair follicles are observed in this section

TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

DON'TS

- **NOT** keratinized stratified squamous epithelium (Mucosa)
- CLITORIS
- LABIA MINORA
- VESTIBULE
- ANUS
- VAGINA

RECTUM



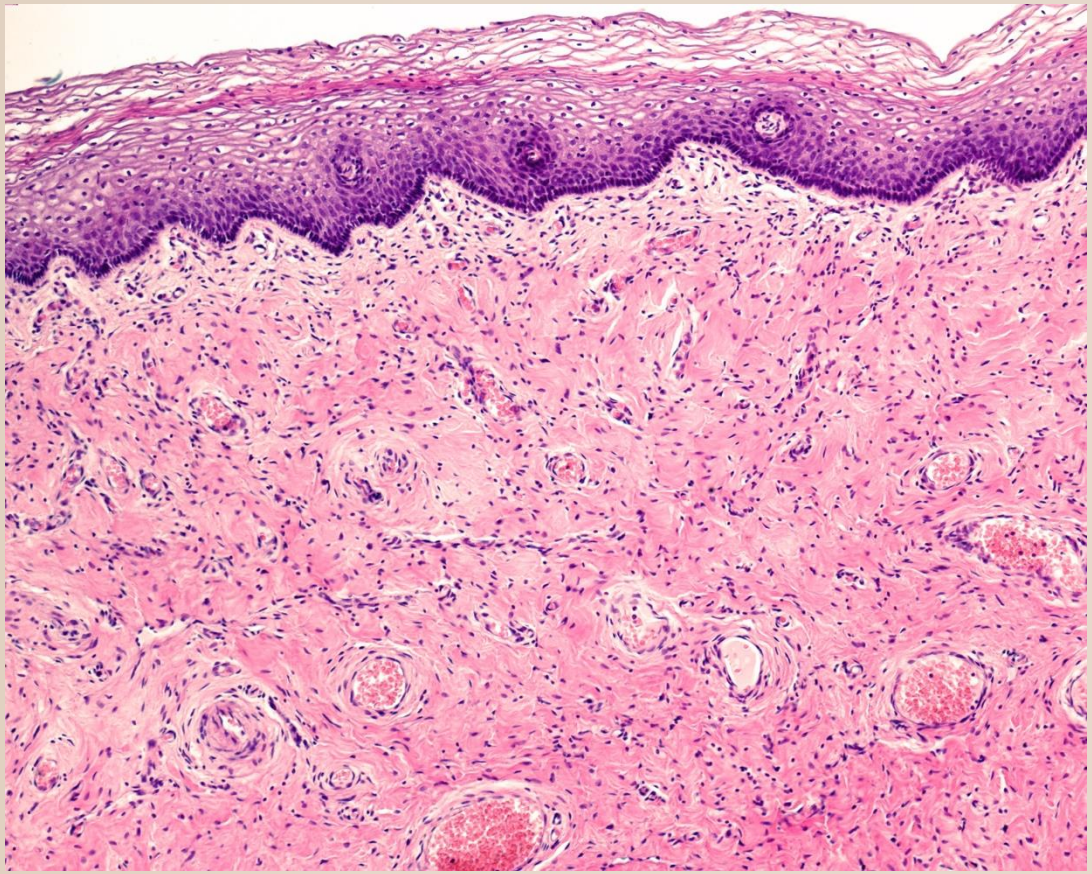
No hair follicles are observed in this section

TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

DON'TS

- **NOT** keratinized stratified squamous epithelium (Mucosa)
- CLITORIS
- LABIA MINORA
- VESTIBULE
- ANUS
- VAGINA

VAGINA



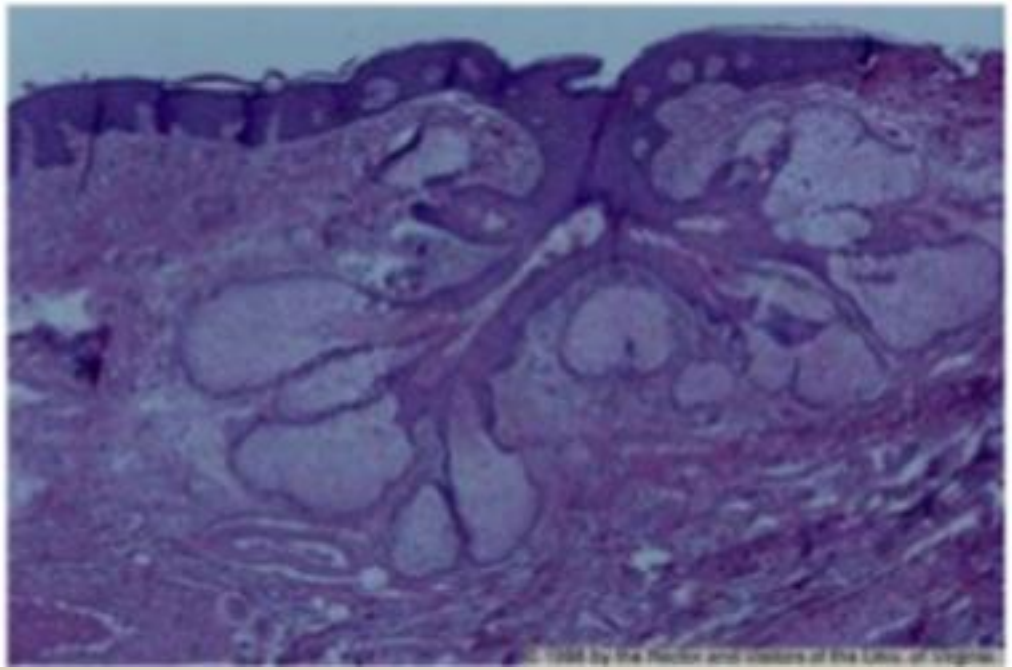
No hair follicles are observed in this section

TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

DO'S

- keratinized stratified squamous epithelium
- MONS PUBIS
- LABIA MAJORA
- EXTERNAL ANAL MARGIN
- PERIANAL AREA
- INNER THIGHS

