

**Peels**  
**CLASSIFICATION OF A.TENENBAUM**  
**DU AESTHETIC MEDICINE**  
**06-2025**



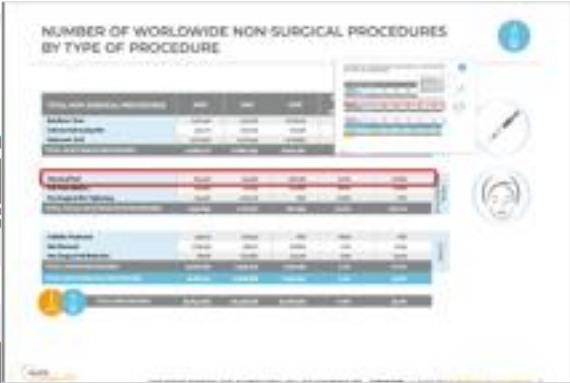
A.TENENBAUM, M.D., Ph.D., D.Sc  
M.TIZIANI, RCSA



# NUMBER OF WORLDWIDE NON-SURGICAL PROCEDURES BY TYPE OF PROCEDURE



TOTAL NON-SURGICAL PROCEDURES	2022	2021	2018	P
Botulinum Toxin	9,221,419	7,312,616	6,097,516	20
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%



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%



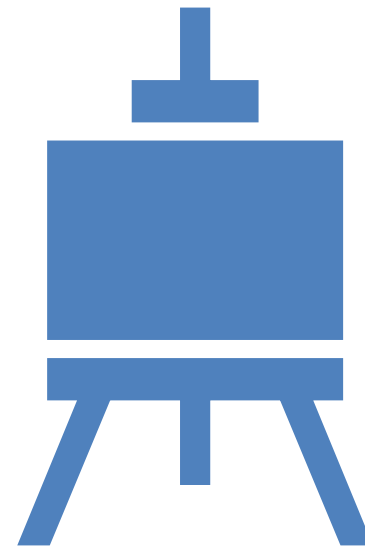
TOTAL PROCEDURES	33,844,293	30,439,576	23,266,375	11.2%	45.5%
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to wake up your  
interest

[Peels Gallery](#)





# Why Perform Chemical Peels?

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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.

# Take a Look

## My personal case

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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

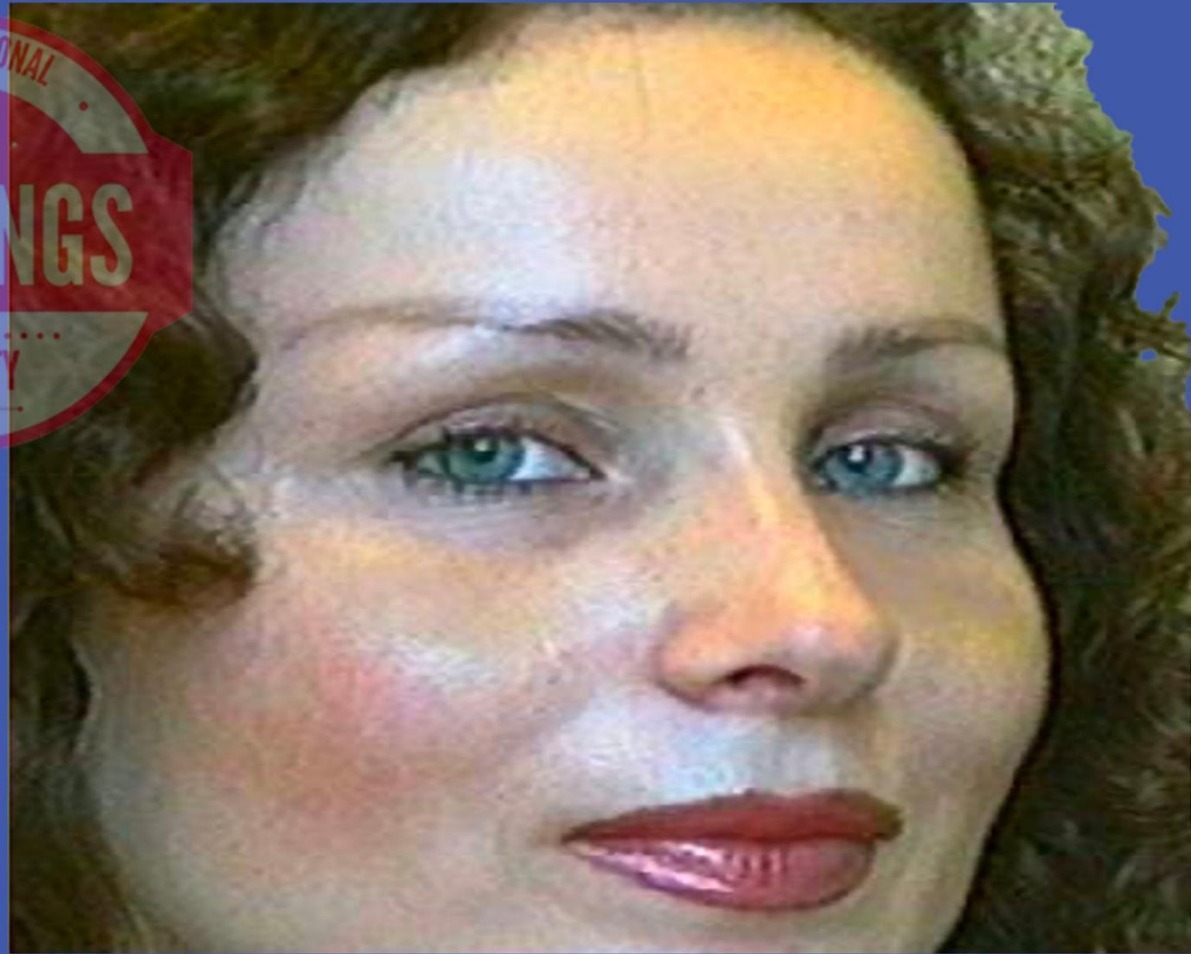


# Surgical Rhinoplasty + Metabolic Peels

BEFORE



AFTER



Courtesy of Dr. Alain Tenenbaum

# Lipoplasty + Facelift + Blepharoplasty + Endo Peel + Metabolic Peels

BEFORE

AFTER



Courtesy of Dr. Alain Tenenbaum



# Lipoplasty + Facelift + Blepharoplasty + Endopeel + Metabolic Peels

BEFORE

AFTER



Courtesy of Dr. Alain Tenenbaum



# Facelift + Blepharoplasty + Endopeel + Metabolic Peels

BEFORE

AFTER



Courtesy of Dr. Alain Tenenbaum





# Scientific Publications of Interest





PROCEDURES IN COSMETIC DERMATOLOGY  
Series editor: Jeffrey S. Dover  
Associate editor: Murad Alam

# Chemical Peels

Edited by Rebecca C Tung  
Mark G Rubin

SAUNDERS  
ELSEVIER

2<sup>ND</sup> EDITION



DERMATOLOGÍA ESTÉTICA  
Editor de la serie: Jeffrey S. Dover  
Editor asociado: Murad Alam

# Exfoliación química

Editado por Rebecca C. Tung  
Mark G. Rubin



2.<sup>a</sup>  
EDICIÓN





Series editors

Jeffrey S. Dover  
Murad Alam



Enhanced  
**DIGITAL**  
VERSION  
Included

PROCEDURES IN COSMETIC DERMATOLOGY

THIRD EDITION

# Chemical Peels

Edited by

Suzan Obagi MD

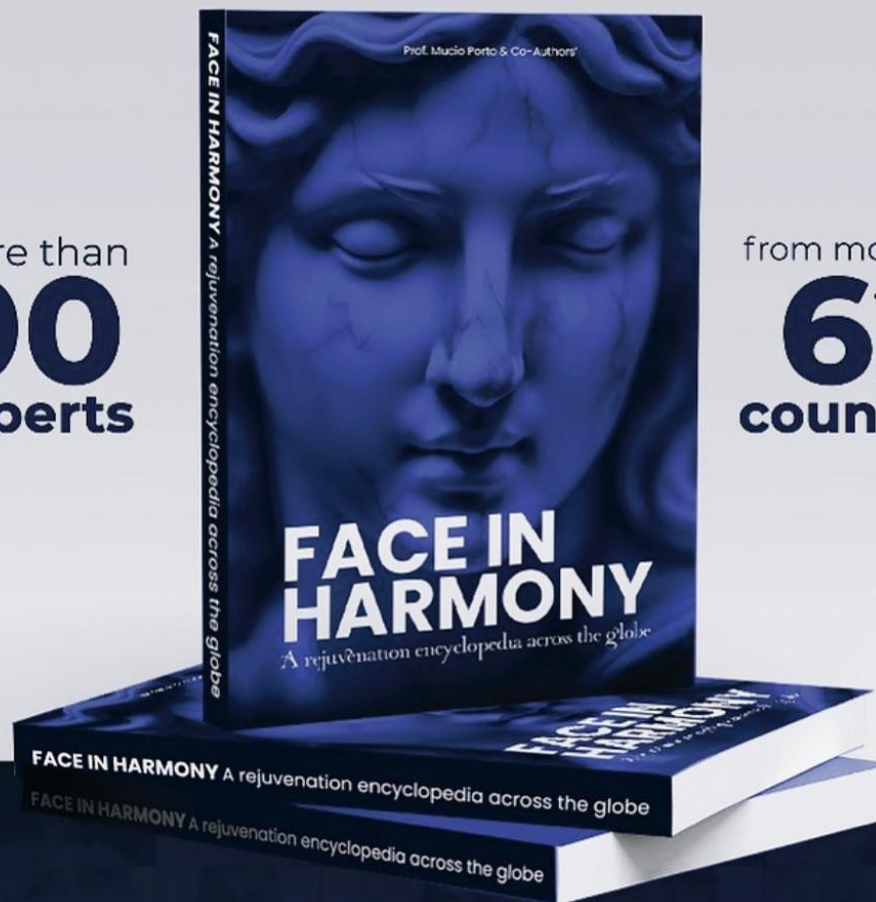


ELSEVIER

# 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

**1**

# **The Chemistry of Peels: A Hypothesis of Action Mechanisms and a Proposal of a New Classification of Chemical Peelings**

Luc Dewandre, Alain Tenenbaum

**1**

# **Química de las exfoliaciones: hipótesis de los mecanismos de acción y propuesta de una clasificación nueva de las exfoliaciones químicas**

Luc Dewandre, Alain Tenenbaum



# DEFINITION OF CHEMICAL PEELS



*flake-off? peel-off ?*

A chemical peel is a treatment technique that is used to

**Improve and smooth** the *facial* and / or *body* skin structure

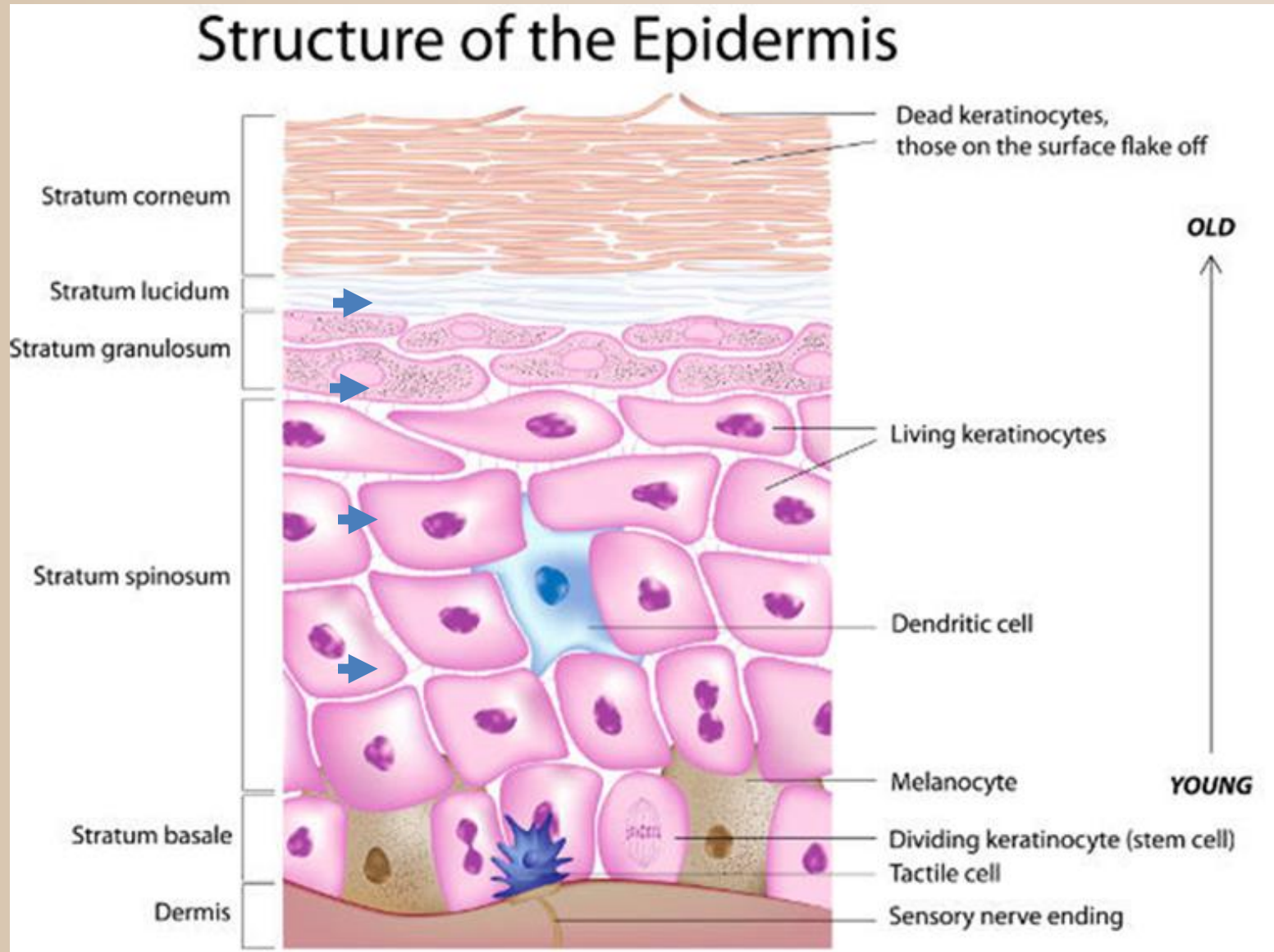
with a chemical solution, which causes

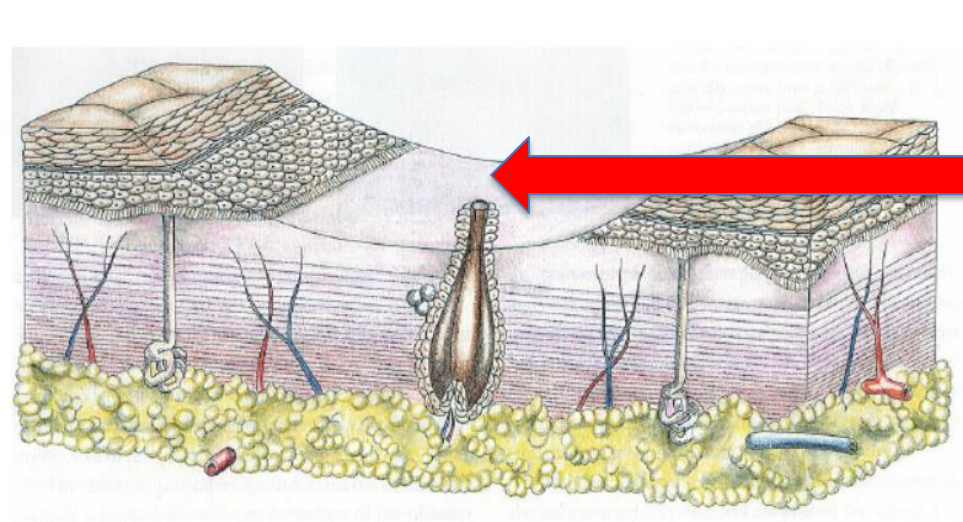
- The **dead skin** peels off
- The **regenerated skin** is usually smoother and less wrinkled than the old skin.

**Desquamation is not mandatory**

# Epidermis Histology

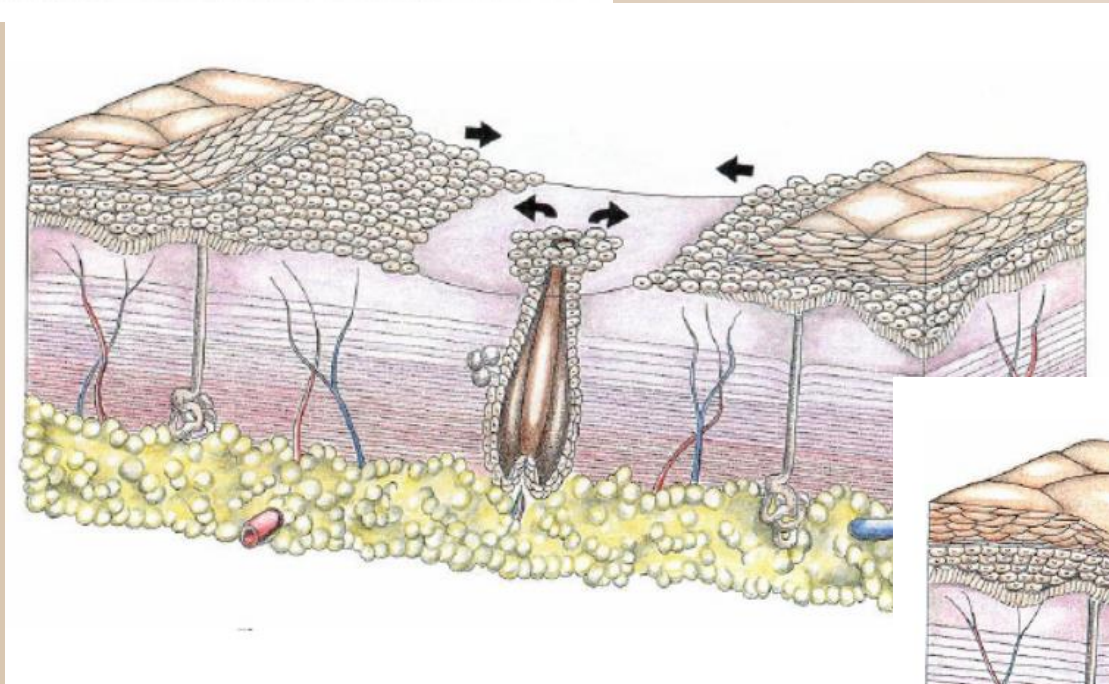
Most of the cells in the epidermis are keratinocytes, which are organized into 4 layers