MONS PUBIS



Hair follicles are observed in this section

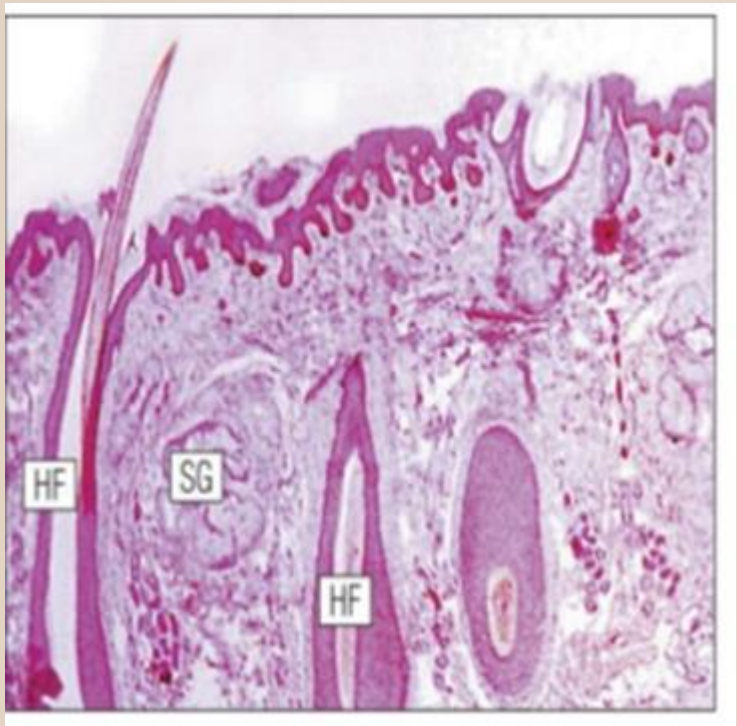
Only keratinized external skin is suitable for peeling.
This does not include mucosal or transitional epithelium.

TO PEEL OR NOT TO PEEL THAT IS THE QUESTION

DO'S

- keratinized stratified squamous epithelium
- MONS PUBIS
- LABIA MAJORA
- EXTERNAL ANAL MARGIN
- PERIANAL AREA
- INNER THIGHS

LABIA MAJORA



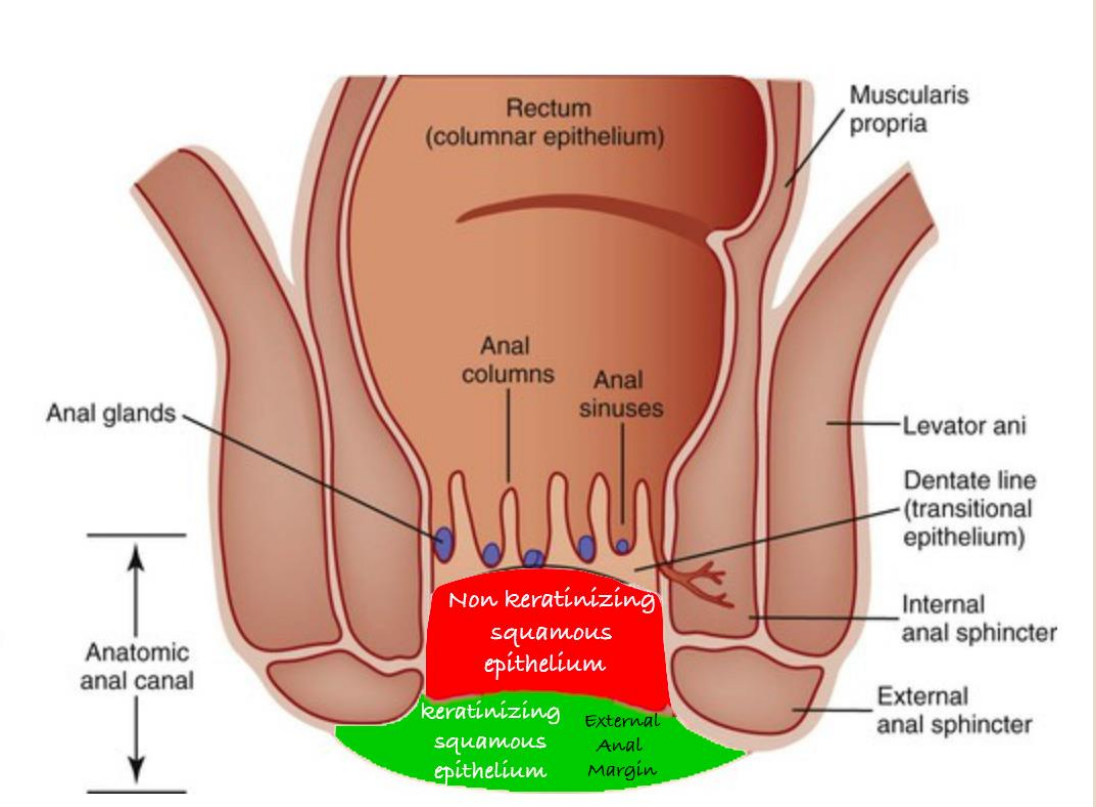
Hair follicles are observed in this section

TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

DO'S

- keratinized stratified squamous epithelium
- MONS PUBIS
- LABIA MAJORA
- EXTERNAL ANAL MARGIN
- PERIANAL AREA
- INNER THIGHS

EXTERNAL ANAL MARGIN TRANSITION AREA



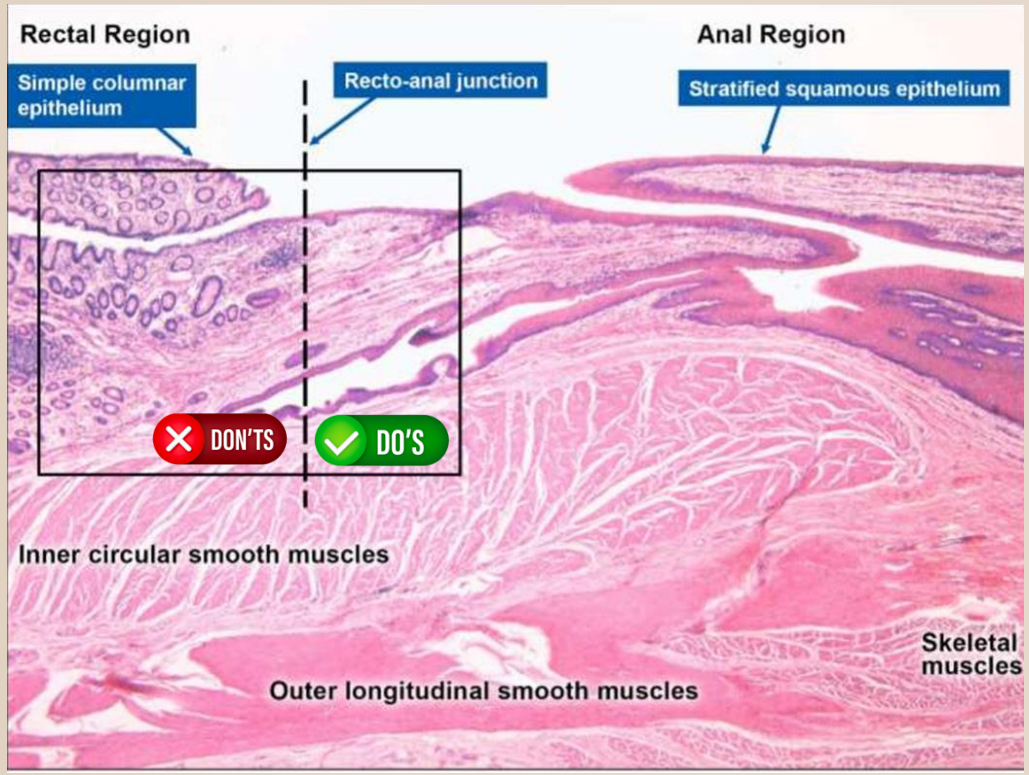
Only the external keratinized anal margin is suitable for peeling.
The anal canal and internal mucosa are strictly contraindicated.