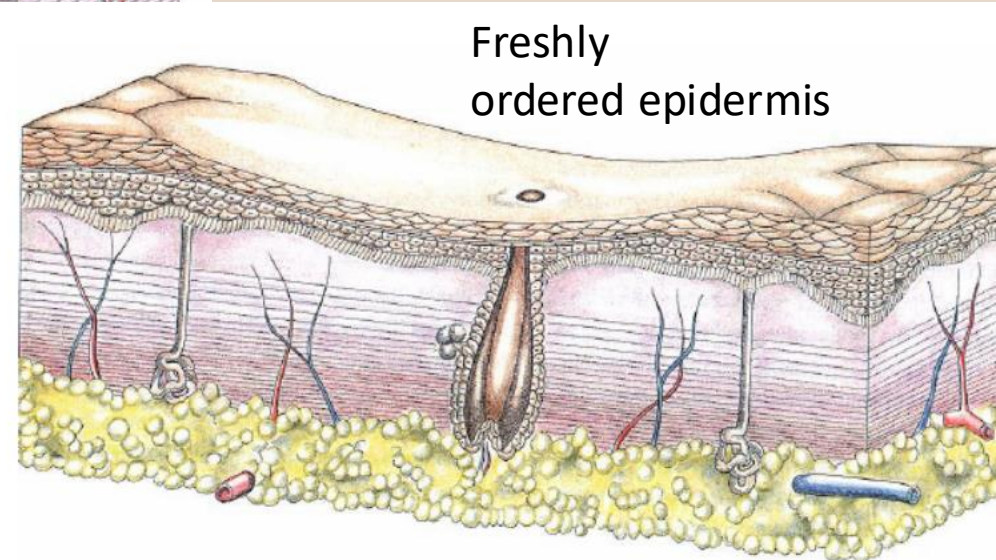


Acid-Induced Skin Reaction

**Burn of the epidermis and superficial dermis**



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

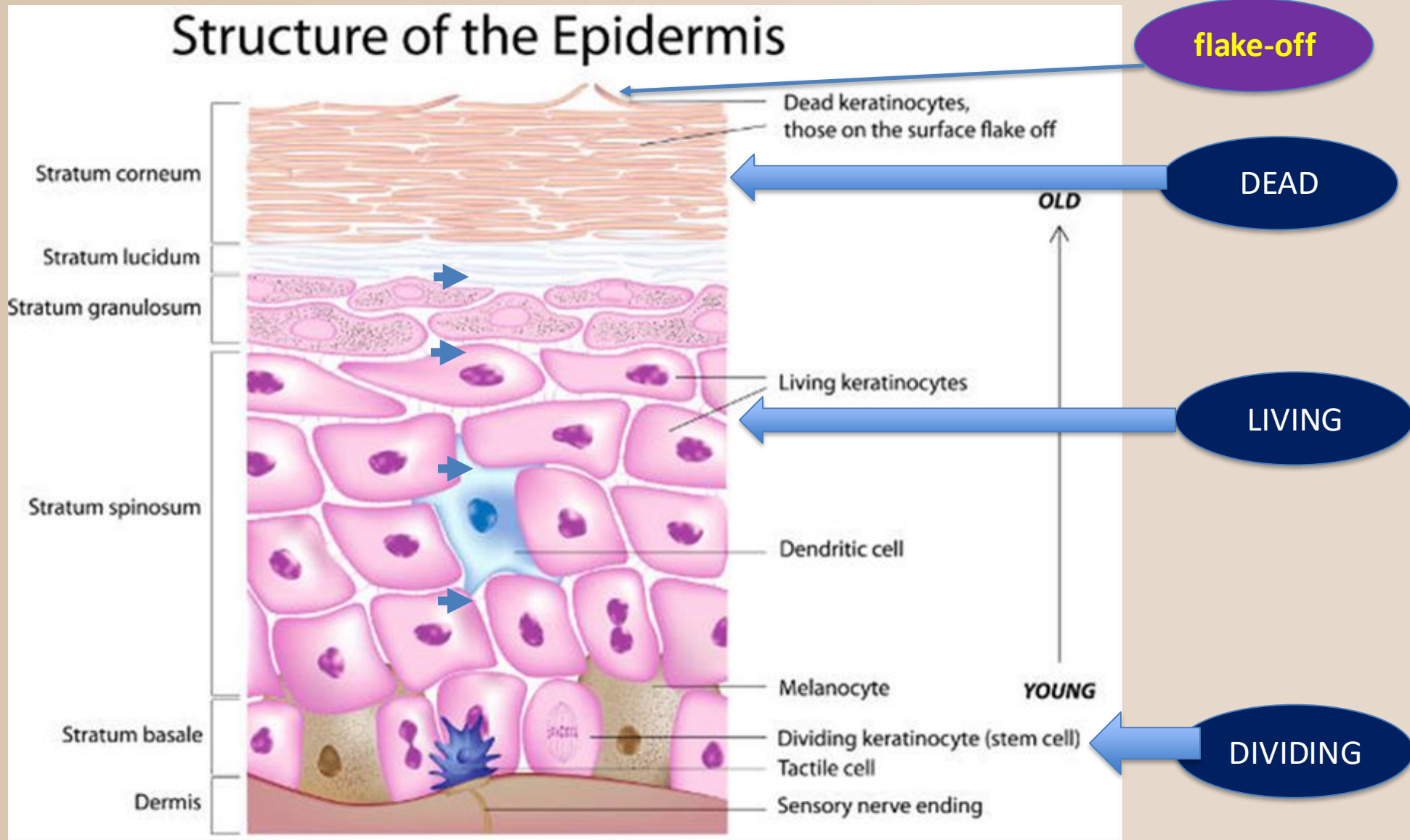


**Physiopathology of the Not Metabolic Acids**



# Epidermis & Keratinocytes

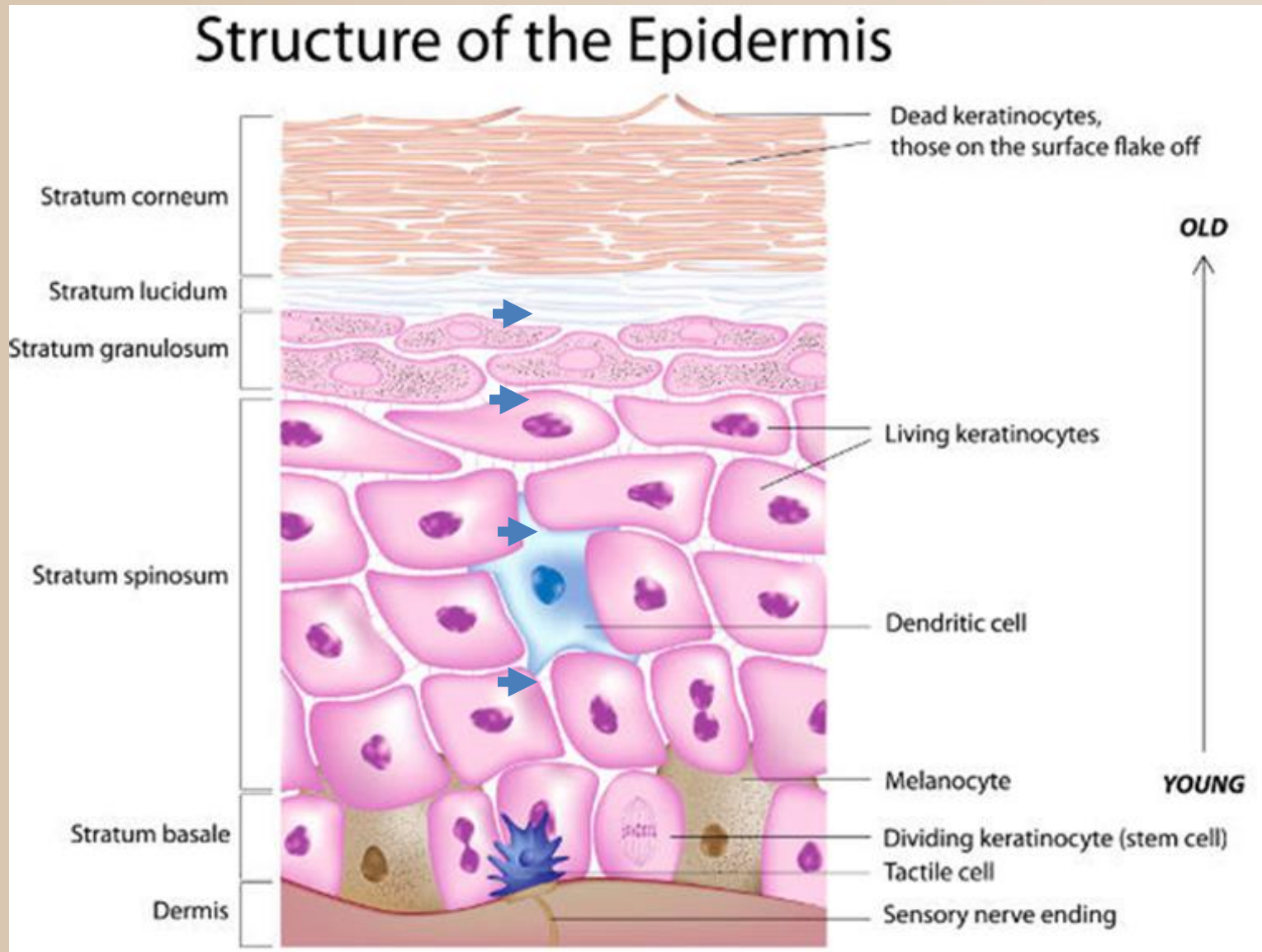
Most of the cells in the epidermis are **keratinocytes**, which are organized into **4 layers**





# Epidermis

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



**30 MIN peel-off**

**OTHER Peels**

# IMPORTANT TO KNOW

## BOTH ARE Peels

## COMBINATION IS POSSIBLE

peel-off-flake-off  
**NO DESQUAMATION**

30 Min Peel Off  
No desquamation



Courtesy of Dr. Alain Tenenbaum



**DO'S**

**NO COMPLICATION**

**SLOUGH OFF**  
**WITH DESQUAMATION**

Desquamation 7 days after TCA on Asian Skin



Courtesy of Dr. Alain Tenenbaum & Mauro Tiziani



**DON'TS**

**HUGE RISK OF COMPLICATIONS**



# 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 7 days after TCA on Asian Skin*



*Courtesy of Dr.Alain Tenenbaum & Mauro Tiziani*

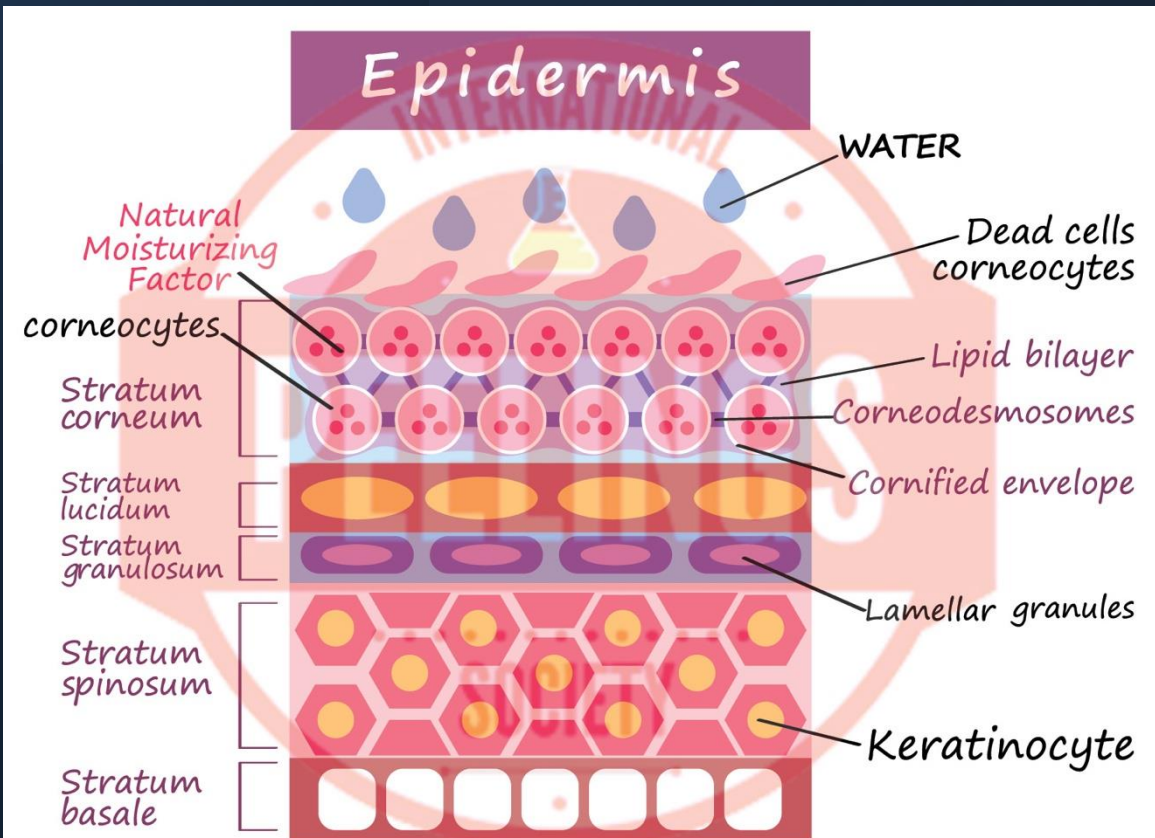


# Desquamation Day = Dangerous Day

## Role of Corneocytes



Desquamation 7 days after TCA on Asian Skin



Courtesy of Dr. Alain Tenenbaum & Mauro Tiziani



# 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).





Desquamation Day  
Use only  
Demineralized  
Water



# Peel Off-Flake Off

Valid for all skin types at any time of the year

30 Min Peel off

On black Skin



COURTESY OF DR. ALAIN TENENBAUM

30 Min Peel off



COURTESY OF DR. ALAIN TENENBAUM

30 Min Peel off

On indian Skin

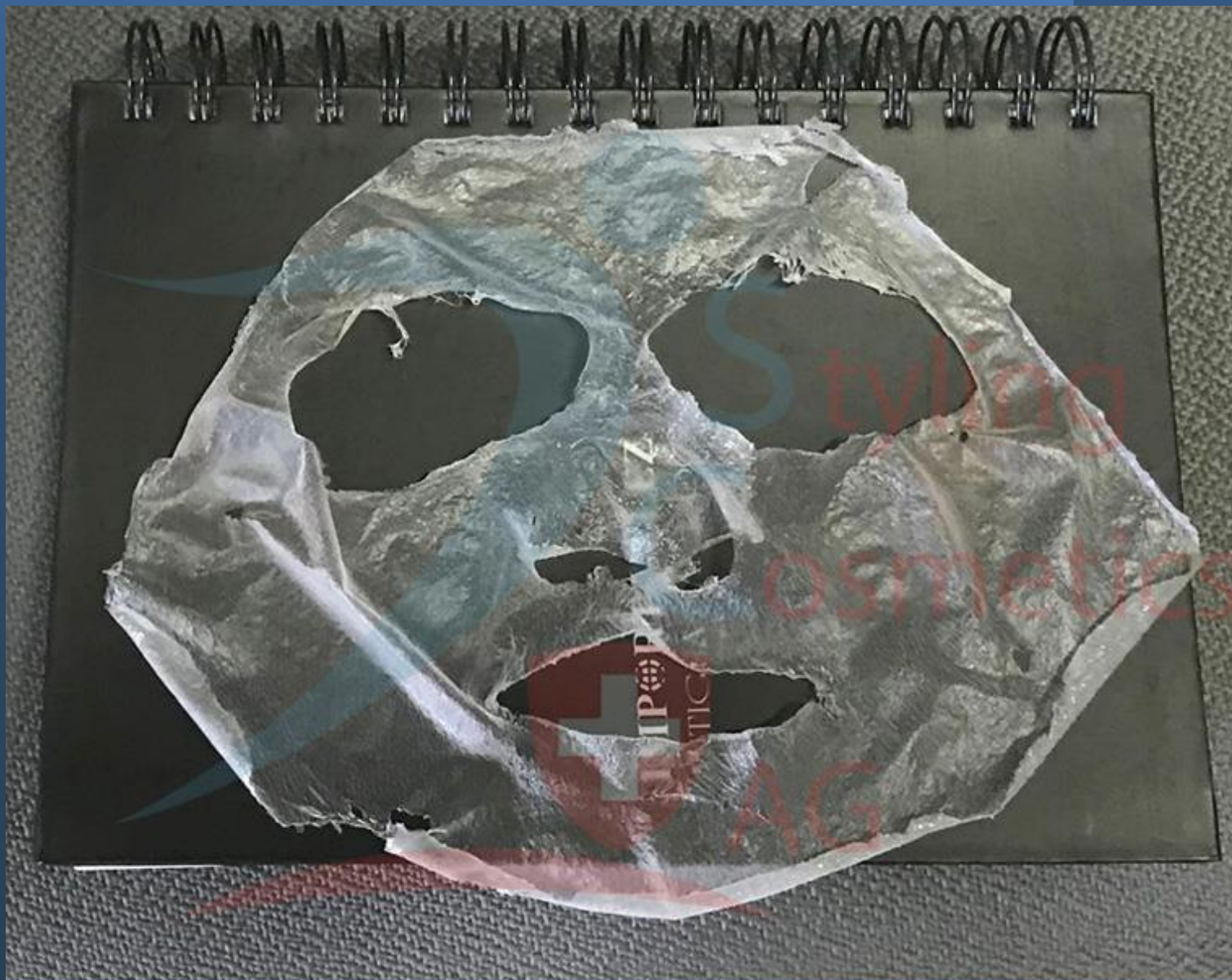


COURTESY OF DR. ALAIN TENENBAUM





**30 MIN PEEL OFF : REMOVE IT FROM TOP TO DOWN**



**30 MIN PEEL OFF : FULL MASK REMOVED**





**30 MIN PEEL OFF : BLACK POINT REMOVED**



# Hands Immediate Rejuvenation Using 30 Min Peel Off

BEFORE



AFTER 45 MIN



Courtesy of Mauro Tiziani

# Main Indications for Peels Face,Body,Hands,Feet

- 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 due to other Peels treatment



See More Indications on  
<https://chemicalpeeling.com/>



**THE ISSUES  
CAUSED 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 Otolaryngology	Mr. N. Asherson
Journal of Lipid Research	Bristol Myers Co. Limited

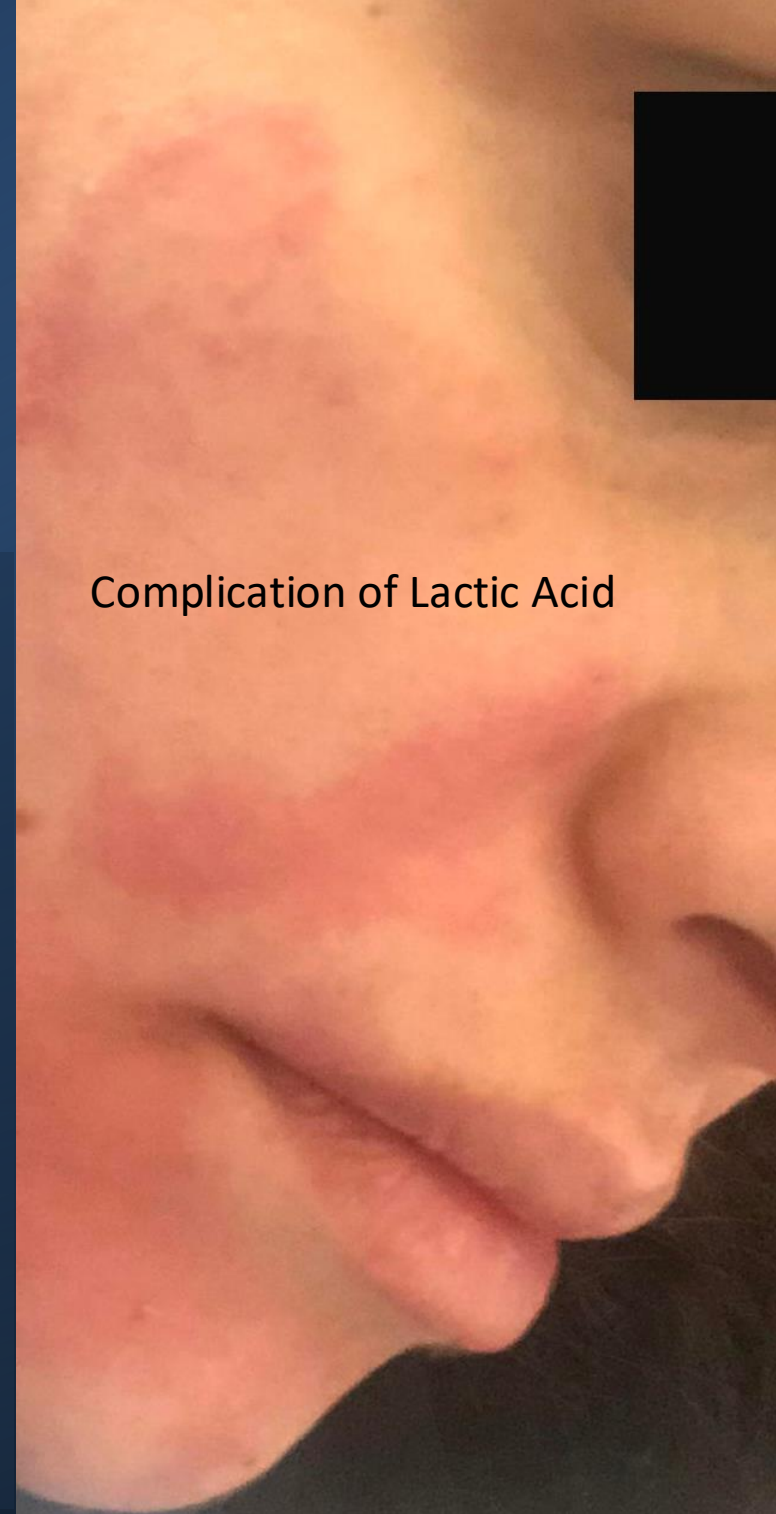
Archives of Dermatology	Stiefel Laboratories (UK) Limited
Archives of Environmental Health	Dr. E. T. Ruston
British Heart Journal	Boehringer Ingelheim Limited
British Journal of Clinical Pharmacology	Anonymous
British Journal of Dermatology	E.R. Squibb & Sons Limited
British Journal of Industrial Medicine	Dr. E. T. Ruston
British Journal of Ophthalmology	Beresford & Betty Hall-Parker
British Journal of Pharmacology	Leo Laboratories Limited
British Journal of Psychiatry	E.R. Squibb & Sons Limited
British Journal of Rheumatology	Air Commodore D. Stevenson
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

# The issues caused by Big Pharma

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

Complication of Lactic Acid





**Encuesta sobre Dermatitis facial**  
causada por el uso de cubrebocas en el personal  
médico durante la pandemia de COVID-19 en México.

# Victims of Covid Restrictions

The issues caused by Bureaucrats.



de los médicos alumnos de la  
5ª generación del Diplomado en Nutrición  
Anti-envejecimiento y Estética 2021



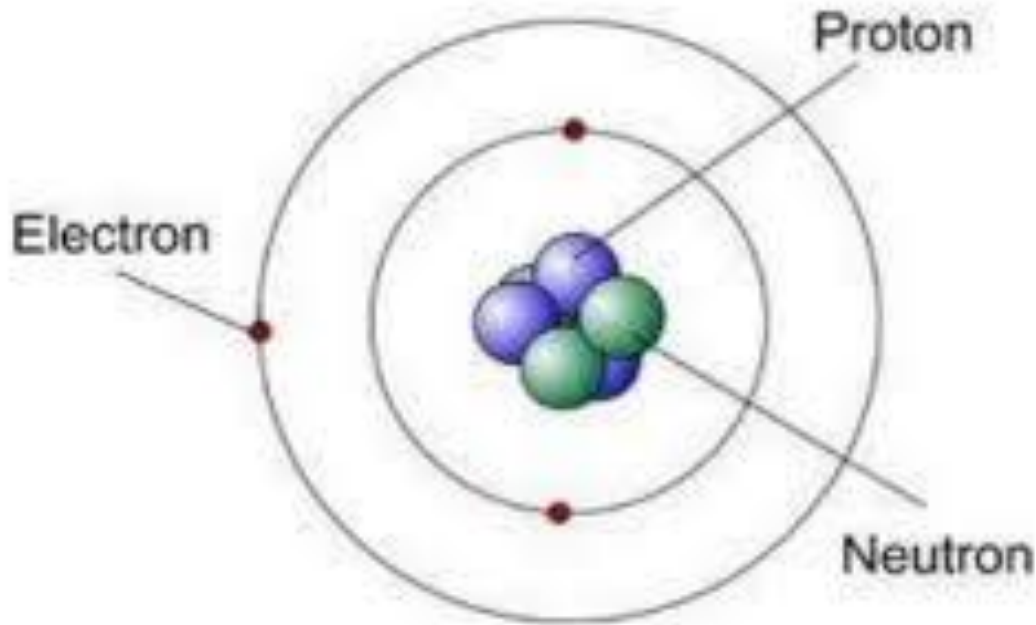
## Learning Objectives

- 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?

# Structure of atoms, molecules

Ions : Anions +Cations

Protons and neutrons



- **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.**

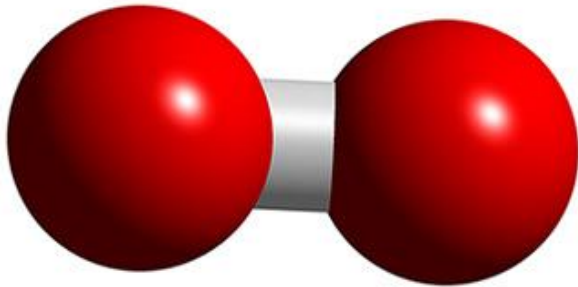
Atomic nucleus = protons + neutrons

Atomic shell = electrons



# Structure of molecules

oxygen or O<sub>2</sub>



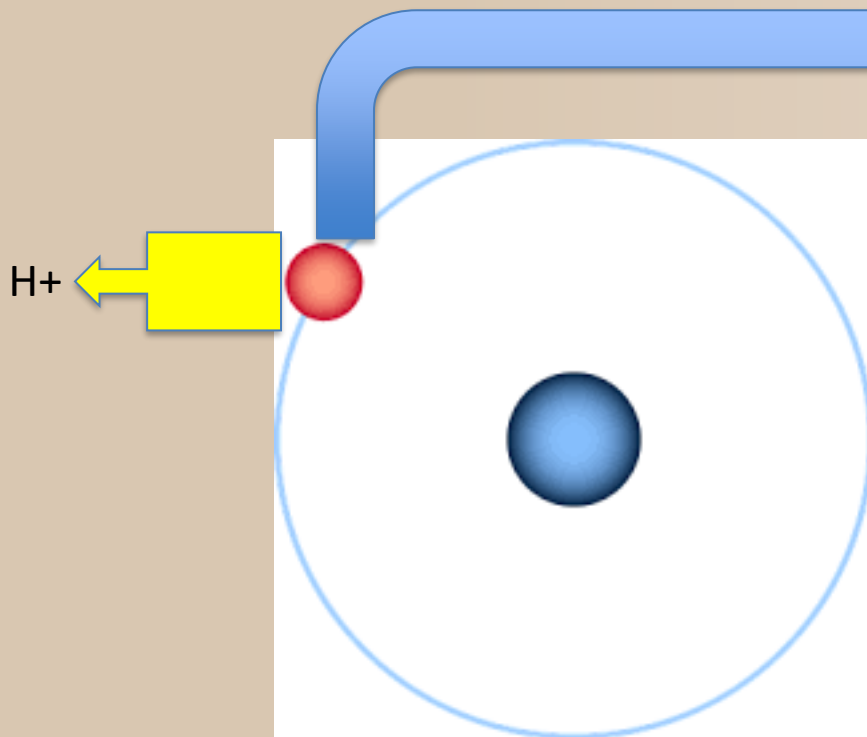
- Molecular structure or molecular geometry is the geometric, spatial relative arrangement of atoms in a molecule
- 

Molecules  $\geq$  2 atoms together ( A.Tenenbaum)

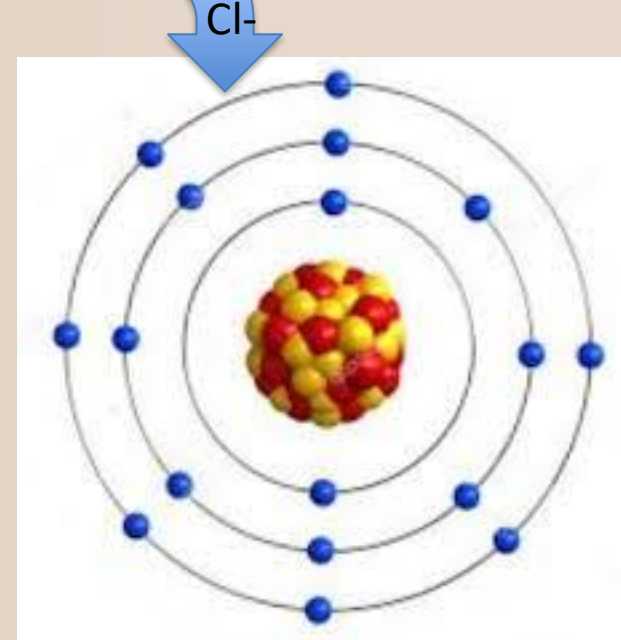
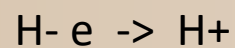
# Structure of ions and molecules

ELECTRONS LOOSER = POSITIVE IONS = CATIONS

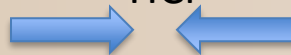
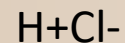
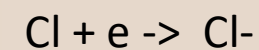
ELECTRONS WINNER = NEGATIVE IONS = ANIONS



HYDROGEN



CHLORINE



# Mendeleev's periodic table

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# Binding and 2(nxn) Covalence

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

## Lewis-Struktur von Wasser H<sub>2</sub>O





THE WATER  
H<sub>2</sub>O

# Anzahl der Valenzelektronen

2



He

5



N

3



Al

6



S

2

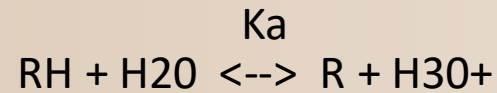
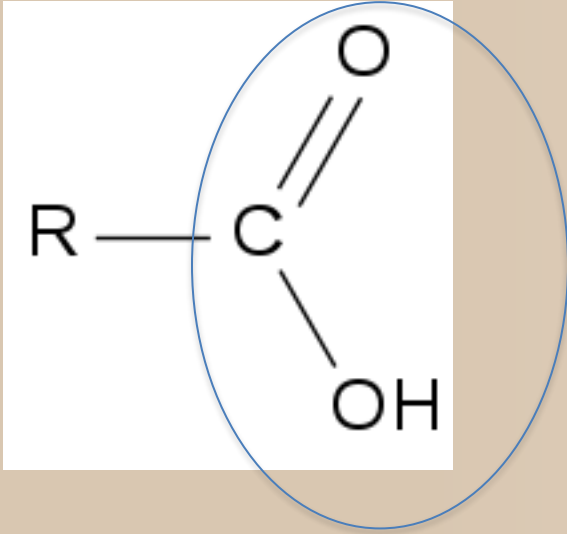


Ca

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



# the acid function



R = A<sup>-</sup> = Anion

H<sub>3</sub>O<sup>+</sup> = Cation

K<sub>a</sub> = constant of dissociation of an acid in solution

$$\text{pK}_a = -\log(\text{K}_a)$$



**H<sub>3</sub>O<sup>+</sup>** = HYDRONIUM ION or acid ion



**R-COO<sup>-</sup>** = Anion

$$\text{pH} = -\log(\text{H}_3\text{O}^+)$$

# Practical exercise

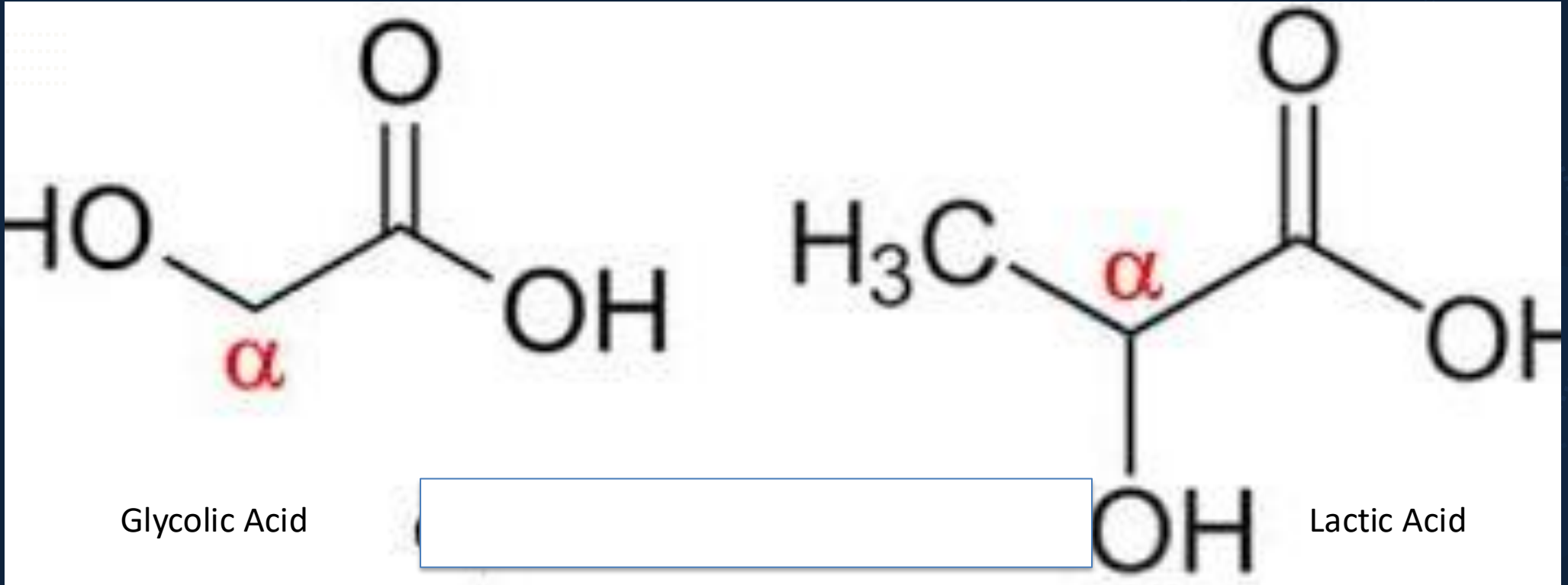
## the acid function - COOH

- H<sub>2</sub>O Water
- Glycolic acid C<sub>2</sub>H<sub>4</sub>O<sub>3</sub>
- Lactic acid C<sub>3</sub>H<sub>6</sub>O<sub>3</sub>
- TCA Trichloroacetic acid C<sub>2</sub>Cl<sub>3</sub>HO<sub>2</sub>
- Acetic acid C<sub>2</sub>H<sub>4</sub>O<sub>2</sub>

## 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





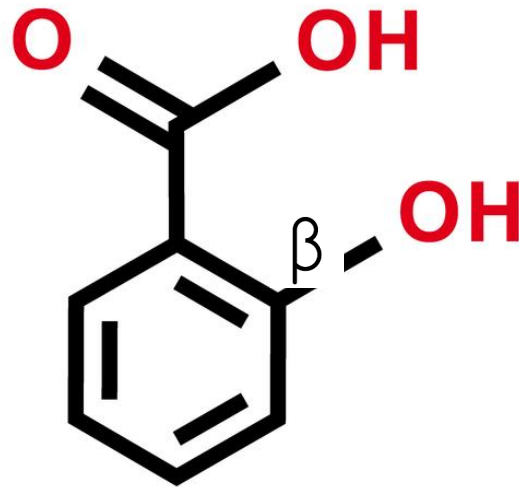
# The Category of BHA or Beta Hydroxy Acids

the hydroxy radical -OH



Beta carbon

the acid function -COOH

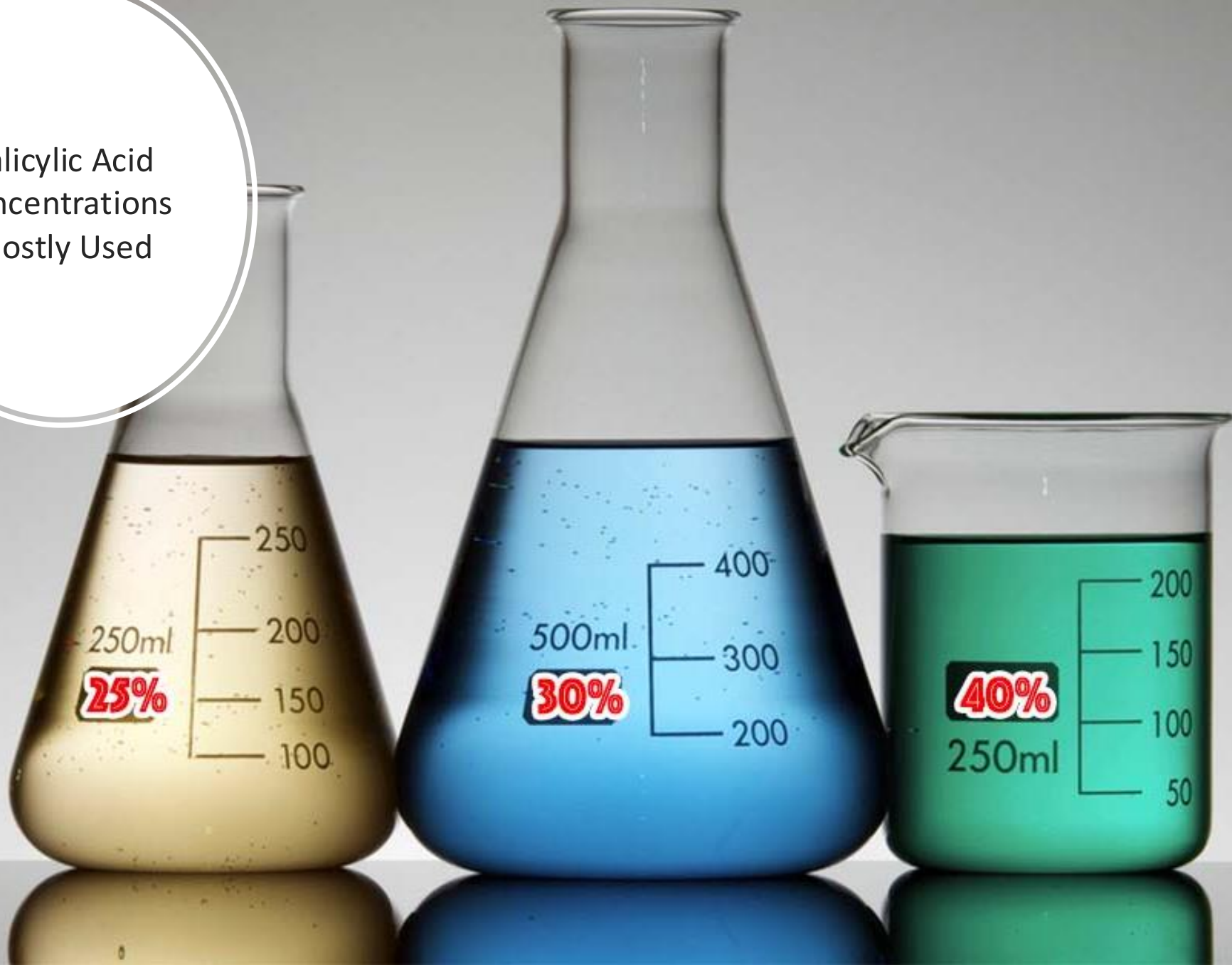


**SALICYLIC ACID**



# SALICYLIC ACID CONCENTRATIONS

Salicylic Acid  
Concentrations  
Mostly Used



# AHA vs. BHA: Solubility and Clinical Application



## AHA

Alpha Hydroxy Acid

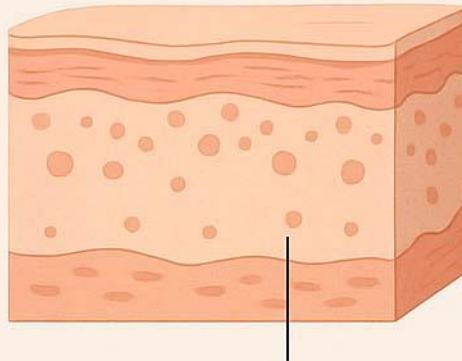
**WATER-SOLUBLE**



## BHA

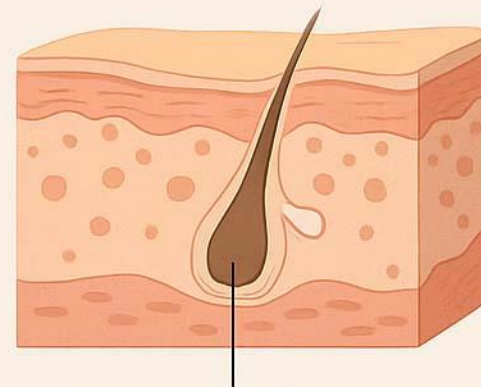
Beta Hydroxy Acid

**OIL-SOLUBLE**



Surface exfoliation

Dry, sun-damaged skin



Deeper into pores

Acne-prone, oily skin





## Comparison of AHA vs BHA

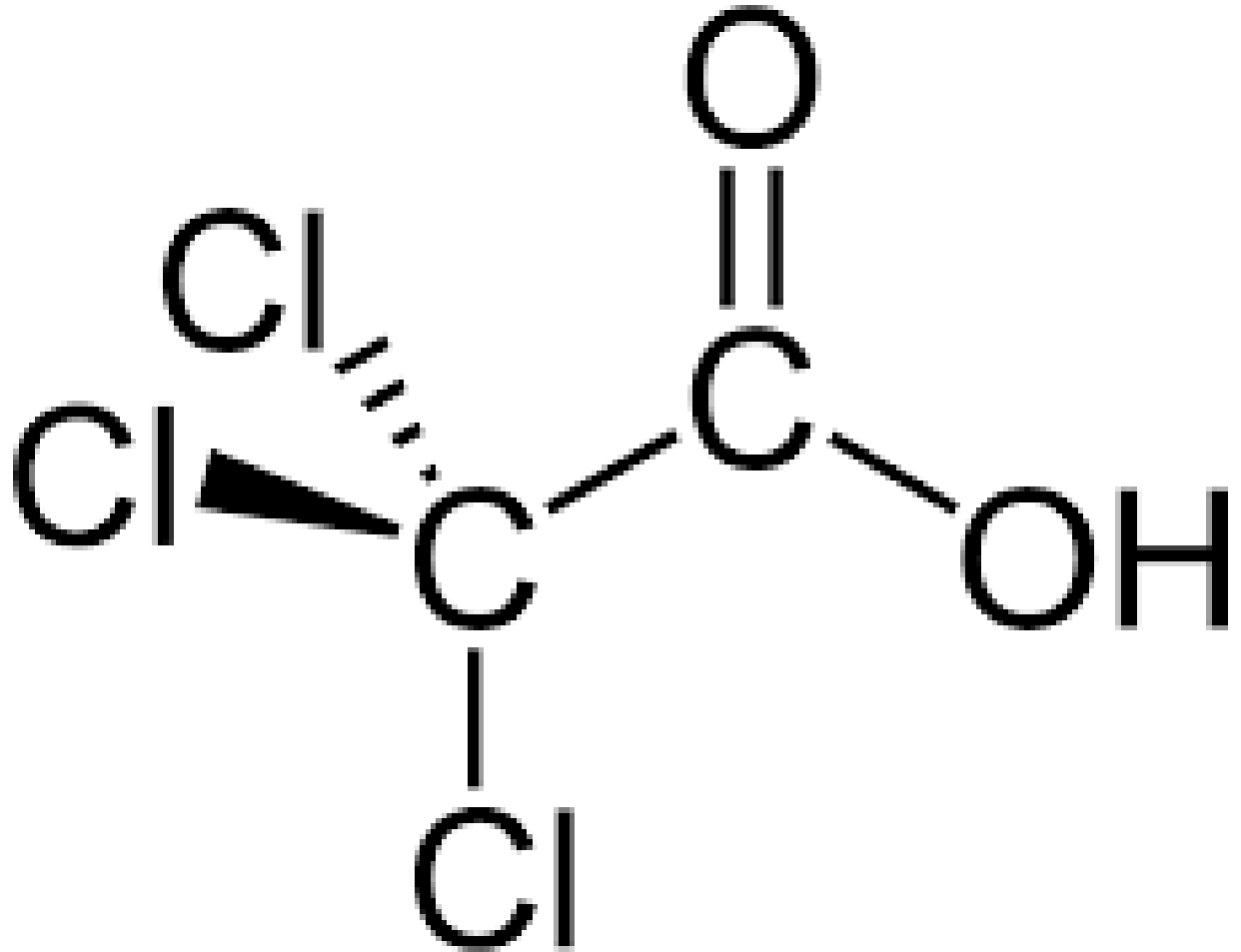
	AHA	BHA
1	Acid <ul style="list-style-type: none"><li>• Citric Acid</li><li>• Lactic Acid</li></ul>	Salicylic Acid
2	Solubility	
	Water Soluble	Oil Soluble
3	Target	
	Surface Exfoliation	Penetrates deeper into the Pores
4	Actions	
	<ul style="list-style-type: none"><li>• On Skin surface</li><li>• Remove Skin Dead cells</li><li>• Improve Texture</li><li>• Hydrate the Skin ( citric acid)</li></ul>	<ul style="list-style-type: none"><li>• Dissolve Sebum</li><li>• Clear Clogged Pores</li><li>• Reduce Inflammation</li><li>• Comedolytic Properties</li></ul>
5	Effectiveness	
	<ul style="list-style-type: none"><li>• On Dry Skin</li><li>• On Sun Damaged Skin</li><li>• On Mature Skin</li></ul>	<ul style="list-style-type: none"><li>• On Acne Prone</li><li>• On Oily Skin</li><li>• On Black Heads</li></ul>
6	For Dark Skin Types	Better Tolerated