TO PEEL OR NOT TO PEEL THAT IS THE QUESTION

DO'S

- keratinized stratified squamous epithelium
- MONS PUBIS
- LABIA MAJORA
- EXTERNAL ANAL MARGIN
- PERIANAL AREA
- INNER THIGHS

EXTERNAL ANAL MARGIN TRANSITION ZONE



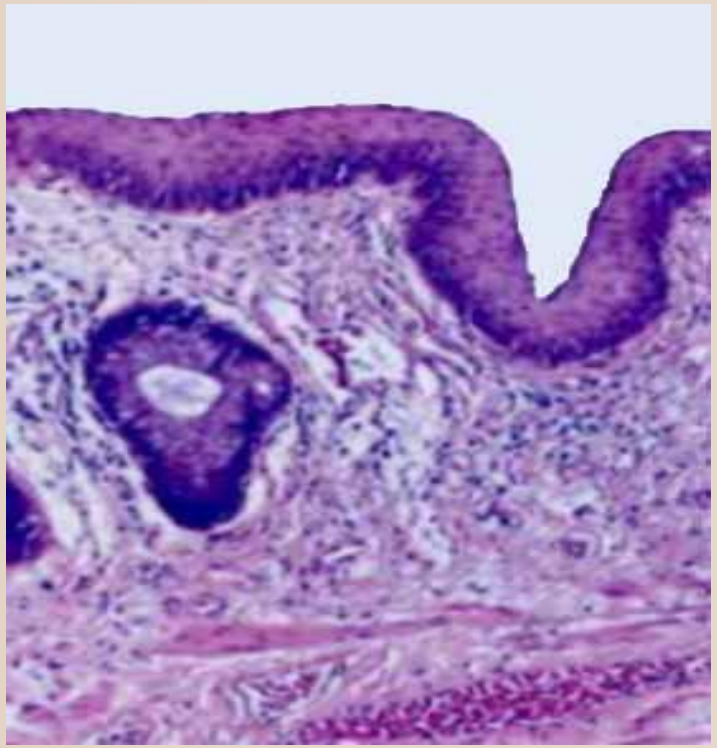
No hair follicles are seen in this section, although they are typically present in the peri anal skin

TO PEEL OR NOT TO PEEL
THAT IS THE QUESTION

DO'S

- keratinized stratified squamous epithelium
- MONS PUBIS
- LABIA MAJORA
- EXTERNAL ANAL MARGIN
- PERIANAL AREA
- INNER THIGHS

PERIANAL AREA



No hair follicles are seen in this section,
although they are typically present in this region

ETIOLOGY OF HYPERPIGMENTATION IN INTIMATE AREAS

- **DRUGS & CHEMICALS**
  - Hydroquinon->hypopigmentation
  - Antibiotics :Tetracyclins,Rifampicin,AZT
  - Antimalaria
  - Cytostatics
  - Psychomedicines : phenothiazin
  - Antiepileptics : Phenytoin
  - Antiarythmics: Cordaron
  - Psoralens
  - Melanocyte Stimulating Hormon
  - Arsenic
  - Bergamote

- **DERMA-PATHOLOGIES**
  - PIH
  - Psoriasis
  - Pityriasis Versicolor
  - LED
  - Lichens
  - Ephelides
  - Lentigines
  - Neurofibromatosis
  - Naevus (Becker)
  - Peutz-Jeghers Syndrome (gastro intestinal disease)
  - Hemochromatosis (Fe)

- **BAD HABITS**
  - -UV or solarium
  - -jeans too tight
  - -underwear too tight
  - -pantyhose
  - -check laundry products
  - -check buttons, metals … of clothes & underwears
  - -depilation, shaving, other products

- **HORMONAL DISORDERS**
  - -Addison
  - -ACTH
  - -Testosteron in excess
  - -Anabolisants
  - -Pregnancy
  - -Oral Contraceptives
  - -Post Pubertal Melanosis

Chronic irritation and inflammation are primary drivers

CONCEPTS OF A.TENENBAUM & M.TIZIANI APPLIED TO INTIMATE HYPERPIGMENTATION

1.Targeting the pigment directly
Or the ,,ColorKiller,, of A.Tenenbaum

by inducing a form *of ,,photo,,damage or ,,photo,,necrosis* to effectively <u>destroy the colors</u> responsible for the clinical expression of hyperpigmentation

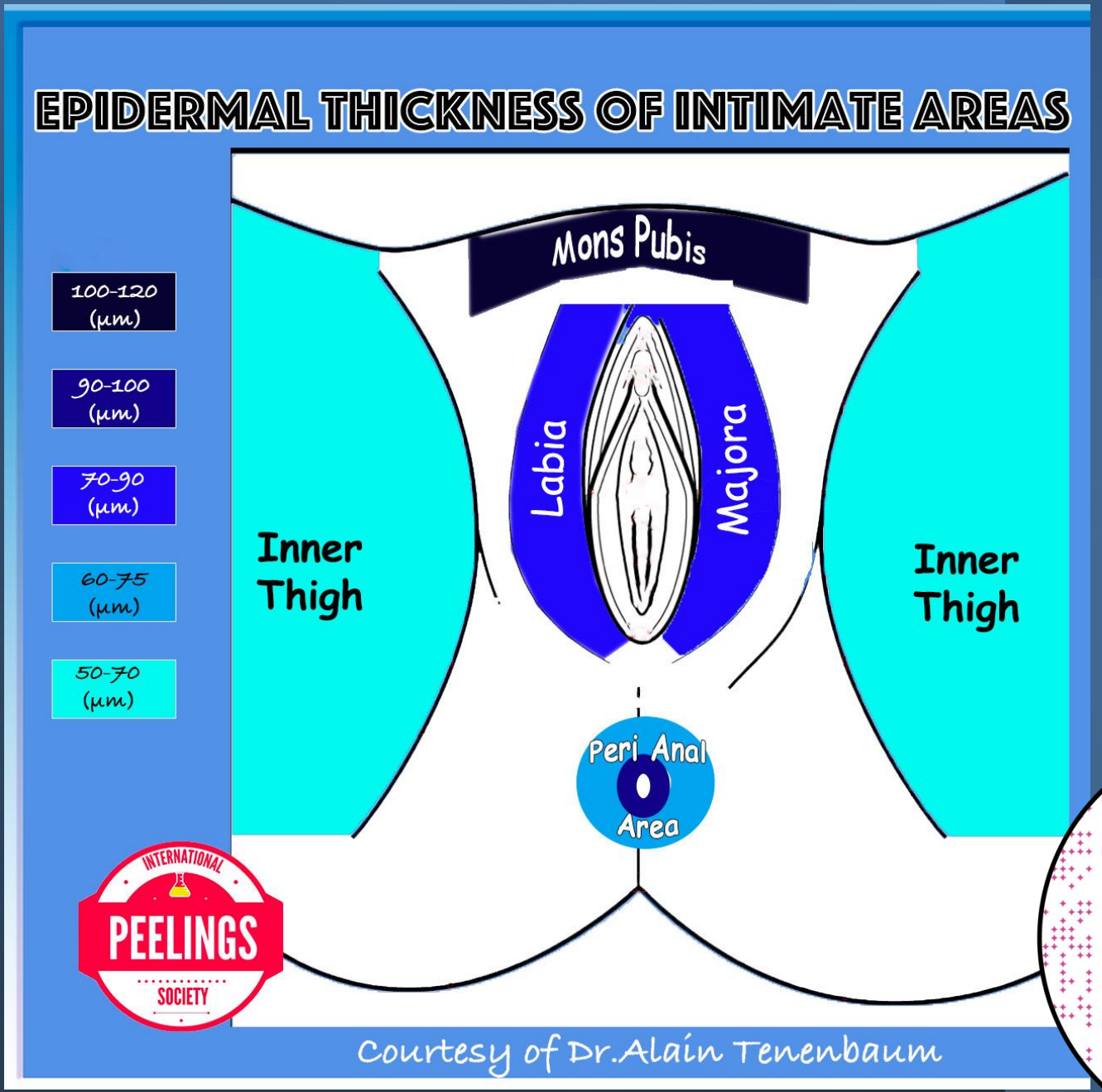
By using the frosting effect ensuring that it *completely covers the hyperpigmented area and effectively obscures the discoloration.*

2.Addressing the 3 key compartments of melanin metabolism

- **<u>Production</u>**: Modifying the melanogenesis process to reduce melanin synthesis.
- **<u>Transport</u>**: Interfering with the movement of melanin within the skin to prevent uneven distribution.
- **<u>Destruction</u>**: Enhancing the breakdown and removal of excess melanin from the skin.

1 + 2 = Aggressive Treatment with Downtime
(Protocol by A. Tenenbaum)
2 = Gentle Treatment Without Downtime
(Protocol by M. Tiziani)

Reduced epidermal thickness increases penetration depth and inflammatory response.



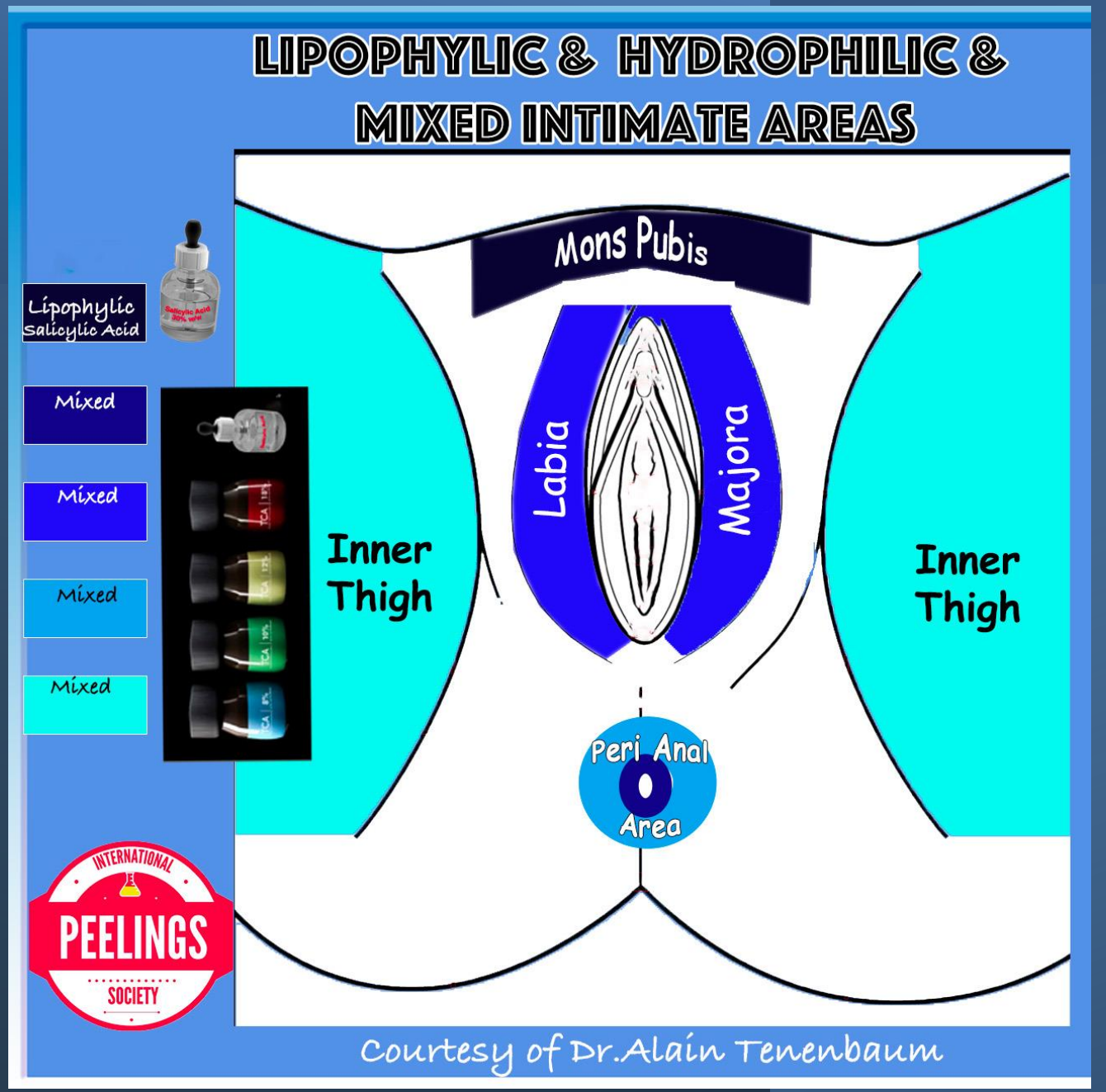
These differences explain why standard peel concentrations cannot be transposed.