# TOPOGRAPHICAL MAPPING OF DRY AND OILY FACIAL SKIN



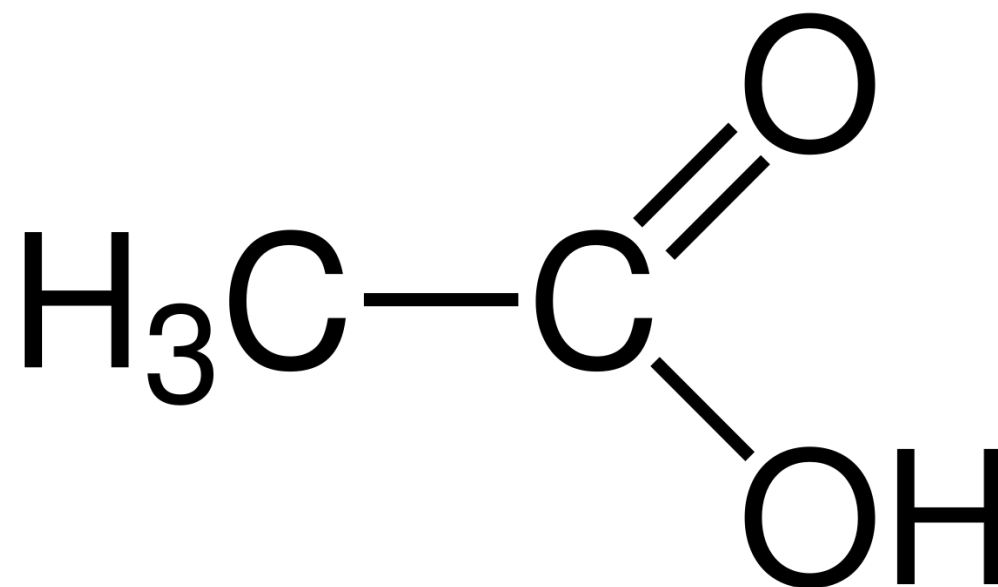
Courtesy of Dr. Alain TENENBAUM & Mauro TIZIANI

Note: TCA  
Is neither  
an AHA,  
nor a BHA





Acetic acid is  
neither an AHA  
nor a BHA



# Decimal Logarithms

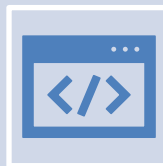
## pH & pKa

- $\log 1 = 0$
- $\log 10 = 1$
- $\log 100 = 2$
- $\log 1000 = 3$
- $\log 100000000 = 7$



$$\text{pH} = -\log (\text{H}^+) \\ = -\log (\text{H}_3\text{O}^+)$$

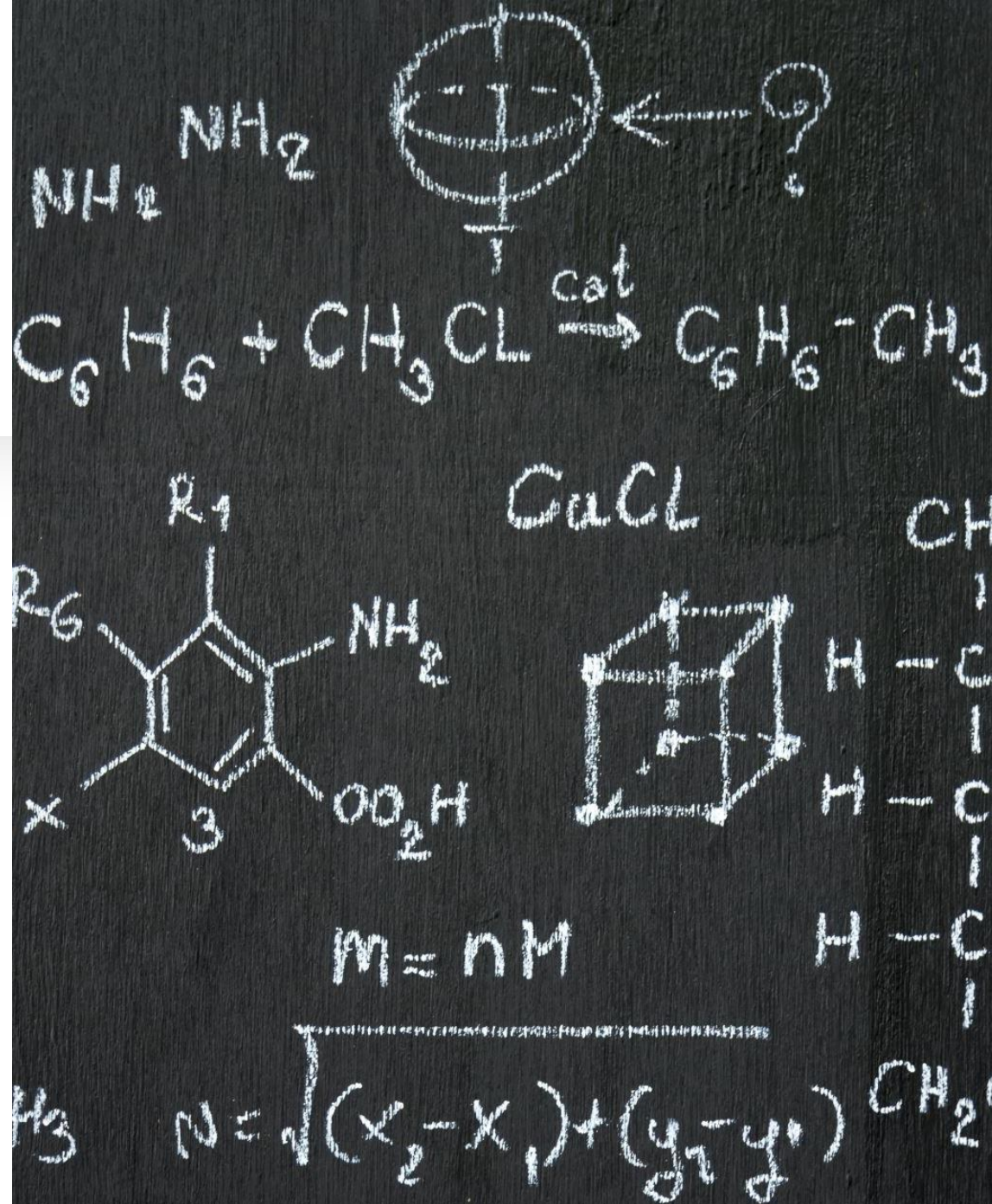
$$\text{pKa} = -\log K_a$$



$$\text{pH} = -\log (\text{H}_3\text{O}^+)$$

# UNIT OF CONCENTRATION OF AN ACID mol/l vs g/l

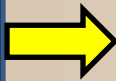
- EXAMPLE : HCl Chloric Acid
- Sum of atomic masses (Mendeleiev)
- $H = 1$   $Cl = 35$  ie  $HCl = 36$
- 1 mol HCl weighs 36g i.e.
- 0.1 mol weighs 3.6g
- $HCl$  0.1 mol/l = 3.6g crystal HCl for 1l  $H_2O$
- pH of 0.1 mol/l HCl =  $-\log(1/10)=1$   
extremely acidic
- $pH = -\log(H^{30+}) = -\log(H^+)$



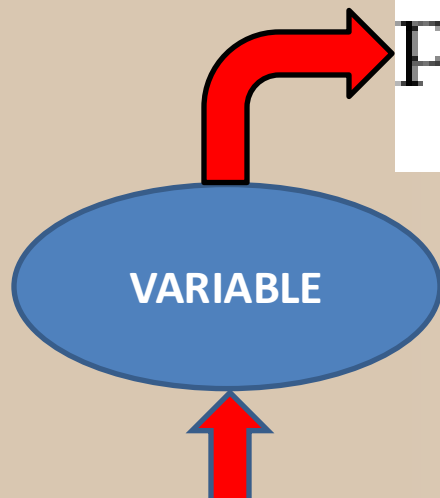




CONSTANT



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



modulate the pH value

CONSTANT

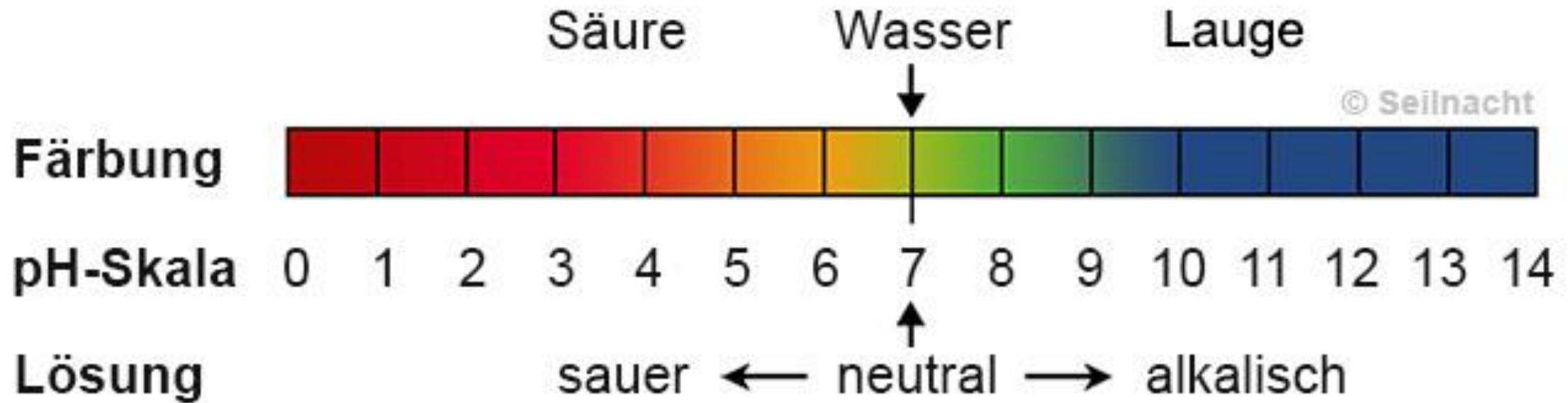


Choose the acid f(pKa)

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

Equation of  
Henderson  
Hasselbach

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**

☐ pKa = aggressiveness

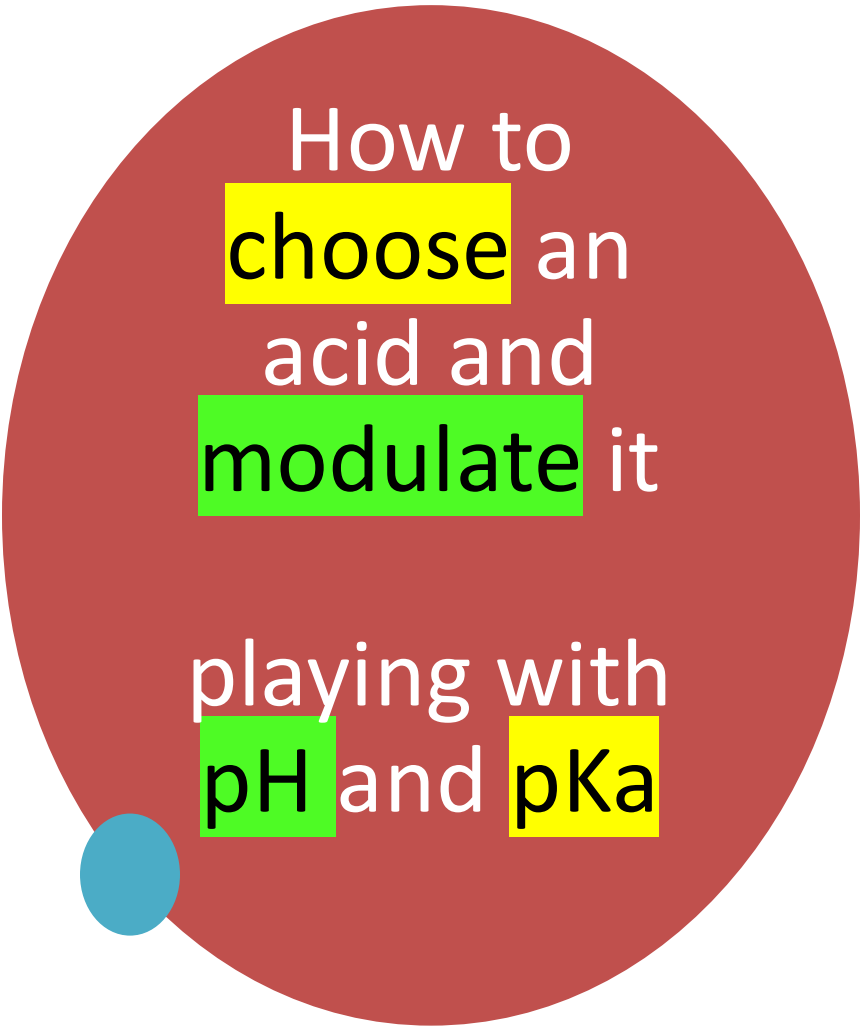
☐ pKa = Constant

**Modulate your acidity pH**

☐ pH = penetration

☐ pH = variable





How to  
**choose** an  
acid and  
**modulate** it

playing with  
**pH** and **pKa**

- **pKa** is a constant
- **Aggressiveness** (pKa lower = more aggressive)
- **Hazardousness** (monoprotic more dangerous than triprotic)
- **Medical indications** (it is better to know perfectly a small selection of products than to get involved in too many products that you do not master)

# 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 H<sub>2</sub>O

## In USA weight/volume

- TCA 10% w/v = 10g TCA in 100 g(ml) H<sub>2</sub>O

How to transform your TCA 10% into TCA 5%

We want to get 5g TCA for 95ml  
H<sub>2</sub>O (5%)

This is same as 10 g for 190 ml H<sub>2</sub>O  
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 in self made transitory „laboratory,, Safety and Protection are the most important instruments ,devices and test tubes for preparing in emergency a TCA outside a laboratory

## Raw Material 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 SO<sub>4</sub>.
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

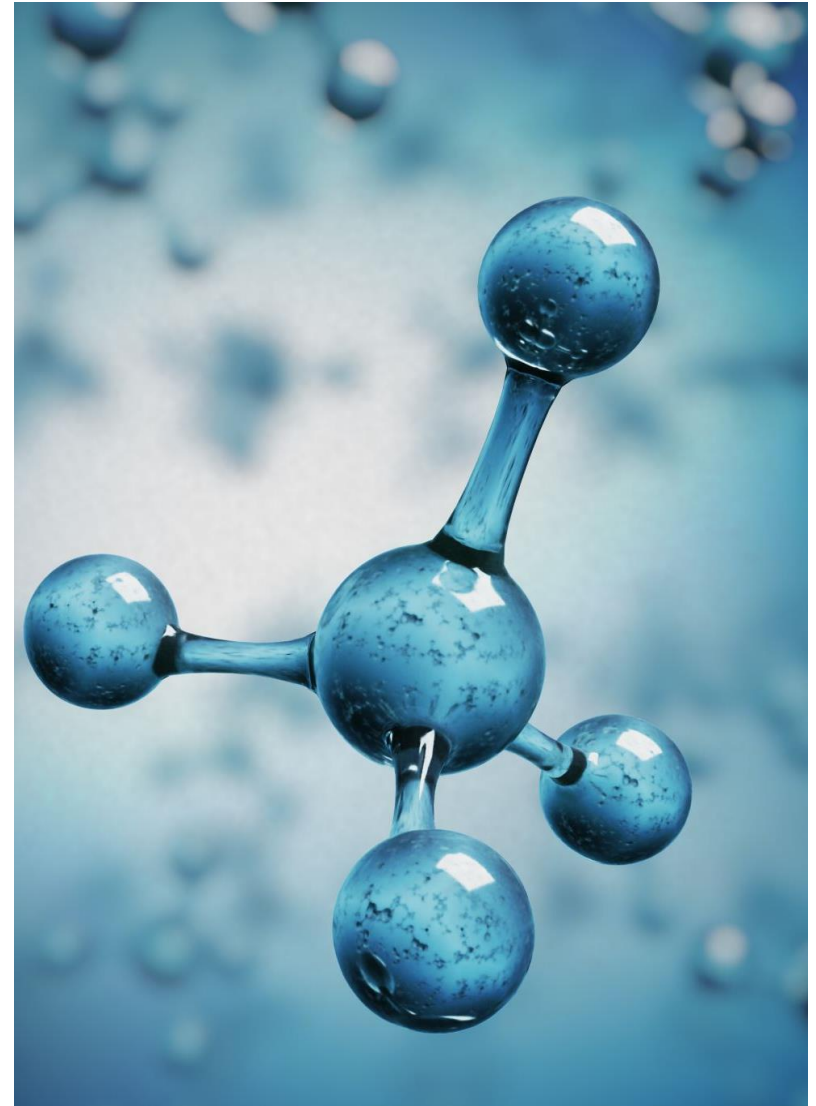


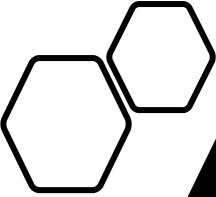
Airless



## 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





A decorative graphic consisting of three hexagons. One is a solid black hexagon, and two are white hexagons with black outlines, arranged in a cluster at the top center of the slide.

# Classification of A.Tenenbaum


A large hexagonal frame with a black outline. Inside the frame, there is a solid black hexagon on the left side. A thin black line extends from the bottom of this black hexagon, curving downwards and to the right, ending near the bottom-left corner of the large hexagonal frame.


Classification of  
L.Dewandre


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
CLASSIFICATION DR.ALAIN TENENBAUM		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

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<div>CHOOSE AN ACID f(pKa)</div>		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
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		Apples A (malic)			3.40	5.13		Metabolism	2 Diprotic
	Aggressiveness e.g. citric A>glycolic A pKa 3.15<3.83		Glycol A		3.83			Metabolism	1 monoprotic
	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
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		Glycol A			3.83			Metabolism	1 monoprotic
<div> <div>DANGER</div> <div>Low Nr of reactions</div> <div>e.g. glycolic A vs citric A</div> <div>Mono vs Triprotic</div> </div>		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
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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



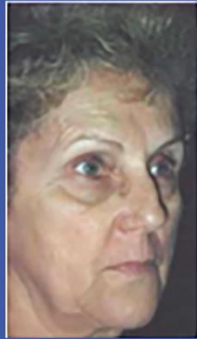
Protocol : Go on Peeling ( citric acid) on the skin even during desquamation  
Patient can go to the beach ( Cancun) each day

Courtesy of Dr. Alain Tenenbaum



Anti Aging Peelings on Phototype 3  
Treatment : Citric Acid each day x 15 days  
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**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

# TO MEMORIZE

Citric acid is not dangerous at the difference of glycolic acid, but citric acid is more aggressive and cheaper

# How to Avoid Social Downtime

- It is better to repeat the sessions several times with a harmless and sufficiently aggressive acid than a single session with a dangerous and aggressive acid.
- TCA vs Citric Acid
- It is better to repeat the sessions with a less concentrated acid than to use a hyperconcentrated acid in 1 or 2 sessions ( not valid for hyperchromies)
- See with TCA 4-3-2-2-...  
Instead of 1X4



## pH and pKa

### Buffer in dermatology- skin hydration


pH skin = 5.5


- ☐ pH skin (5.5) < pKa < 7      Moisturizing and less corrosive. (hydratant- **MOISTURIZER**)
- ☐  $0 < \text{pKa} < \text{pH skin}(5.5)$       **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.