1.TARGETING THE PIGMENT DIRECTLY

OR THE ,,COLORKILLER,, OF A.TENENBAUM

Why solvent choice matters in intimate areas

Penetration is driven more by the solvent than by the acid concentration alone.



Targeting the pigment directly
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WHICH SALICYLIC ACID TO USE ?

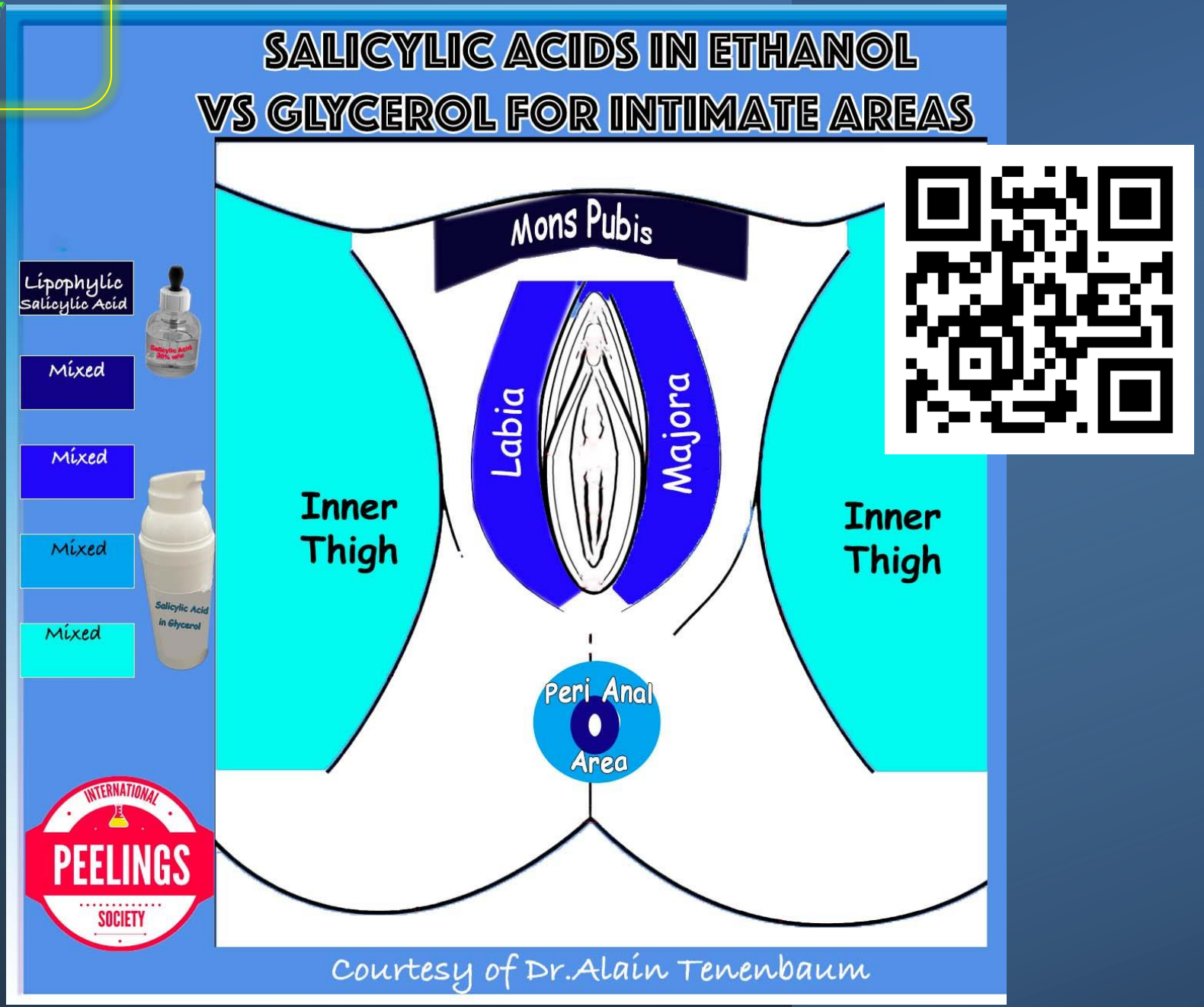
Comparison of Salicylic Acids

Different salicylic acid formulations behave very differently on thin, reactive skin.

TARGETING THE PIGMENT DIRECTLY
OR THE ,,COLORKILLER,, OF A.TENENBAUM

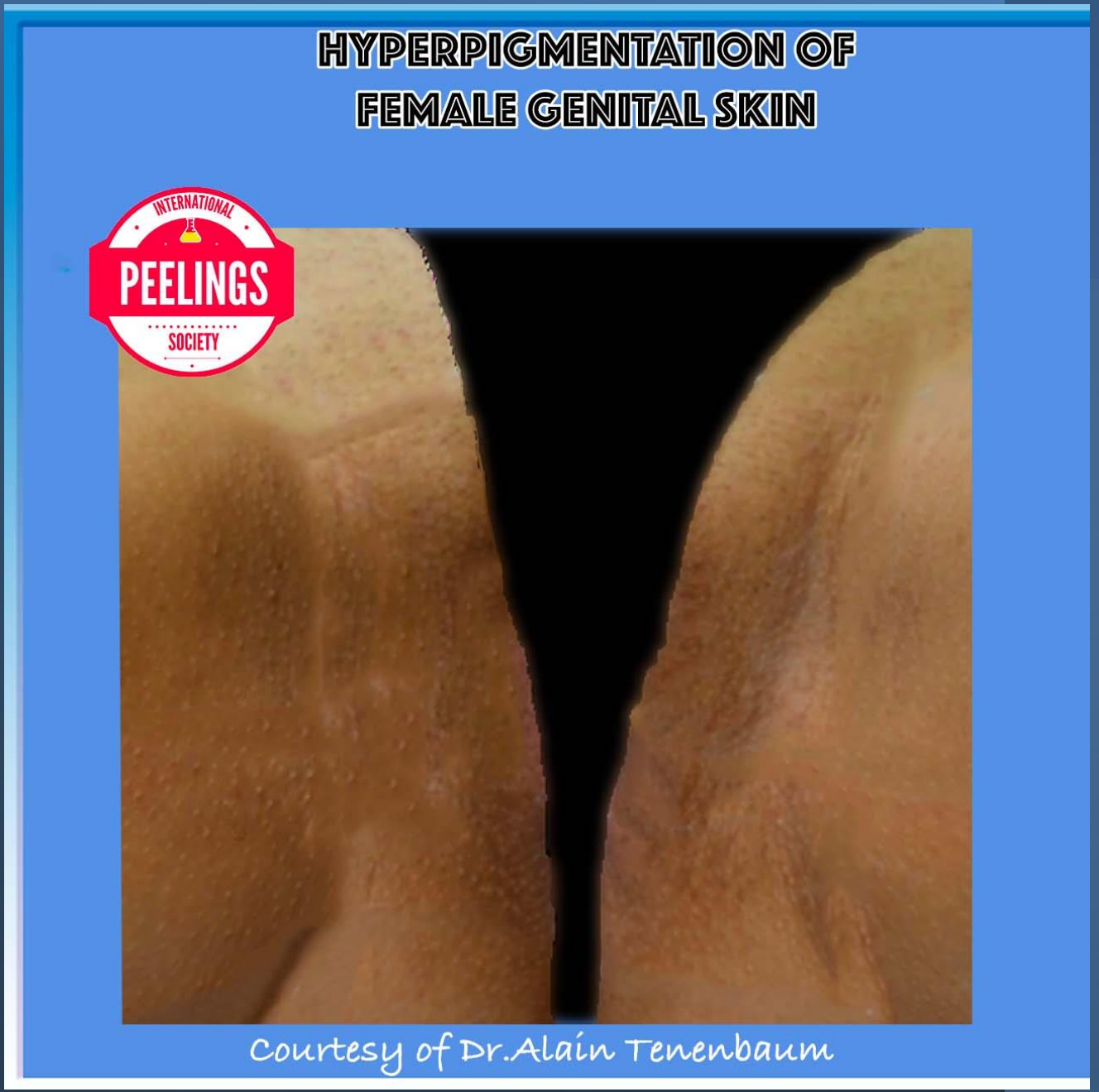
Solvent and delivery system are the primary determinants of safety.

Lower concentration does not automatically mean safer treatment.



TYPICALLY POST-INFLAMMATORY AND FRICTION-RELATED PIGMENTATION.

Clinical appearance alone is not sufficient to decide treatment.



TARGETING THE PIGMENT DIRECTLY

OR THE ,,COLORKILLER,, OF A.TENENBAUM

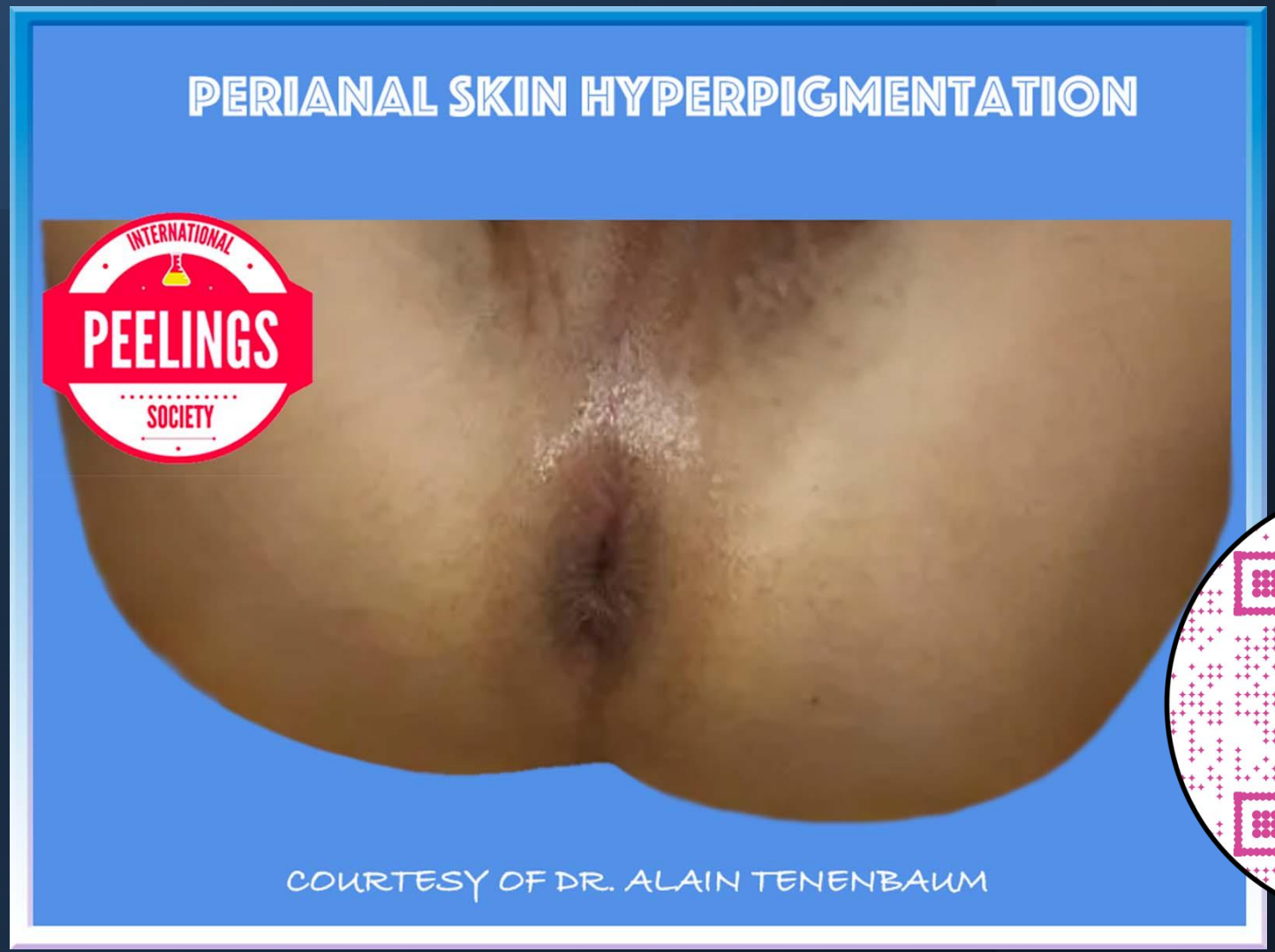
Pseudo-frosting ≠ protein coagulation.

Thin epidermis may transiently appear white without tissue damage.