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	KERATOREGULATORS	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
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MOISTURIZERS									
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# Metabolic Peels

## Classification of L.Dewandre

### Revised & Updated by A.Tenenbaum

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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,

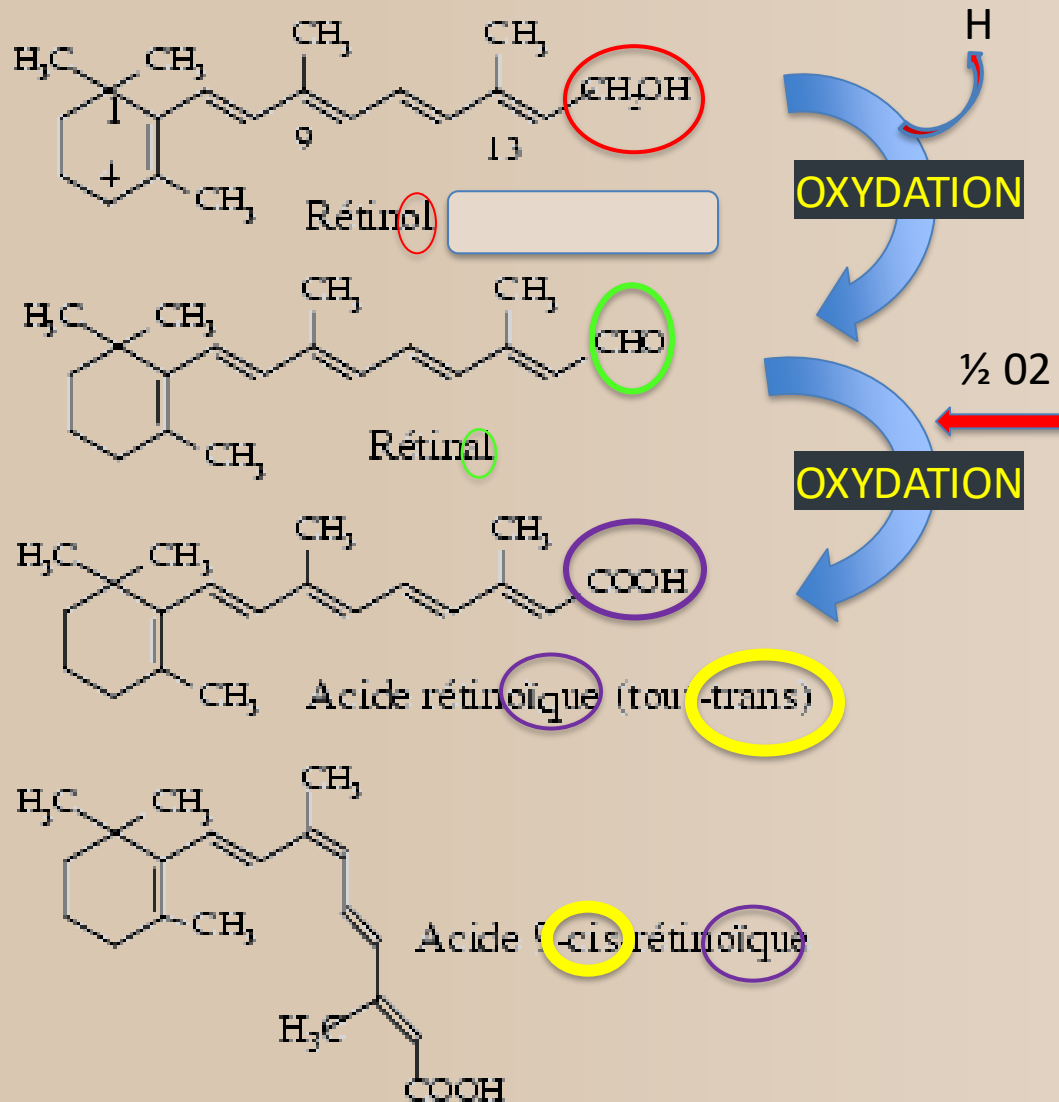


Metabolic Peels target the living layer of the skin( Stratum Germinativum or Basal) and increase cell renewal.



# Retinol, retinaldehyde and retinoic acid

## Oxidation and effect



SUFFIXE - OL for Alcohol

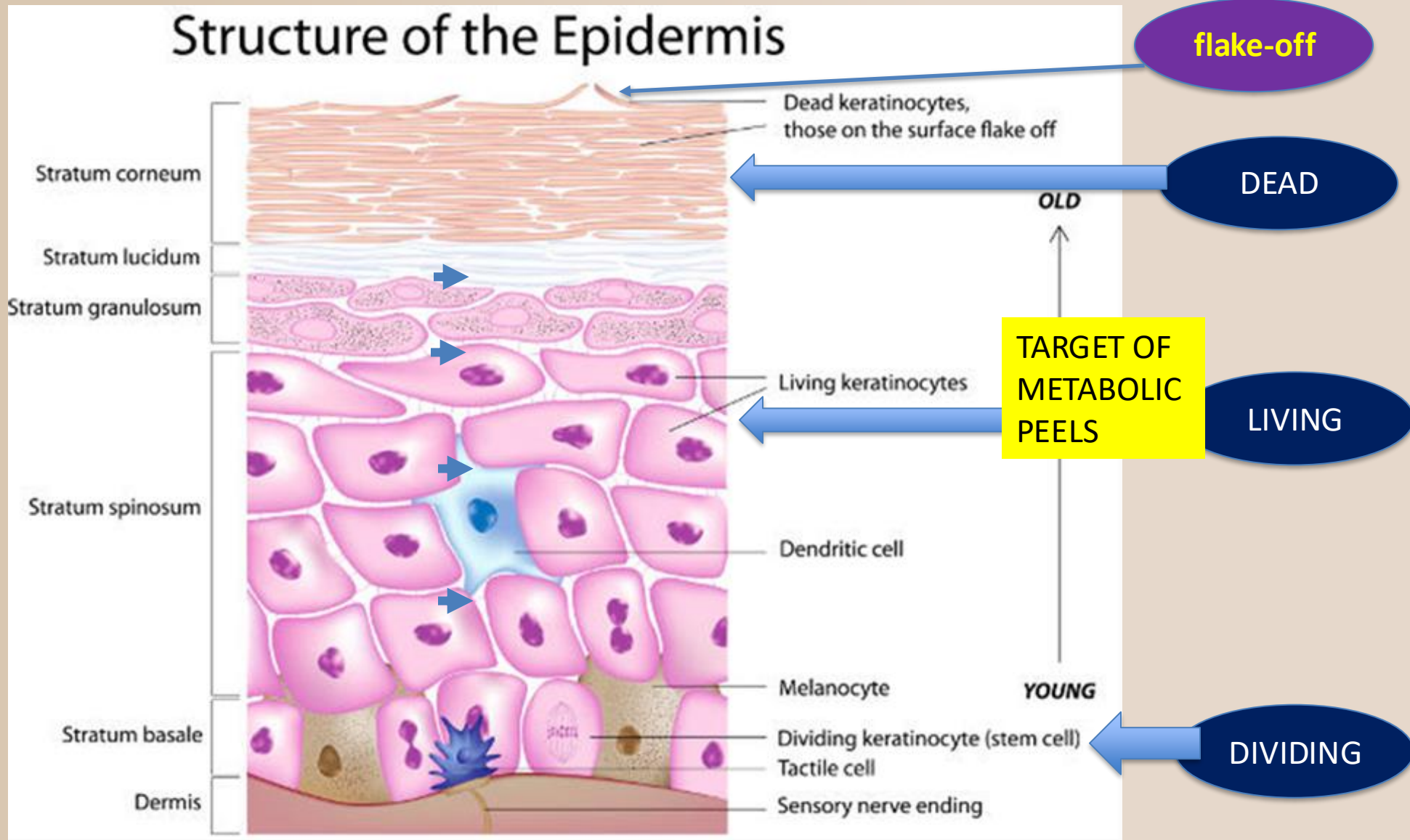
SUFFIXE - AL for ALDEHYDE


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

# Main Target of Metabolic Peels



Acid category	Acid subcategory	pKa>3 rising	pKa=3	pKa<3	pKa1	pKa2	pKa3	L. Dewandre	Number of reactions
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CLASSIFICATION DR.L.DEWANDRE		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
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# Chiral Correction

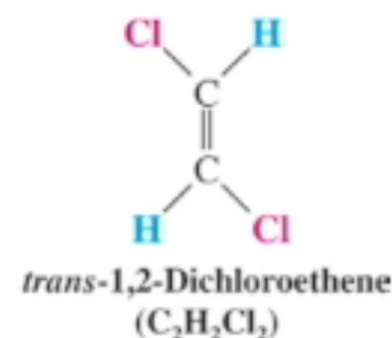
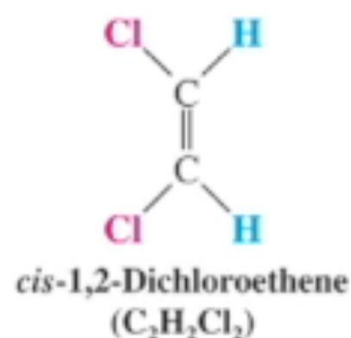
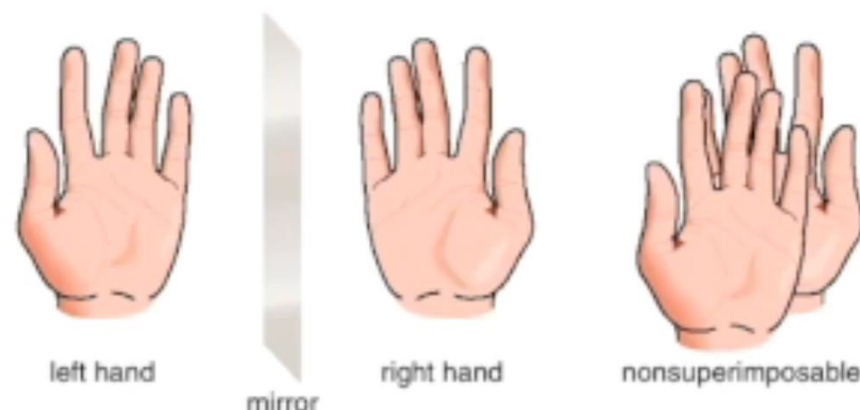
## What is Chiral Correction?

**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.





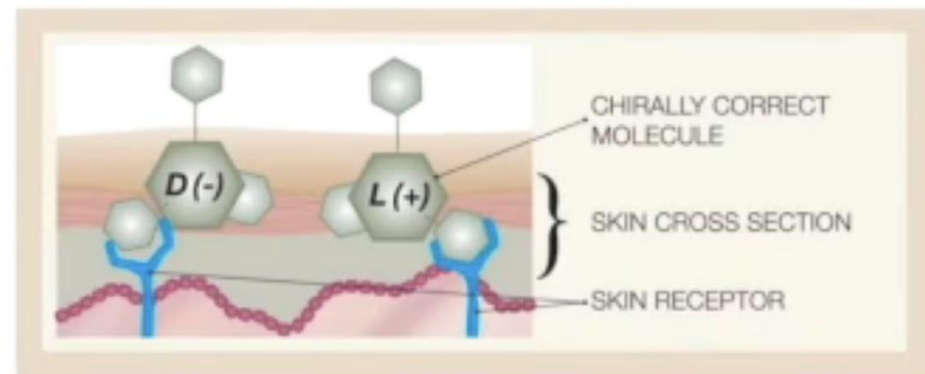
# Chiral Correction 2

## 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



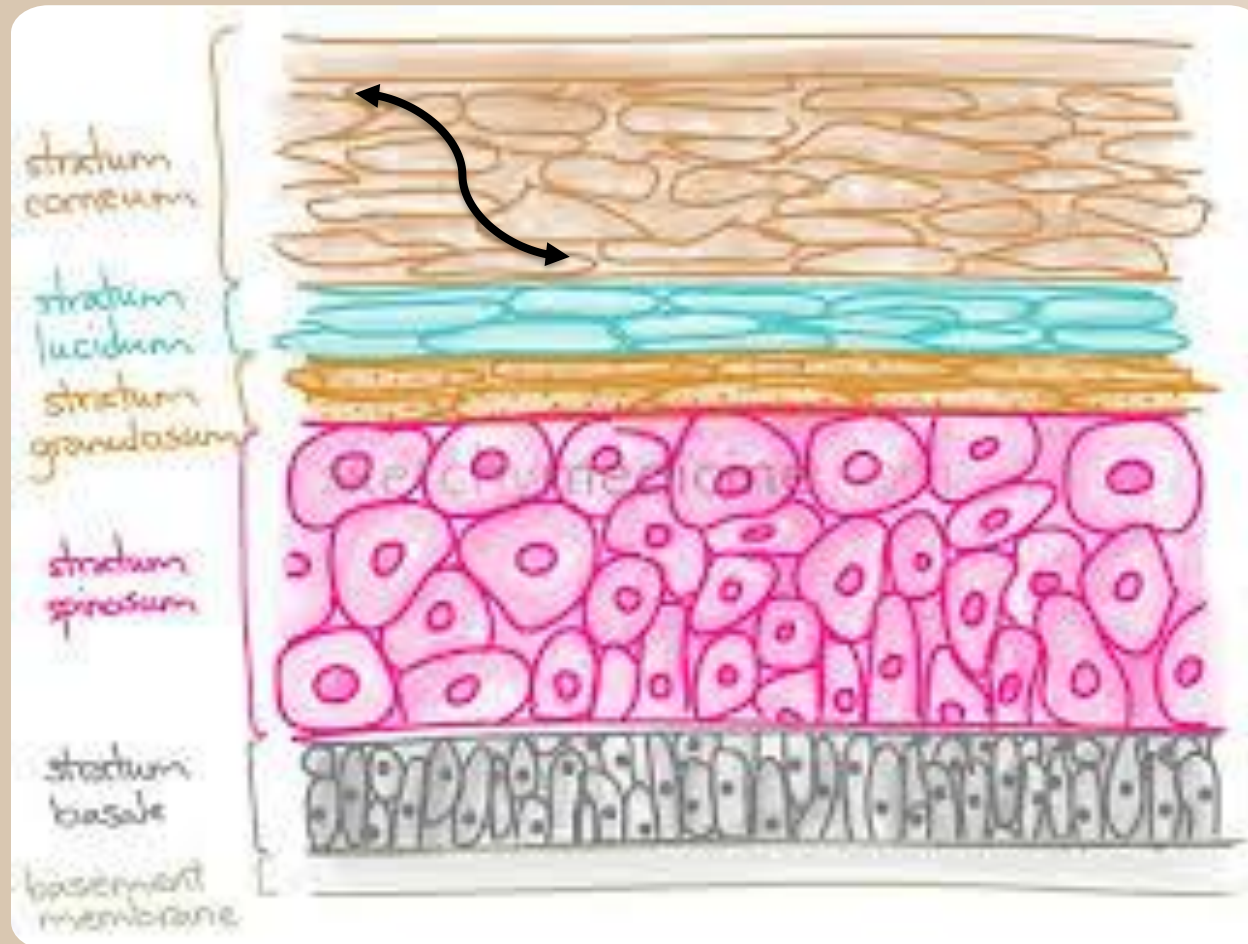
CosMedix ingredients contain only the correct-fitting molecules for the skin's receptors

- 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

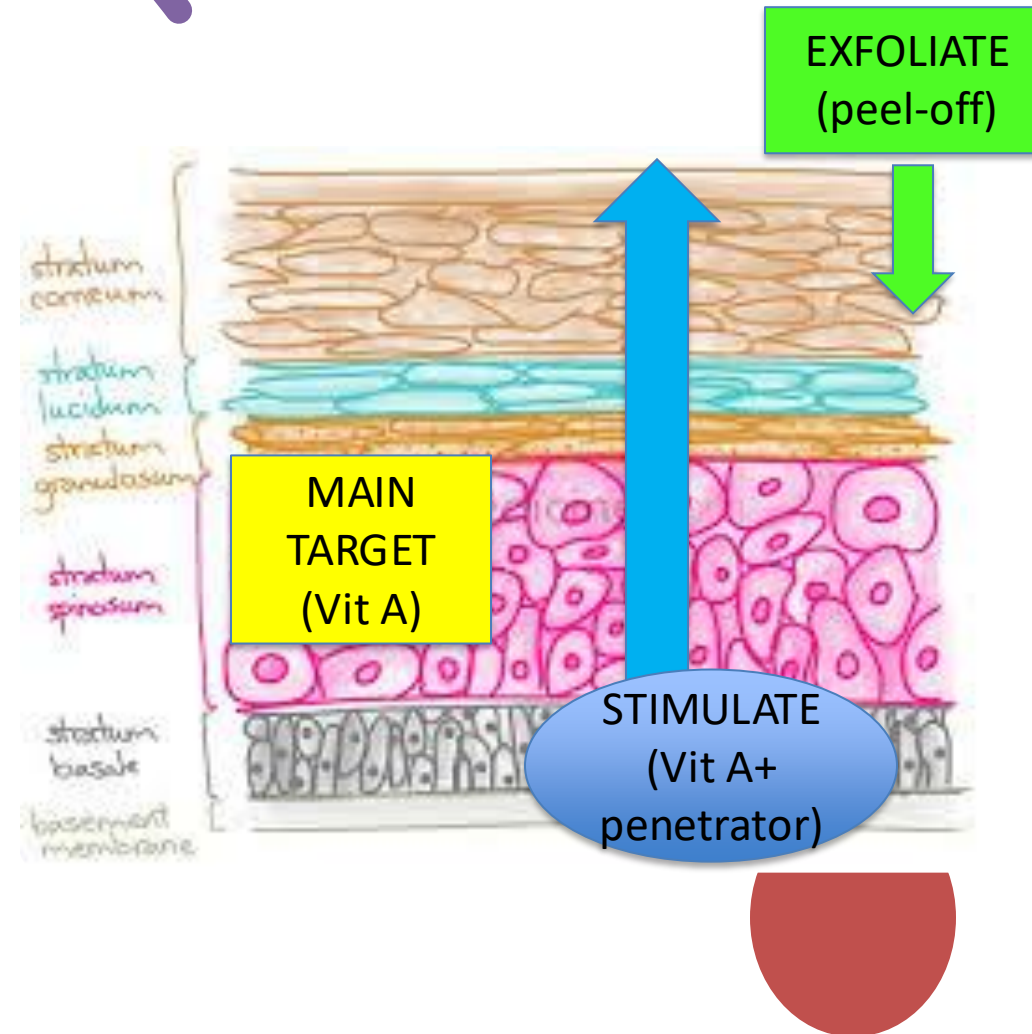
# TRADITIONAL CHEMICAL PEELS -> FORCING REPAIR



- Exfoliate the skin from the stratum corneum downwards

# Metabolic Peels vs Chemical Peels

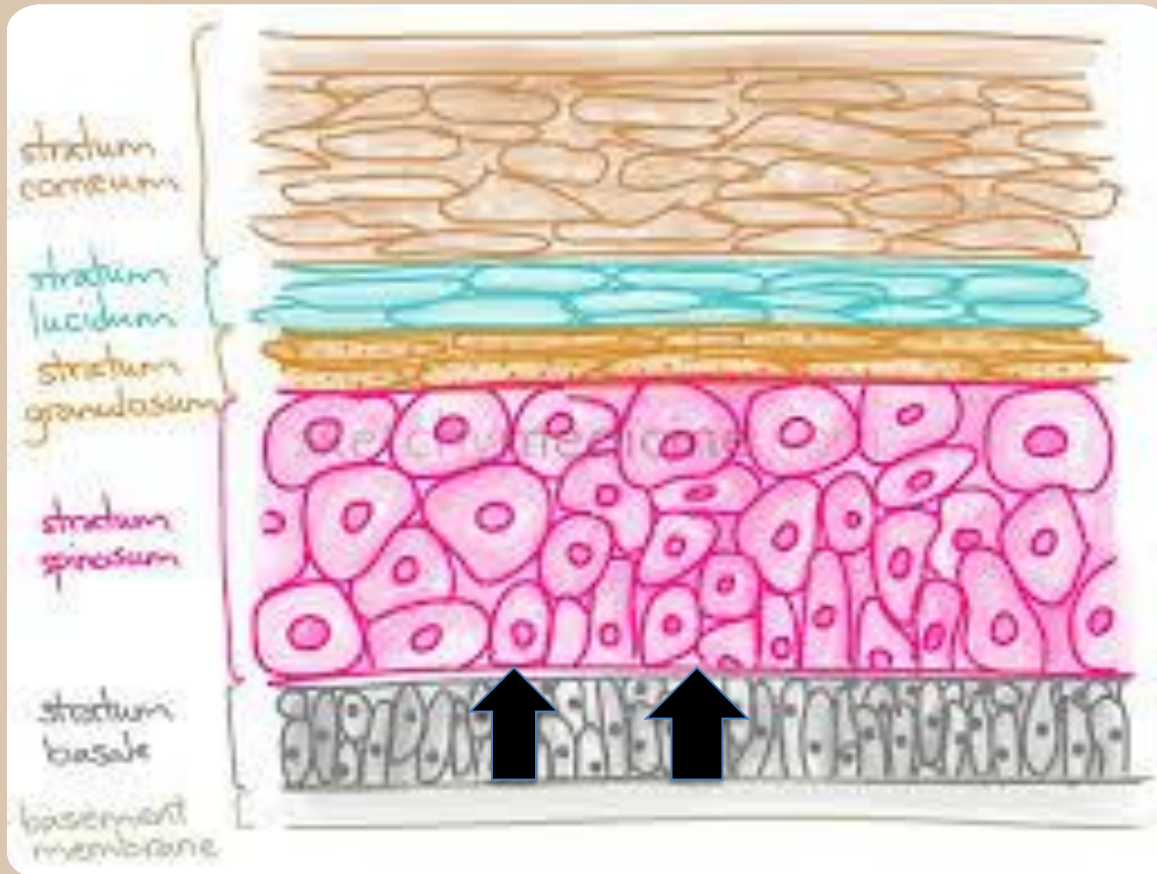
- Metabolic Peels contain Vit A that targets the living layer of the skin and increases cell renewal. ( Ex Peeling de Luxe Plus )
- Traditional Chemical Peels use Acids to exfoliate the skin from the stratum corneum downwards ( Ex 30 min peel-off )
- Metabolic Peels use encapsulated Retinoic Acid to 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



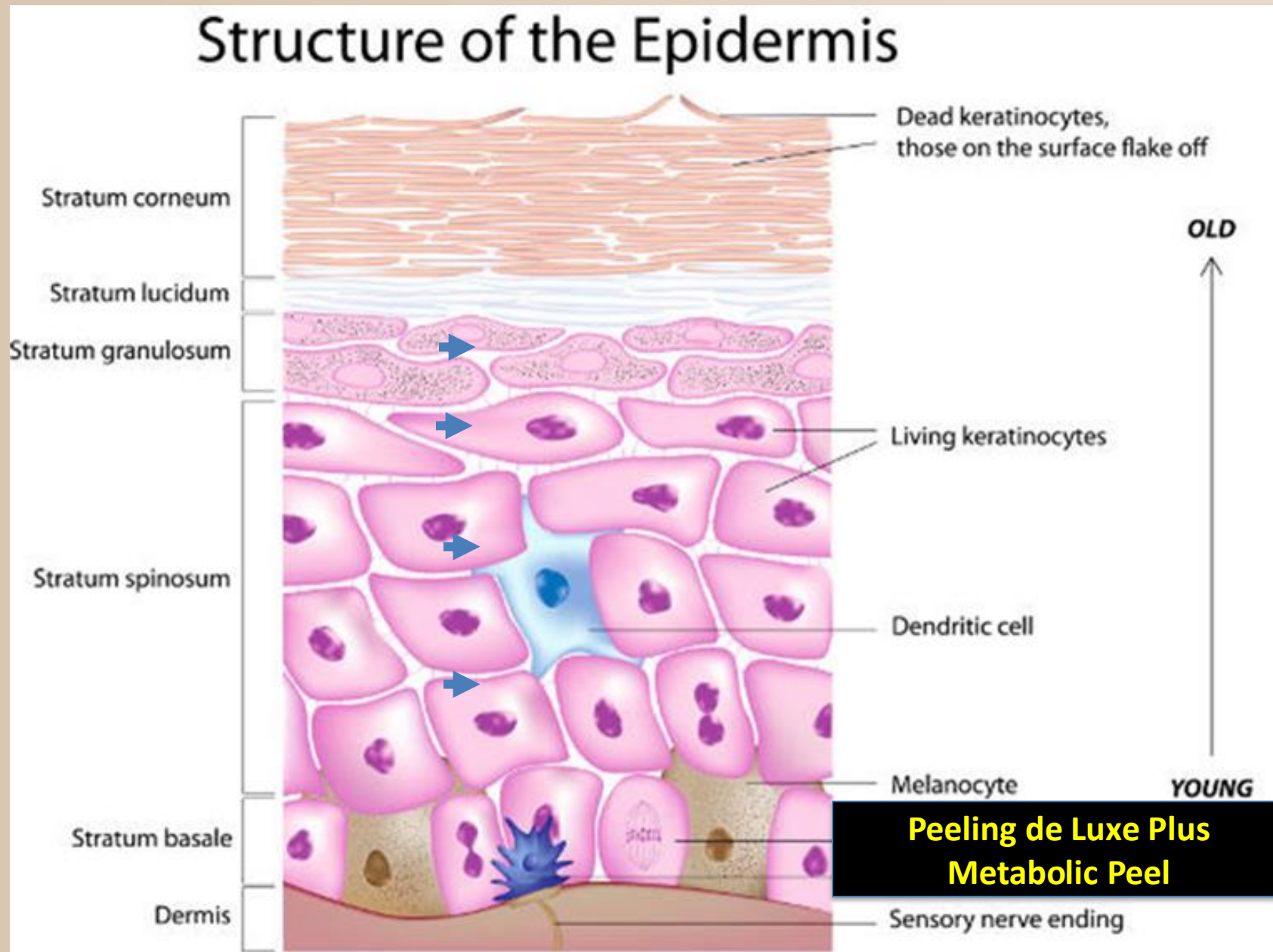
# METABOLIC PEELS -> SKIN NATURAL RENEWAL SUPPORTING SKIN FUNCTION



- Stimulate renewal from the stratum basal or germinativum upwards

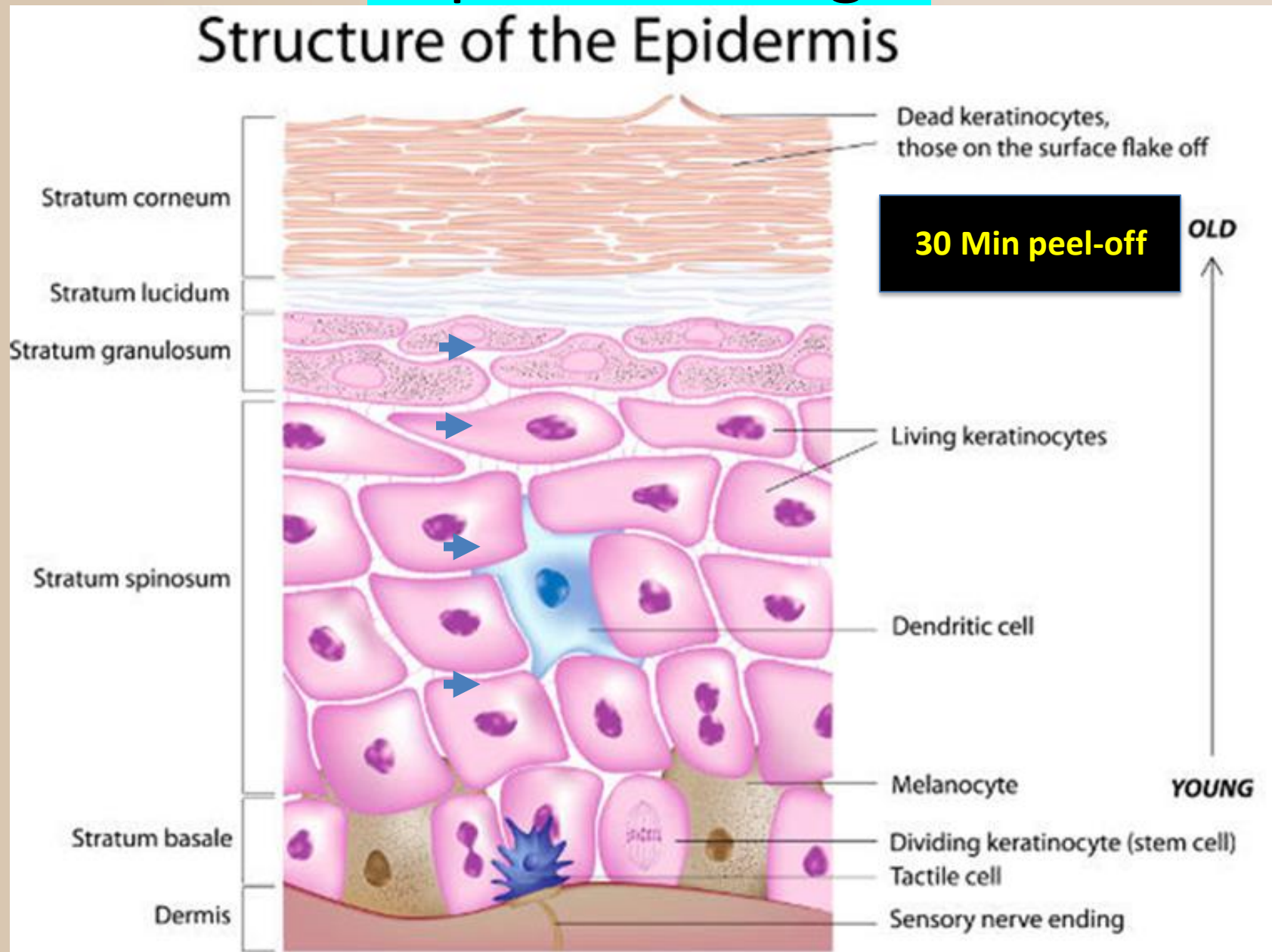
# Different Targets of Epidermis

Metabolic Peel targets stratum basal and increases cell renewal



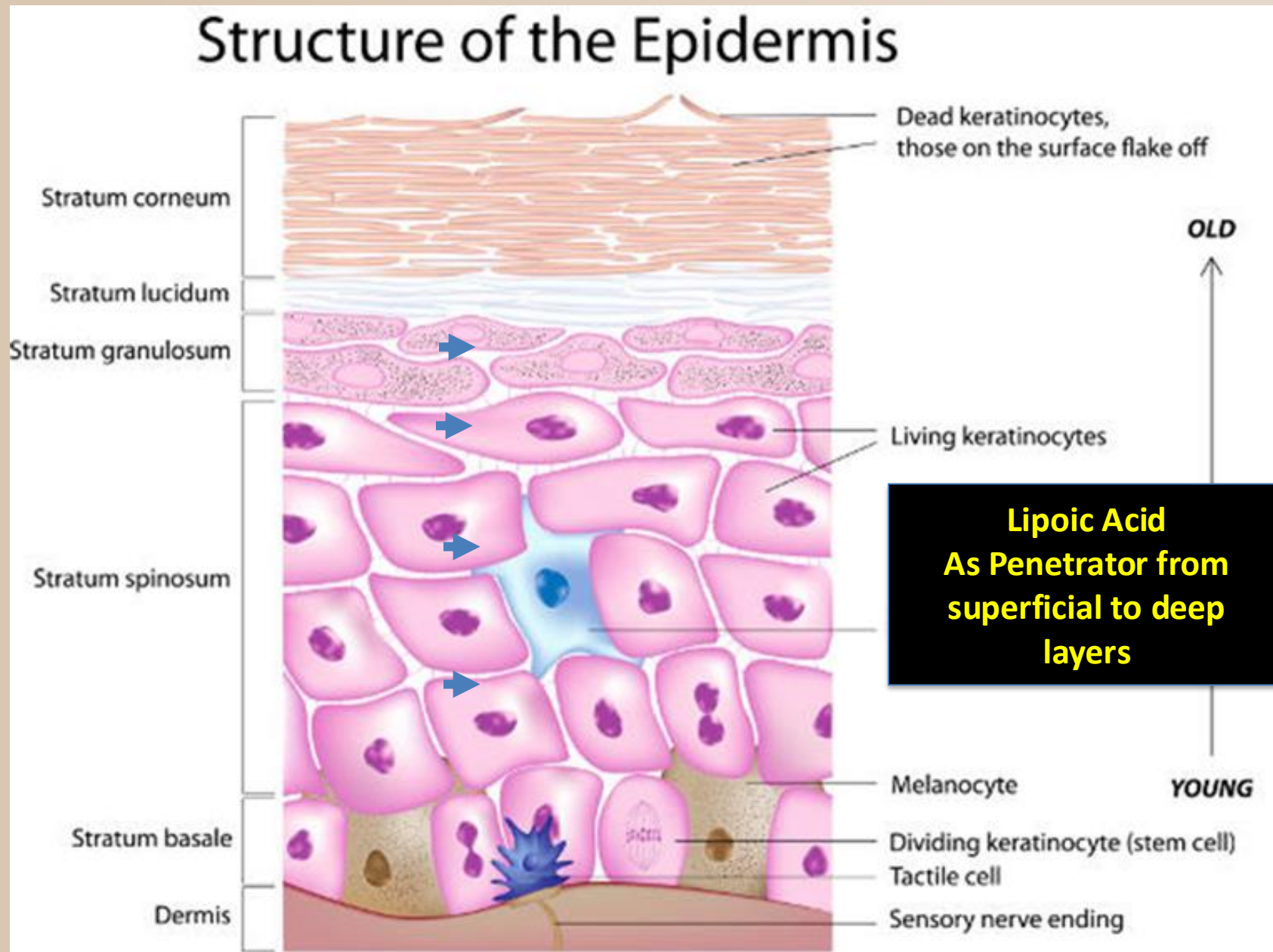
# Different Targets of Epidermis

## Superficial Target





# Different Targets of Epidermis





# Treatment Protocol of Mauro Tiziani

3 Targets = 3 Products  
Stimulate, Exfoliate, Penetrate SEP

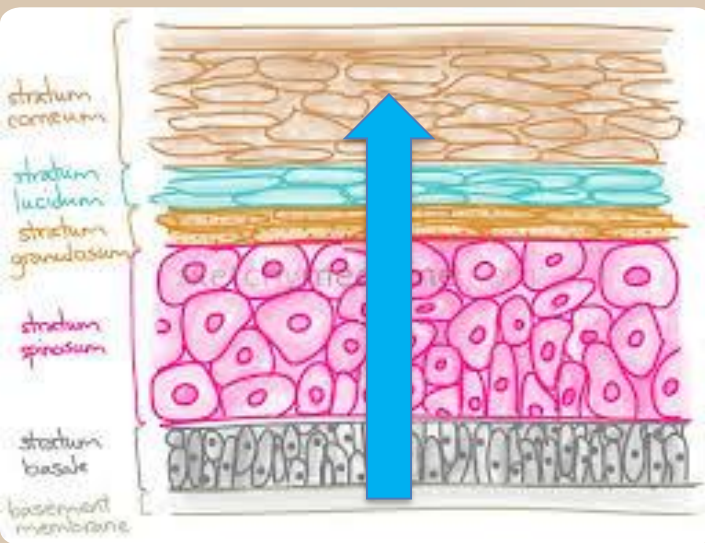
## THE METABOLIC PEELS SET

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

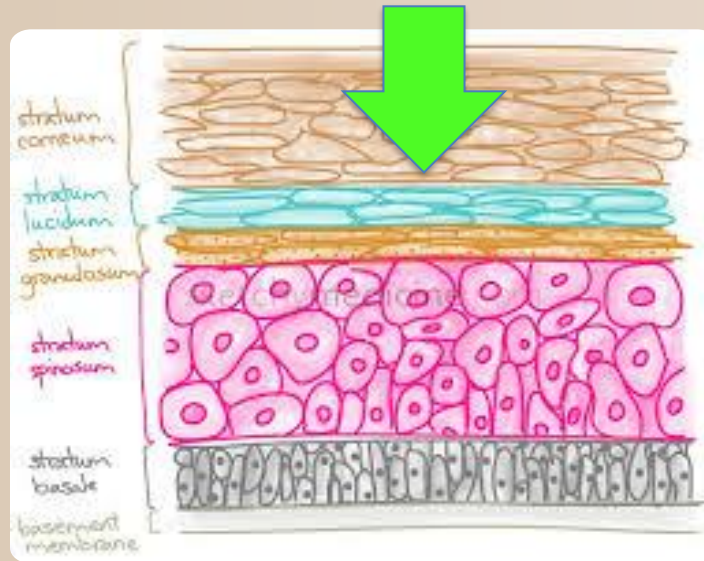
STIMULATE

EXFOLIATE

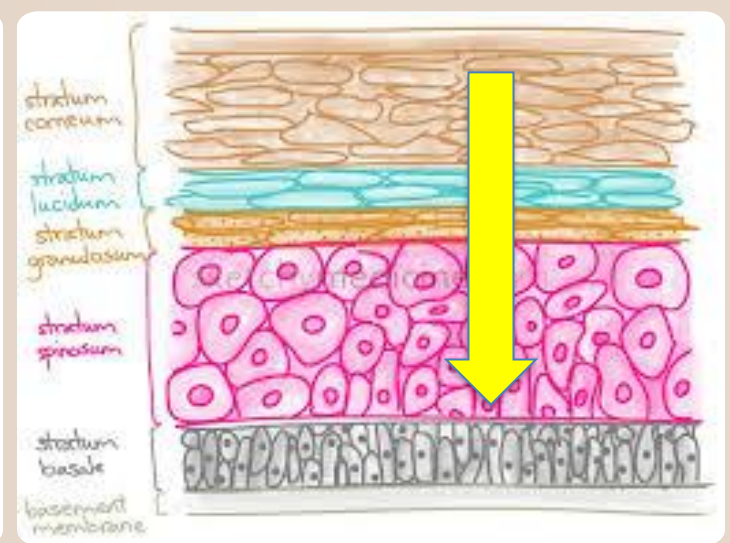
PENETRATE



PEELING DE LUXE PLUS



30 MIN peel-off



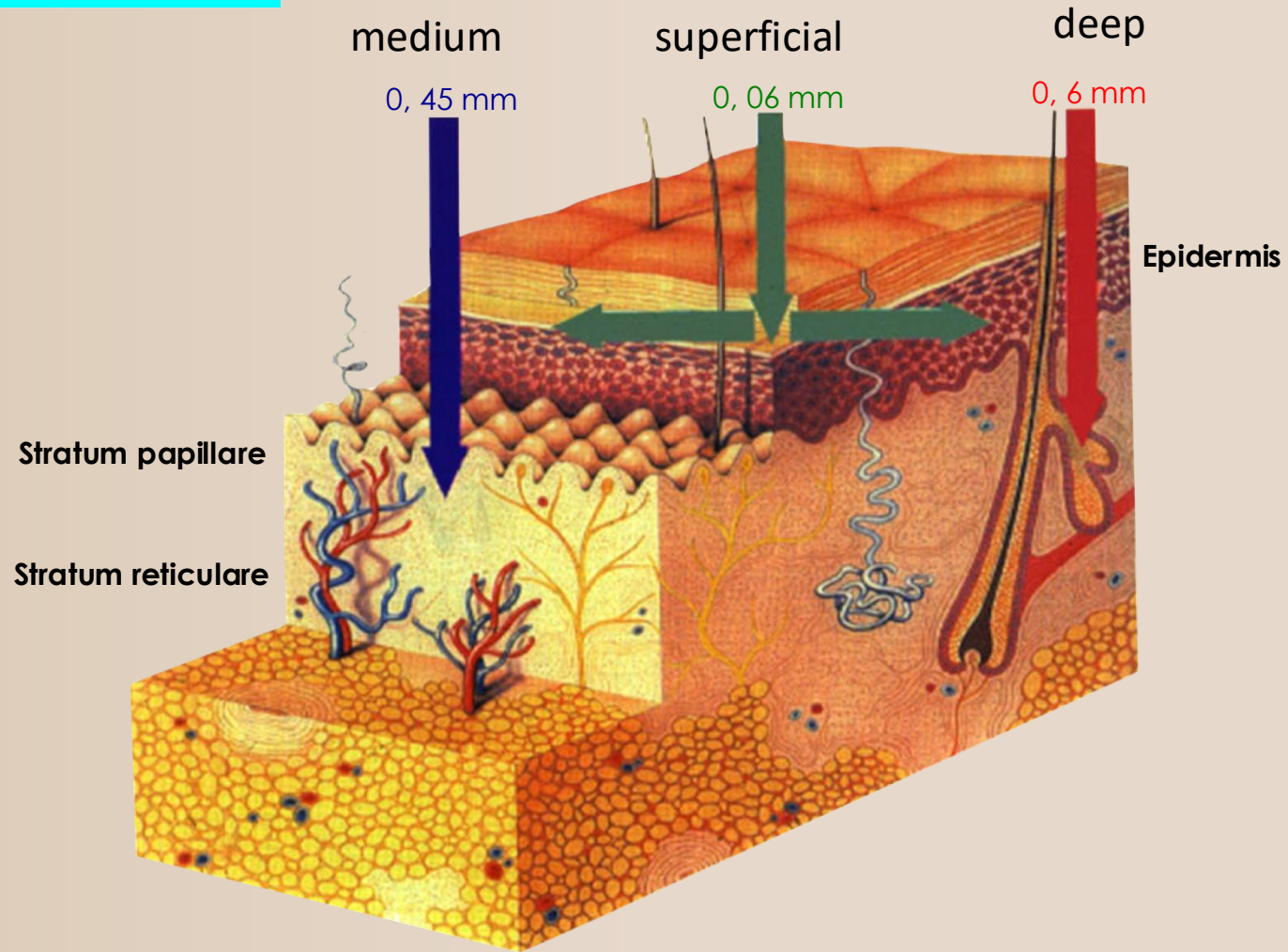
LIPOIC ACID



# 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



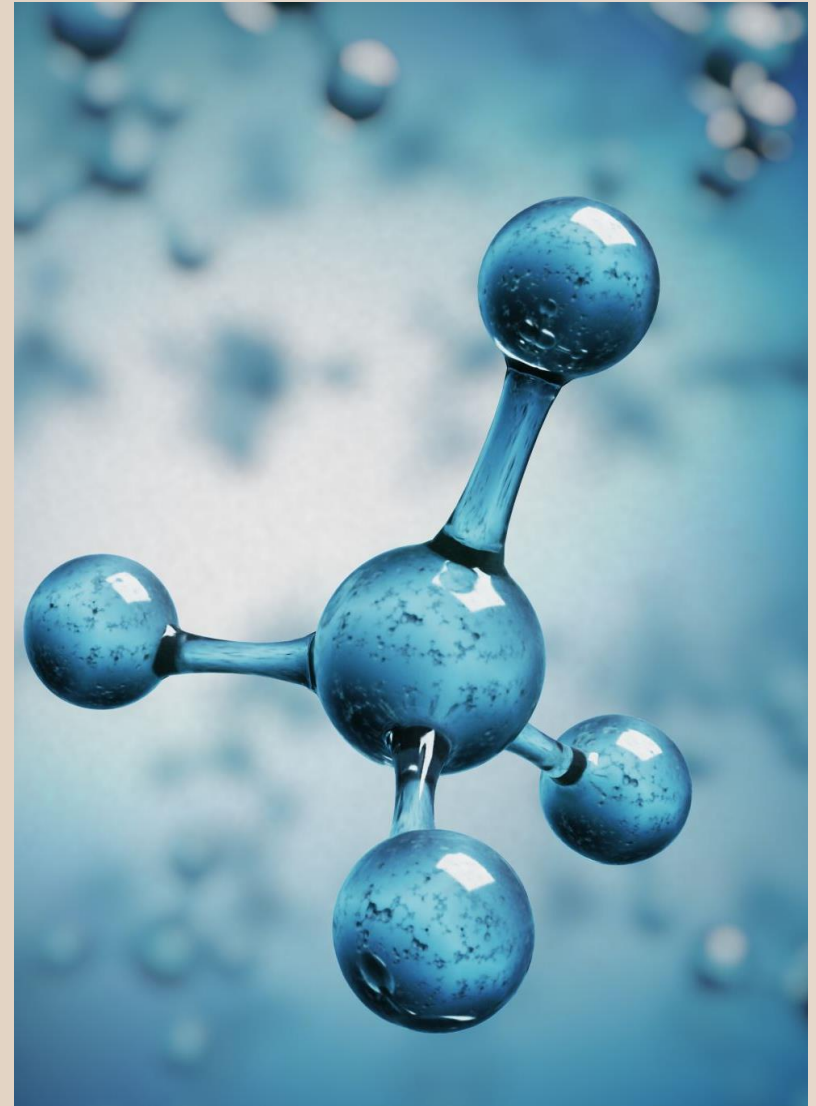
APPLICATION  
PRESSURE





## 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

LIPOLIC ACID



# Practical Trends of A.Tenenbaum



## DO'S

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



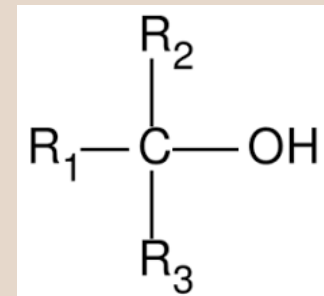
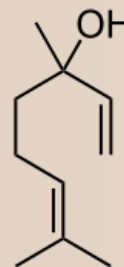


# the 3 types of primary, secondary and tertiary alcohol

- **primary alcohol**  $R-CH_2OH$  ex Ethanol  $CH_3-CH_2OH$
- **Secondary** Alcohol  $R_1-CHOH-R_2$   
zB Isopropanol  $CH_3-CHOH-CH_3$

Ethanol and isopropanol are disinfectants

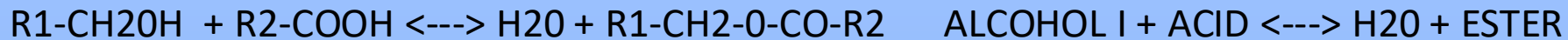
- **Tertiary** Alcohol ex Linalol oder 3,7-Dimethyl-1,6-octadien-3-ol is a tertiary alcohol with a floral and fresh smell.



# Esterification reactions

## The esters

- Alcohol I or II + acid  $\rightleftharpoons$  ester + H<sub>2</sub>O
- Alcohol III : No esterification reaction with acids



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**

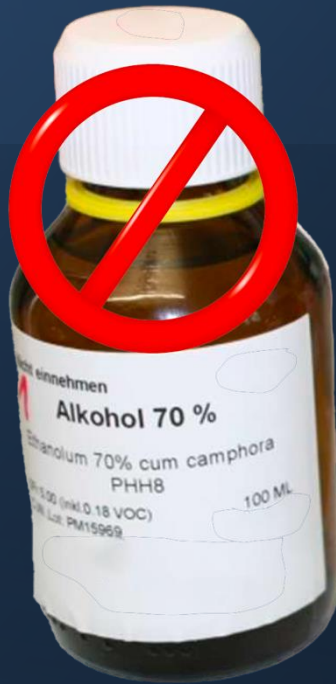
- primary alcohol
- High molecular weight
- $\text{CH}_3-(\text{CH}_2)_{14}-\text{CH}_2\text{OH}$

- **Butylene Glycol used as Solvent**

- primary alcohol & secondary alcohol
- $\text{CH}_2\text{OH}-\text{CHOH}-\text{CH}_3$



Ethanol is unfortunately mostly used as  
Skin Desinfectant –Skin Tonics- Skin Cleansers  
and too as „ denatured alcohol !,,



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



# ESTERIFICATION ON THE NECK AFTER THE PRESENCE OF PERFUME ON THE COLLAR

Esterification Reaction on the Neck  
Perfume (Alcohol) + Acid



Courtesy of Dr. Alain Tenenbaum



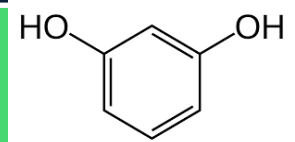
# ONE MIXTURE COMBINATION TO KNOW JESSNER PEEL

OLD FASHION 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

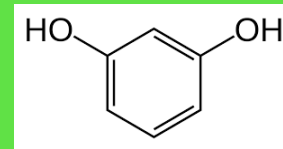
NOT SEQUENTIAL COMBINATION

# 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
 <div> <div>CLASSIFICATION</div> <div>DR.L.DEWANDRE</div> <div>modified by</div> <div>A.TENENBAUM</div> </div>		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

# Combination Chemical Peels vs Single Chemical Peels in mild moderate Acne

## Single Chemical Peels

TCA 30% W/V
Salicylic 30% W/V

Side Effects

## Combination Chemical Peels

Jessner followed by TCA 20% W/V- <b>SEQUENTIAL</b>
Salicylic 20% W/V + Mandelic 10% W/V <b>MIXTURE</b>

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

# Our preferred happy acne treatment



## Neutralization of an acid-pH regulation and exothermic reaction (release of thermal energy)



Hydrochloric acid + caustic soda  $\rightarrow$  table salt + water + Q

Acid + Base  $\rightarrow$  Salt + Water + Q

$(\text{pH} < 7) + (\text{pH} > 7) \rightarrow \text{pH} = 7$



# Products which are pH Regulators of Peels acids

$\text{NaHCO}_3$  (sodium bicarbonate salt) instead of  $\text{NaOH}$  (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  $\text{Acid} + \text{H}_2\text{O} = \text{Q}$   