PERIANAL AREA: THICK, DRY, KERATINIZED SKIN

Male Perianal Area Phototype 3/4

The patient must be depilated 3 days before the procedure and cleaned with chlorexhydine or cetrimide without alcohol before the procedure



PERIANAL AREA IS A THICK DRY AREA

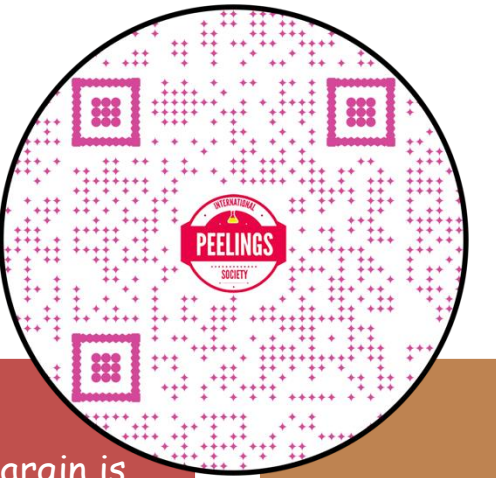
The perianal area is typically considered a ***dry area***, as it has a low concentration of sebaceous (oil-producing) glands.

However, it can become moist due to sweat, mucus, or hygiene-related factors.

The skin in this area can be **sensitive**, so it's important to maintain proper hygiene without causing irritation.

Only the external anal margin is keratinized and treatable.
The anal canal is mucosal and must never be peeled.

EXTERNAL ANAL MARGIN IS THICKER AND DRIER VS PERIANAL AREA



The external anal margin is generally thicker and drier compared to the rest of the perianal skin.

This area has a tougher skin texture, which helps protect it from friction and abrasion.

It's also less oily because it has fewer sebaceous glands.

However, like the rest of the perianal region, it can still be affected by moisture, such as sweat, or irritation from hygiene practices or stool. The skin is also more prone to dryness, particularly if there's excessive wiping or use of harsh products.

Keratinization allows treatment, but does not eliminate PIH risk.

PROTOCOL EXTERNAL ANAL MARGIN & PERI ANAL AREA

take a look

CONCEPTS OF A.TENENBAUM & M.TIZIANI
EXTERNAL ANAL MARGIN & PERI ANAL AREA

Targeting the pigment directly
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COLORKILLER

by inducing a form *of photodamage or 'photonecrosis'* to effectively destroy the colors responsible for the clinical expression of hyperpigmentation

By using the frosting effect ensuring that it *completely covers the hyperpigmented area and effectively obscures the discoloration.*

Results shown are obtained on selected keratinized skin under controlled protocols.

Early improvement does not replace long-term stabilization.

Attack Treatment Protocol for Peri Anal Area

DO'S

- Alternate TCA , Salicylic acid in ethanol and Salicylic acid in glycerol to get a frosting 1 session each 2 weeks x 4-6 weeks
- Then as usual

Attack Treatment Protocol for External Anal Margin

DON'TS

- **Dont use TCA liq because the frosting could reach the rectum !**
- Then as usual

Concepts of A.Tenenbaum & M.Tiziani
External Anal Margin & Peri Anal Area

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Which acids can be used for maintenance

These acids are suitable for maintenance only,
on selected keratinized skin and under strict conditions

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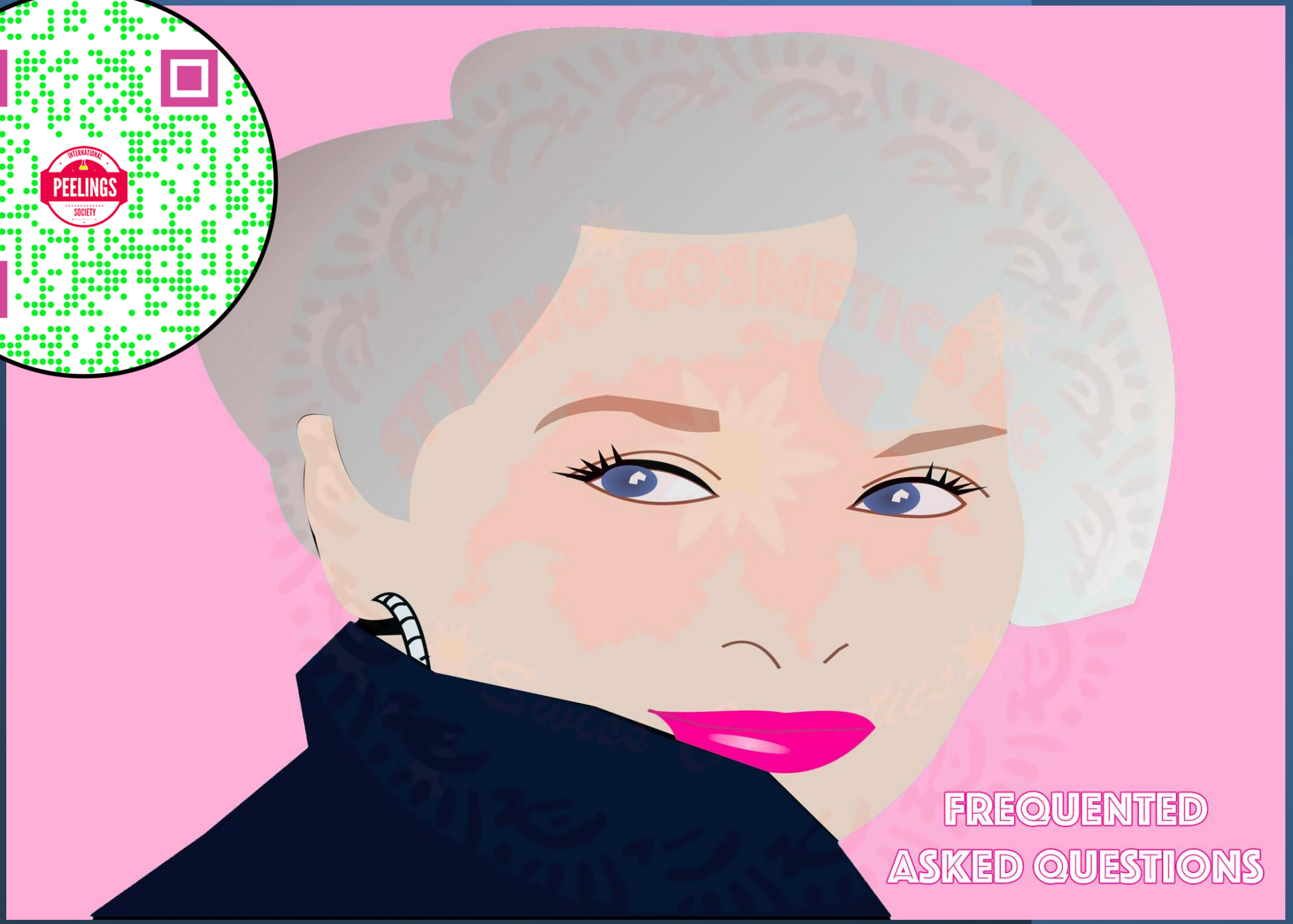
Acids	Mandelic	*Glycolic*	Lactic	Azelaic	Kojic	Phytic
Action	Promotes surface lifting of excess pigment	NO Dispersion of Melanin in basal membrane layer IRRELEVANT	Skin Lightening ??? Not bleaching agent IRRELEVANT	Skin Lightening	Tyrosinase Inhibitor	Melanin formation blocker though chelation ??? IRRELEVANT
pKa	3.37	3.83	3.86	4.55-5.59 DIPROTIC	9.40	HEXAPROTIC 1.1-3.2-5.2 8.0-9.2-12.0
Kerato regulator	YES	YES	YES	YES	NO	?
Moisturizer	NO	NO	NO	MINIMUM	NO	?
AHA						

SPECIAL RECOMMENDATIONS FOR WOMEN

- Beware of menstrual blood (contains iron and can therefore create a tattoo)
- That is why Peeling de Luxe Plus is used during the menstrual period.
- Contraindications: pregnancy,hormones (birth control pills) ,anal sex.
- Sex is possible when desquamation is over


INTERNATIONAL
PEELINGS
SOCIETY
FREQUENTED
ASKED QUESTIONS

CLINICAL COMPETENCE REQUIRES MORE THAN KNOWLEDGE

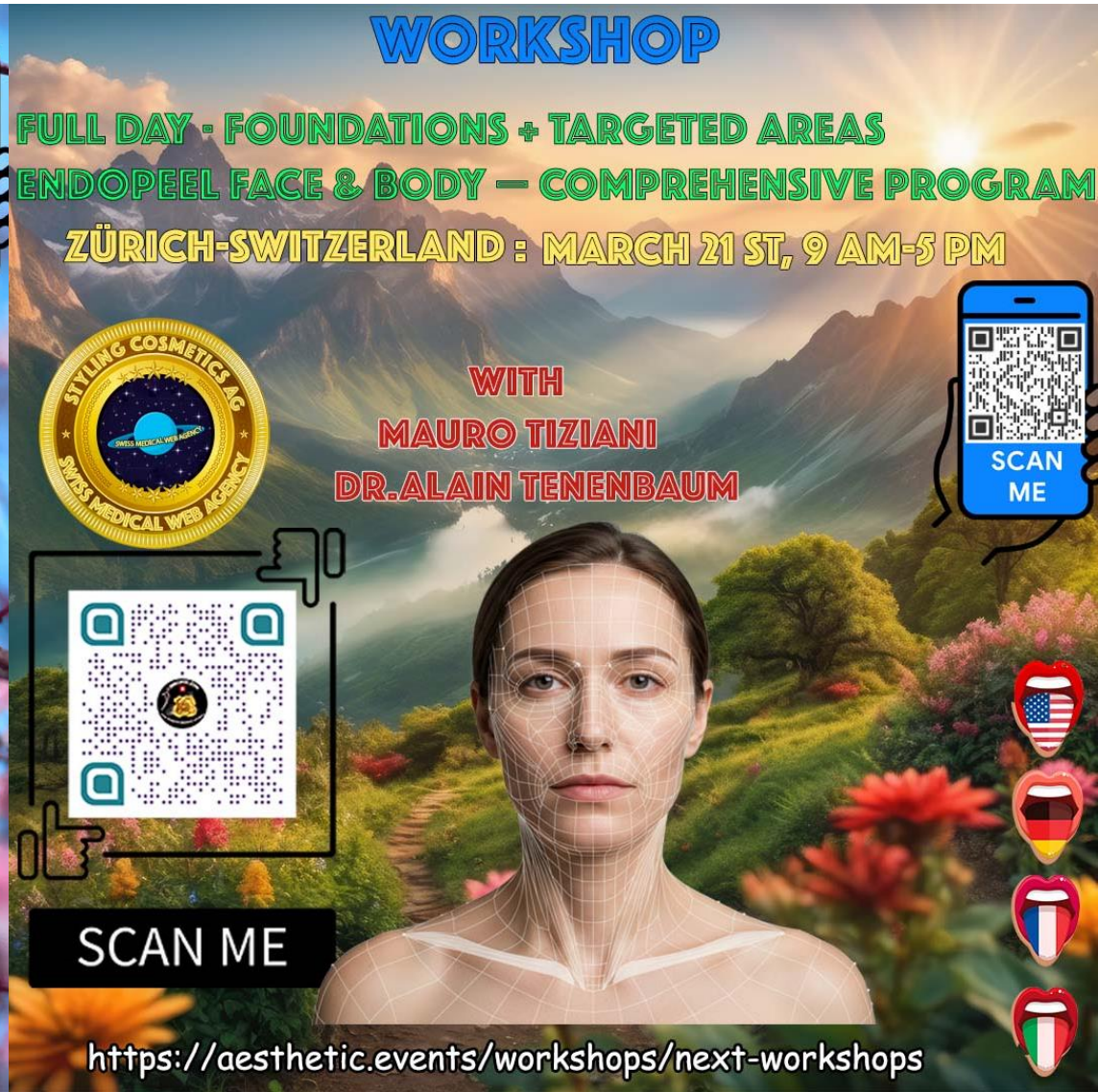
- Academic training provides structure and understanding.
- Clinical competence emerges only through supervised application.
- For physicians wishing to go beyond theory, I offer **restricted-access hands-on clinical sessions**, independent from AIME.
- Participation is limited and subject to clinical prerequisites.

Further information:

https://aesthetic.events/next-workshops

NEXT WORKSHOPS IN ZÜRICH

MARCH 20-21,2026 IN 1 MONTH !




STYLING COSMETICS AG
Home
Products List
Main Protocols
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Metabolic Peels Technics
Gallery
Shop online
Peels Bestseller
Order Help
Indications
Moisturizers
Best Product : Les Félins
INTENSIVE DEEP HYDRATION
A moisturizer cream is an essential part of a skincare routine, working wonders to keep your skin hydrated and healthy. It is a product that helps to replenish and lock in moisture, preventing dryness and promoting a supple complexion.
Take a Look
Anti Aging
Best Product : Lipoic Acid Cream
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EyeContour
Best Product : EyeContour Gel
One highly recommended cosmetic cream for the eye contour is EyeContour. Its lightweight and fast-absorbing formula helps to hydrate, nourish, and rejuvenate the skin around your eyes. It also works to reduce the appearance of dark circles, puffiness, and crow's feet.
Take a Look
BEFORE
AFTER 4 SESSIONS
Courtesy of Dr Alain Tenenbaum
D365 stable
D0
D60
09:27
Styling Cosmetics AG
For MD-Doctors
What is Endopeel
For Patients
Inventors
Peelings
Congresses + Workshops
APP
ENDOPEEL

Peels COURSE

Its time to wake up

A.TENENBAUM, M.D.,Ph.D., D.Sc
M.TIZIANI, RCSA