(combustion)

# pH regulation and neutralizer



$\text{NaHCO}_3$   
Not frosting stopper  
Use for acid with  $\text{pKa} > 3$



**FROSTING STOPPER**  
for your emergency equipment  
Use for acid with  $\text{pKa} < 3$





## Buffer or tampon

$$pK_a = pH$$

- 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 :  $\text{NaHCO}_3$  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  $pK_a < 3$
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..)





# Unfortunately, 98% of cosmetic products contain highly comedogenic active ingredients

- Lanolin ++++
- Myristate-myristic acid-Blackberry acid
- Butyl stearate
- Isopropyl palmitate ++++++
- LAURETH +++

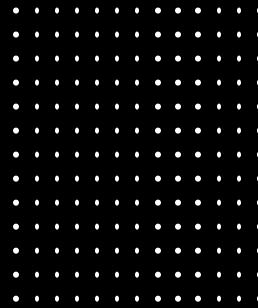


**It is important to check the list of ingredients before buying a cosmetic product**

# 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  $pK_a$ , which continue the peeling effect
8. Sea vegetable collagen
9. Avoid parabens



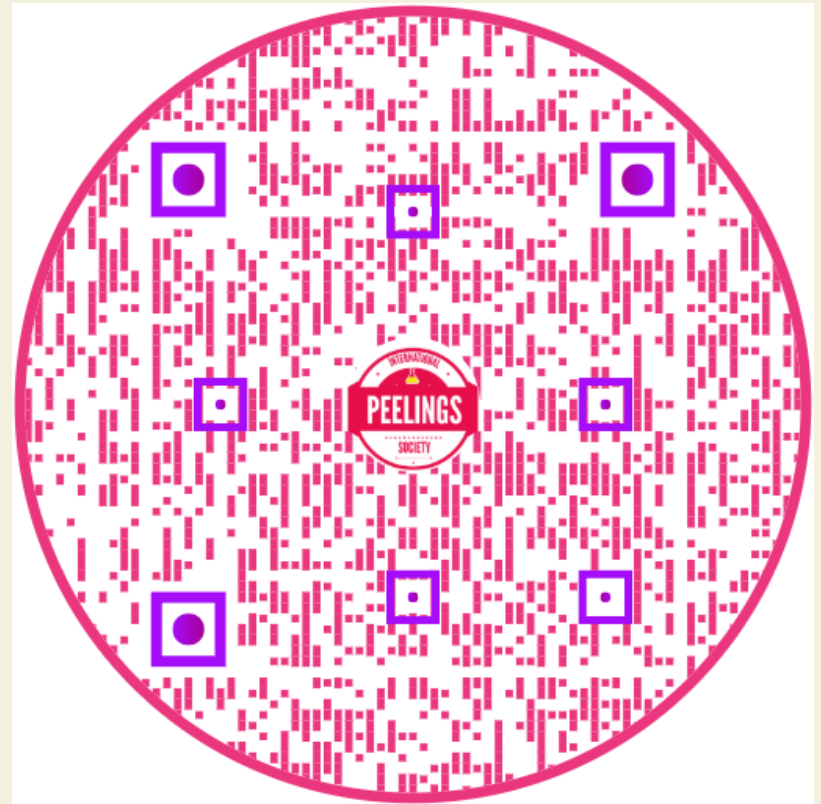


## Medications that cause acne

- ☐ 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

# 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



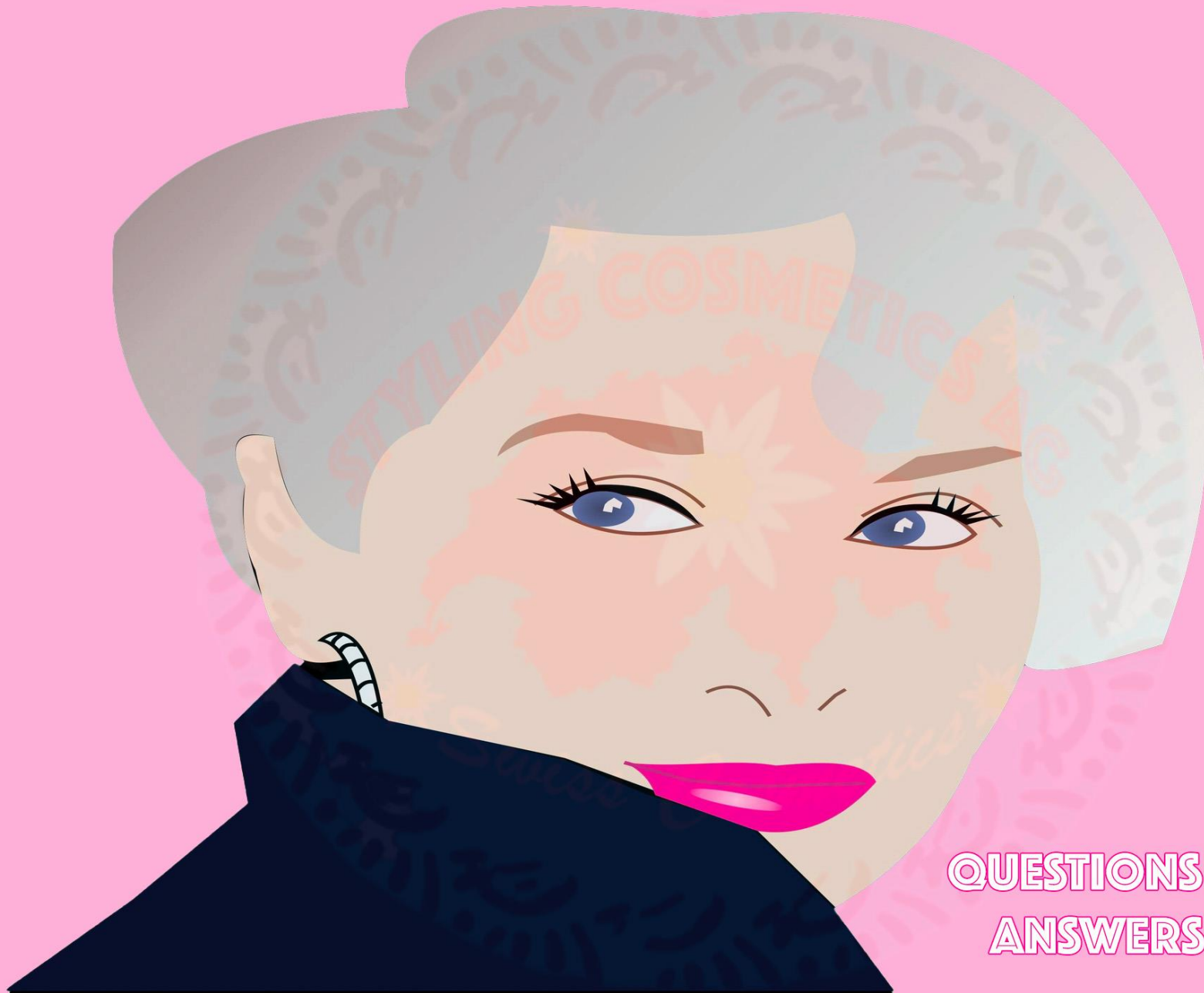
Courtesy of Dr. Alain Tenenbaum



# 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
<div><div>- Keratoregulator ++</div><div>— Skin lightener</div><div>- Bacteriostatics</div><div>- Stimulates cell differentiation</div><div>— Moisturizing</div></div>	<div><div>- Skin lightener</div><div>- Bacteriostatics</div><div>- Anti-oxidant</div><div>- Keratoregulator +</div><div>- Moisturizer</div></div>	<div><div>- Keratoregulator +++</div><div>- Bacteriostatics</div><div>- Moisturizing</div></div>	<div><div>-Tyrosinase-Inhibitor</div><div>-Depigmentation</div></div>	<div><div>— Melanin Formation Blocker</div><div>- Anti-oxidant ??</div></div>	<div><div>- Good results (epidermal enzymes)</div><div>— Dispersion of melanin of the basal layer</div><div>- Keratoregulator +++</div><div>— Moisturizing</div></div>

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, seoregulating, 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.

Complications  
of Brand Names Peels  
with Big Marketing &  
Poor Chemistry  
Knowledge

(Spain, Argentina, Korea,  
China)

**Complication of  
Lactic Acid**

**( Mostly distributed to Cosmeticians)**





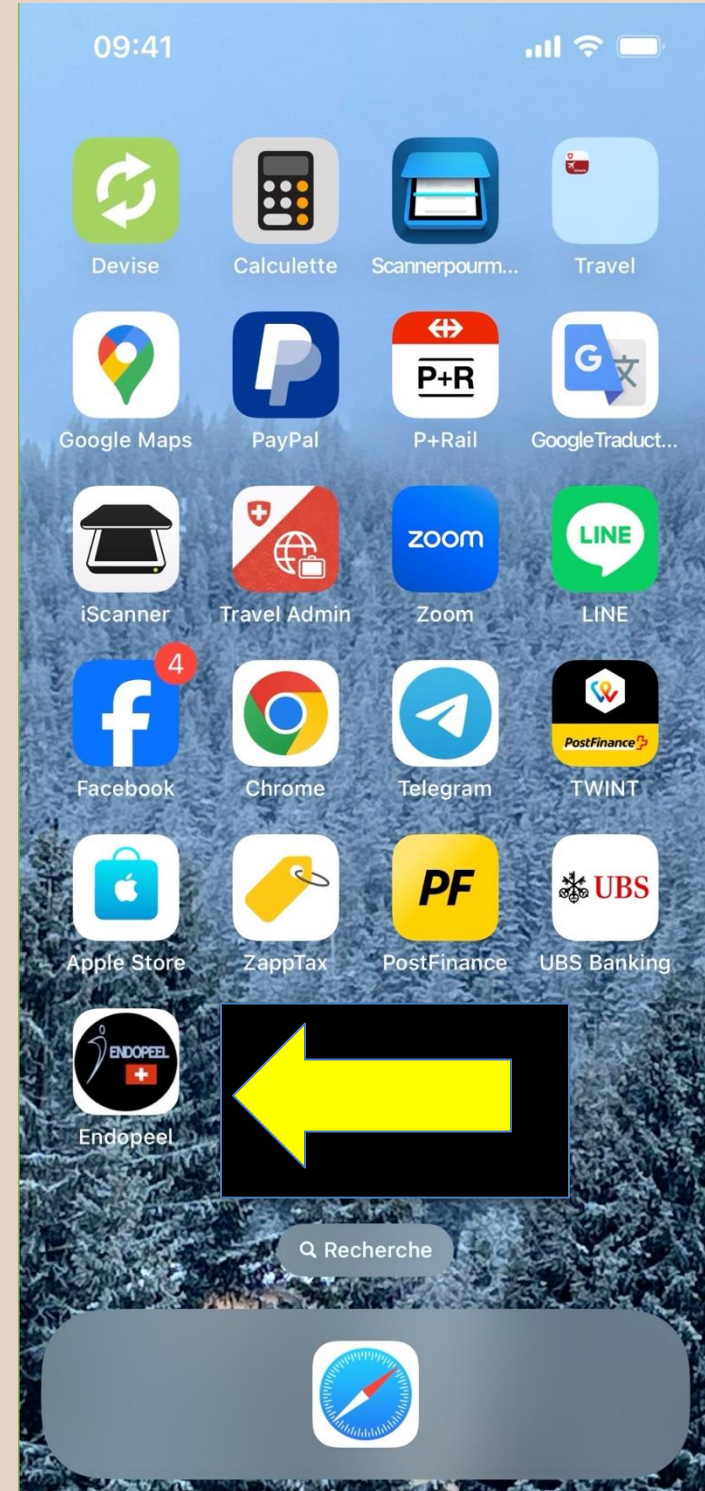
	Peelings	Lasers
Goals	Peels involve applying a chemical solution to the skin, which exfoliates the <u>outer layers</u> , promoting cell turnover and revealing fresher, smoother skin.	Laser treatments use focused light to target <u>specific layers</u> of the skin, stimulating collagen production and improving skin texture.
Advantages	<ul style="list-style-type: none"> <li>• Effective for texture issues like fine lines, acne scars, and pigmentation.</li> <li>• No need for expensive equipment.</li> <li>• Minimal risk when used correctly.</li> <li>• Generally less expensive than lasers.</li> </ul>	<ul style="list-style-type: none"> <li>• Targeted treatment for specific concerns like pigmentation, vascular issues, and deeper wrinkles.</li> <li>• Stimulates collagen production for long-term skin improvements.</li> <li>• Can offer more precise results with less risk of post-inflammatory pigmentation (depending on the type of laser).</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>• Potential for side effects like irritation, redness, or pigmentation changes (especially with deep peels).</li> <li>• Downtime can vary depending on the depth of the peel.</li> </ul>	<ul style="list-style-type: none"> <li>• More expensive than peels.</li> <li>• Can involve more downtime, especially with more aggressive lasers.</li> <li>• Potential for side effects like hyperpigmentation or scarring (especially if not done correctly).</li> </ul>

	Peelings. ( M.D)	Hydrafacial ( Cosmetician)
How it works	Chemical peels involve applying a chemical solution to the skin, which causes the top layers to <b>exfoliate and peel off</b> .	Hydrafacial is a non-invasive treatment that combines <b>cleansing</b> , exfoliation, extraction, hydration, and antioxidant protection. It uses a specialized device that vacuums out impurities and infuses the skin with hydrating serums.
Benefits	<ul style="list-style-type: none"> <li>• <b>Improves skin texture</b> and tone.</li> <li>• <b>Reduces fine lines and wrinkles.</b></li> <li>• <b>Treats acne</b> by unclogging pores and reducing oil production.</li> <li>• <b>Brightens pigmentation</b> (e.g., melasma, age spots).</li> <li>• <b>Results are typically more dramatic</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Instant hydration</b> and glow.</li> <li>• <b>Gentle exfoliation</b></li> <li>• <b>Improves skin texture and appearance.</b></li> <li>• <b>No downtime</b></li> <li>• <b>Targets a wide range of concerns</b>, such as acne, fine lines, hyperpigmentation, and dullness.</li> <li>• <b>No risk of peeling</b> as it's more a "<b>deep cleansing</b>" than a <b>full exfoliation</b>.</li> </ul>
Intensity	<ul style="list-style-type: none"> <li>• more intense</li> <li>• longer-lasting results</li> </ul>	<ul style="list-style-type: none"> <li>• Gentler</li> </ul>
Downtime	<ul style="list-style-type: none"> <li>• Peeling</li> <li>• redness post-treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• No downtime</li> </ul>
Customization	<ul style="list-style-type: none"> <li>• higher degree of customization based on skin type and concerns</li> </ul>	<ul style="list-style-type: none"> <li>• Customization , especially in terms of serums used, but are more focused on hydration and exfoliation ( gommage)</li> </ul>
Maintenance		<ul style="list-style-type: none"> <li>• <b>hydration, quick glow</b>, maintain a perfect hydrafacial</li> </ul>

	Peelings	Microneedling
Mechanisms of Action	<ul style="list-style-type: none"> <li>• <u>Chemical</u> Exfoliation</li> <li>• Skin Regeneration</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Physical</u> Stimulation to get Collagen Production through</li> <li>• Micro Injuries</li> </ul>
Treatment Depth	<ul style="list-style-type: none"> <li>• All layers but superficial layers are mostly diffused</li> </ul>	<ul style="list-style-type: none"> <li>• Deeper Layers</li> </ul>
Downtime	<ul style="list-style-type: none"> <li>• Desquamation</li> <li>• Redness for deep ones</li> </ul>	<ul style="list-style-type: none"> <li>• <u>No desquamation</u></li> <li>• Redness</li> <li>• <u>Swelling</u></li> </ul>
Indications	<ul style="list-style-type: none"> <li>• Pigmentation Issues</li> <li>• Fine Lines</li> <li>• Texture</li> <li>• <u>Immediate</u> Results</li> </ul>	<ul style="list-style-type: none"> <li>• Collagen Boosting</li> <li>• Tackling Scars</li> <li>• Advanced Aging Concerns</li> </ul>
Recommandations	<ul style="list-style-type: none"> <li>• Use <b>Lipoic Acid</b> to allow a better penetration</li> </ul>	<ul style="list-style-type: none"> <li>• Can be done after a light peeling to enhance results</li> <li>• To get deeper use bestens <b>Lipoic Acid</b></li> </ul>

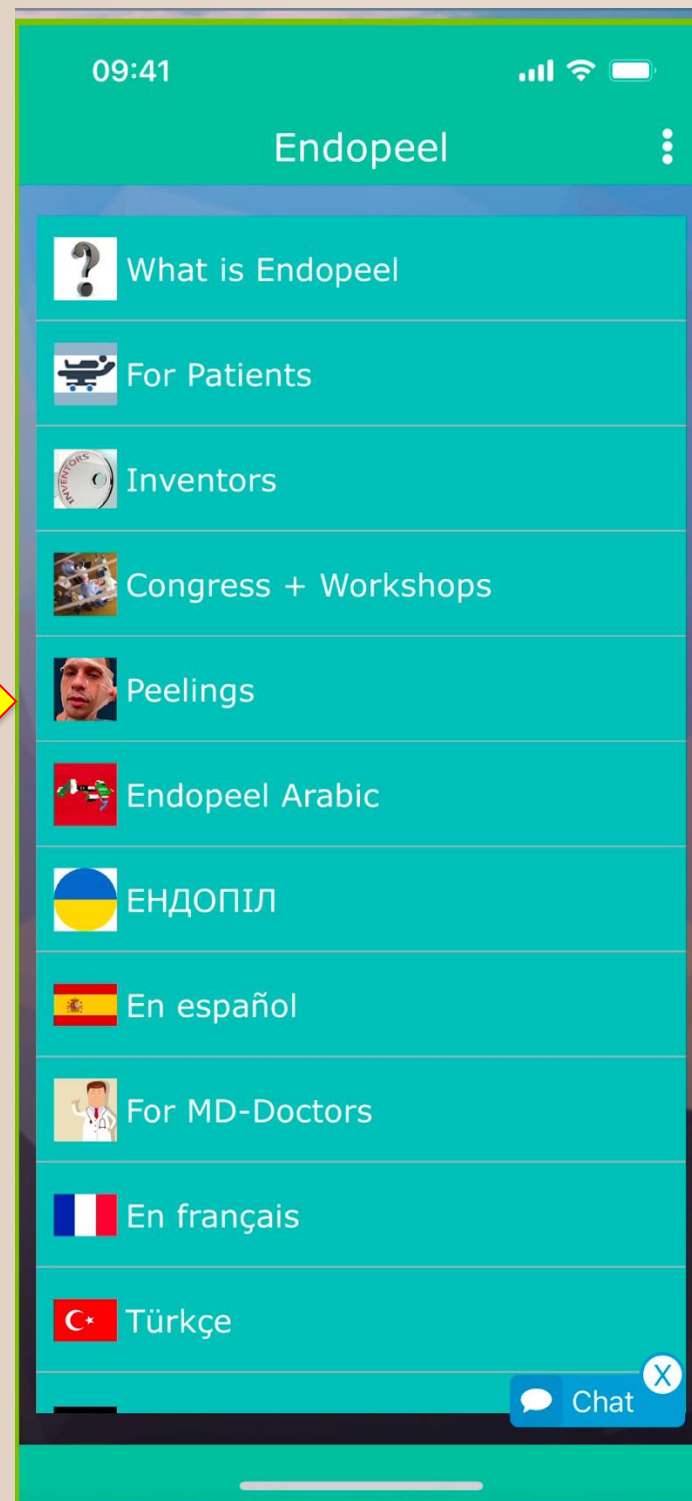
## Peels vs Microneedling

# APP „ENDOPEEL,,

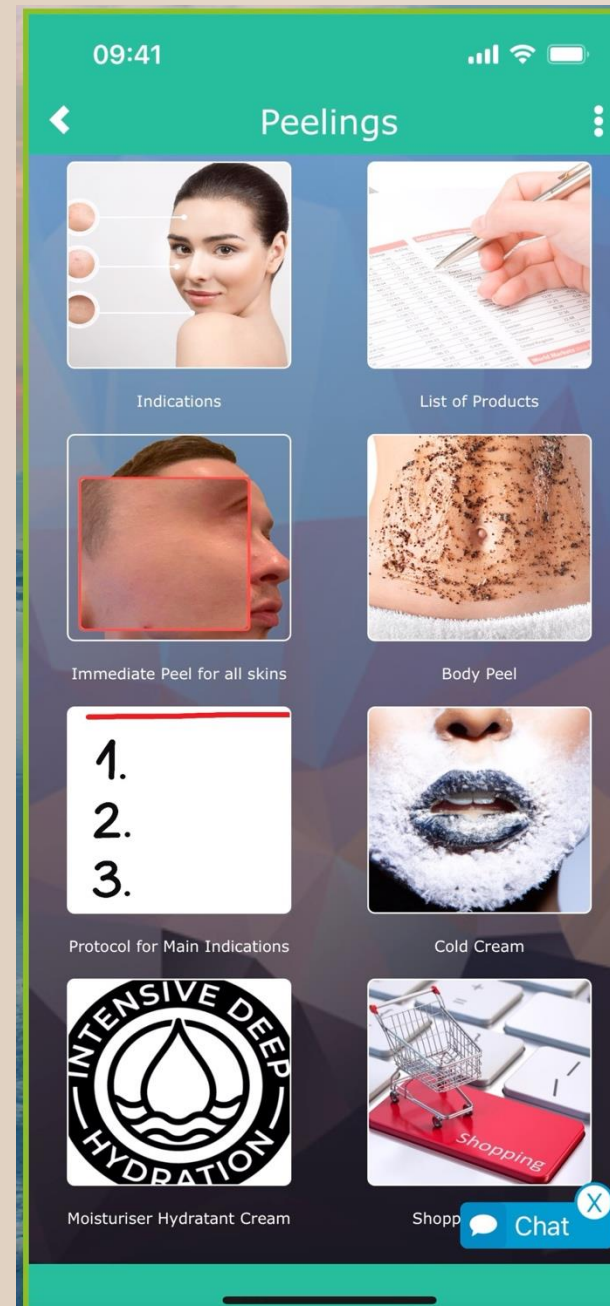




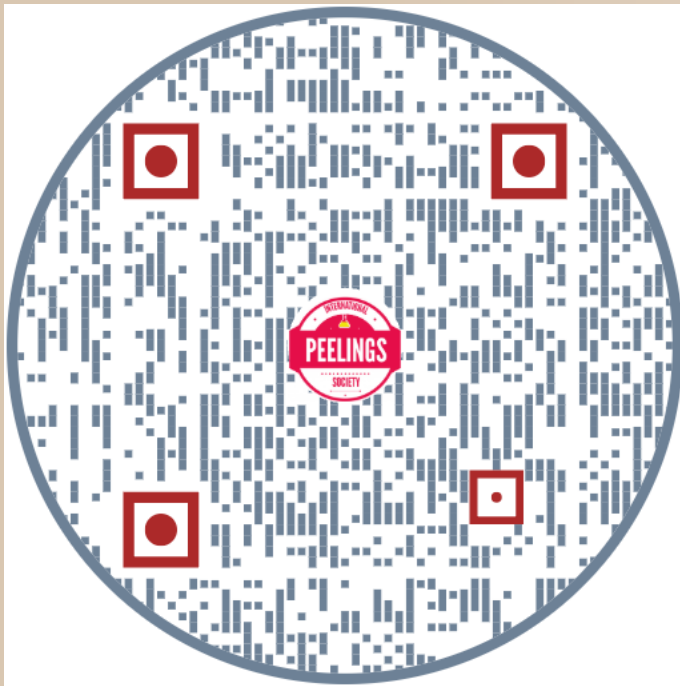
# APP „ ENDOPEEL,,



# App „Endopeel,,



# emergency-skin-rash-kit



# 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





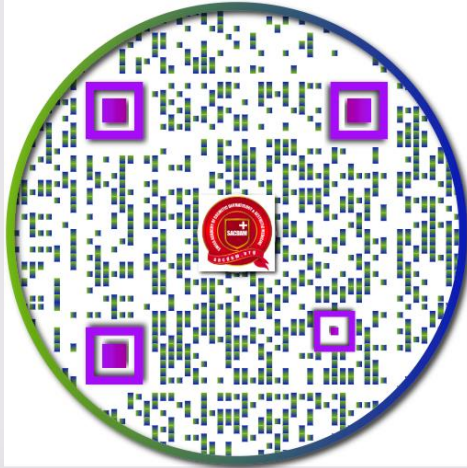


Get quickly  
tanned  
without burns

How to get  
quickly and  
deep tanned  
without  
burns







# Next Workshops in Zürich



**WORKSHOP PEELS**  
**ZÜRICH-SWITZERLAND :**  
**SEPTEMBER 19TH : 2 PM-6 PM**

Deadline for Registration : August 20 th

WITH  
**MAURO TIZIANI**  
**DR. ALAIN TENENBAUM**

<https://aesthetic.events/workshop-metabolic-peels-zurich-2025>

QR code in top left corner.

QR code in top right corner with "SCAN ME" text.

Four heart-shaped icons with flags (USA, Germany, France, Italy) on the right side.



**WORKSHOP**  
**ENDOPEEL PREPARES YOUR FACE FOR YOUR AUTUMN**  
**ZÜRICH-SWITZERLAND : SEPTEMBER 20TH, 9 AM-6 PM**

Deadline for Registration : August 20 th

WITH  
**MAURO TIZIANI**  
**DR. ALAIN TENENBAUM**

<https://aesthetic.events/endo peel-workshop-zurich-2025>

QR code in bottom left corner.

QR code in top right corner with "SCAN ME" text.

Styling Cosmetics AG logo in the top left.

Four heart-shaped icons with flags (USA, Germany, France, Italy) on the right side.



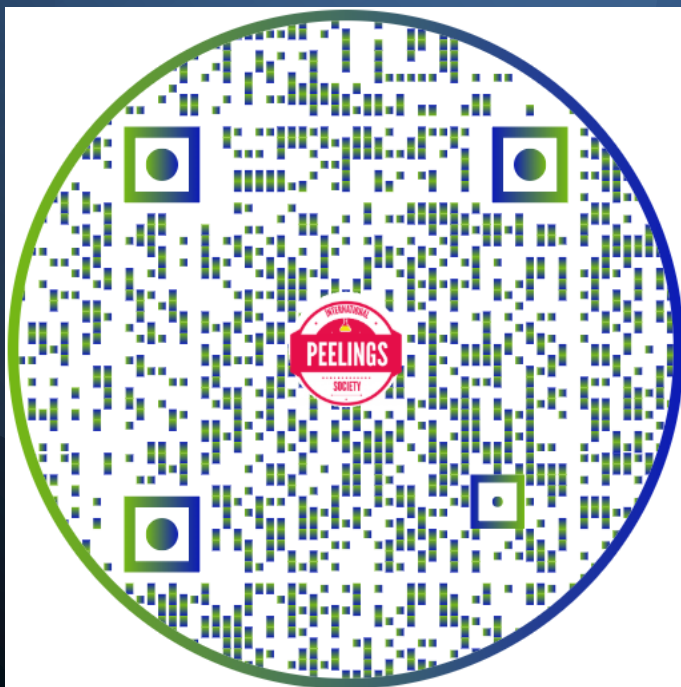
DURING THE  
LUNCH OR  
COFFEE  
BREAK  
I CAN HELP  
YOU FOR





Become a  
Member

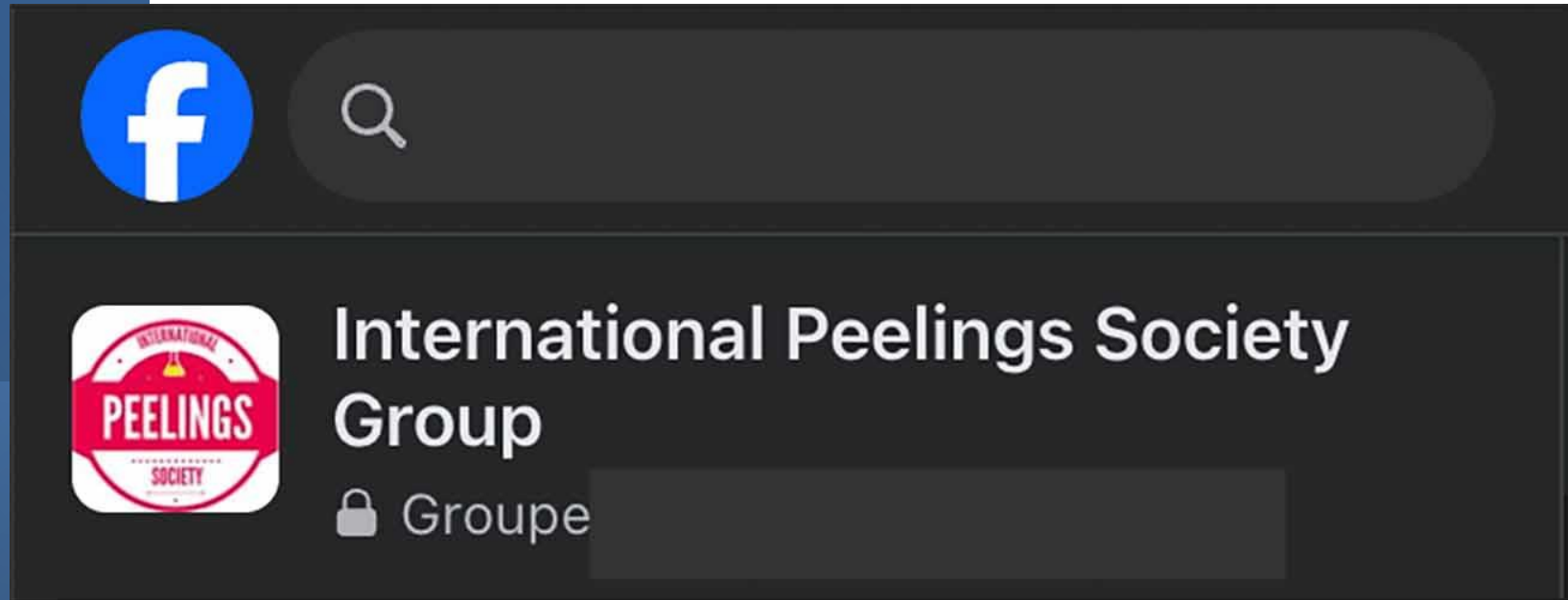
MEMBERSHIP



DURING LUNCH OR COFFEE BREAK

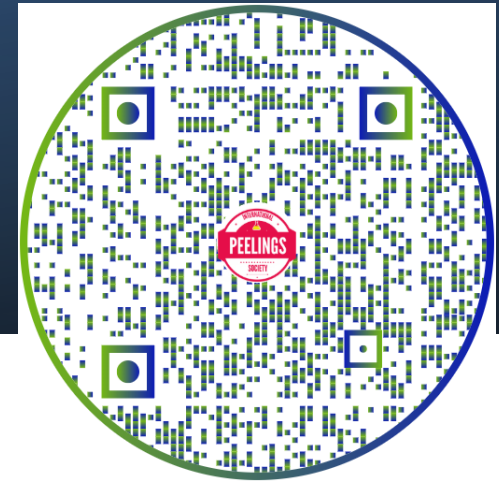


# FACEBOOK GROUP



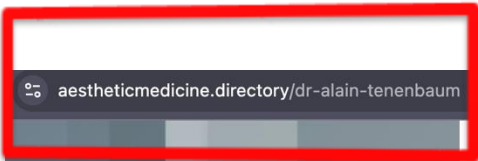
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## Dr.Alain Tenenbaum

Endopeel transforms a pay boy into a play boy

2036 QR code VCard



135 Wasserfallstrasse, Engelberg  
6390, OW, Switzerland

+41764177315

+41764177315

https://endopeel.com Content responsible

### Categories:

IPSC Members ( International Peelings Society), Aesthetic Medicine Practitioners

### Contact person

Alain

Quote

Contact business



Map

Gallery

Map Directions

Toggle Street View



Zoom +



The background consists of a dark blue field with a lighter blue square on the left and a large, semi-transparent light blue circle on the right.

Next Lecture

# HYPERPIGMENTATION

## Facial Hyperchromy



### 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

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

A red rectangular box with a white horizontal band in the center containing the word "COLORKILLER" in blue capital letters.

COLORKILLER

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

A close-up photograph of a person's face with a white, frost-like substance applied to the cheek. A small circular logo in the bottom left corner reads "PEELINGS" and "HAIR".

WHITE FROSTING

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

## 2.Addressing the 3 key compartments of melanin metabolism

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

**2 = Gentle Treatment Without Downtime**  
(Protocol by M. Tiziani)

**1 + 2 = Aggressive Treatment with Downtime**  
(Protocol by A. Tenenbaum)

# Frostings

*Targeting the  
pigment  
( ColorKiller)*

**ROSE FROSTING**



**GREY FROSTING**



**WHITE FROSTING**





# Frostings & TCA

*Targeting the  
pigment  
(ColorKiller)*

**ROSE FROSTING**



**GREY FROSTING**



**WHITE FROSTING**



*Targeting the  
pigment  
( ColorKiller)*

*The frosting has  
to completely  
cover the  
hyperpigmented  
areas*



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



*Courtesy of Dr. Alain Tenenbaum*





White  
Frosting  
appearing  
over existing  
Crusts  
at 2<sup>nd</sup> or 3<sup>rd</sup>  
Session

# FROSTING APPEARING OVER EXISTING CRUSTS



*Courtesy of Dr. Alain Tenenbaum*

# POST CHEMO-DERMABRASION DEMARCATIION LINE

Complication  
Observed After  
Chemodermabrasion  
Performed by a  
Dermatologist



*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 FOR TREATING A DEMARCATION LINE



Courtesy of Dr. Alain Tenenbaum

THE WHITE FROSTING EXTENDS BEYOND THE LESION  
INTO THE PERILESIONAL AREA

*Targeting  
the pigment  
( ColorKiller)*

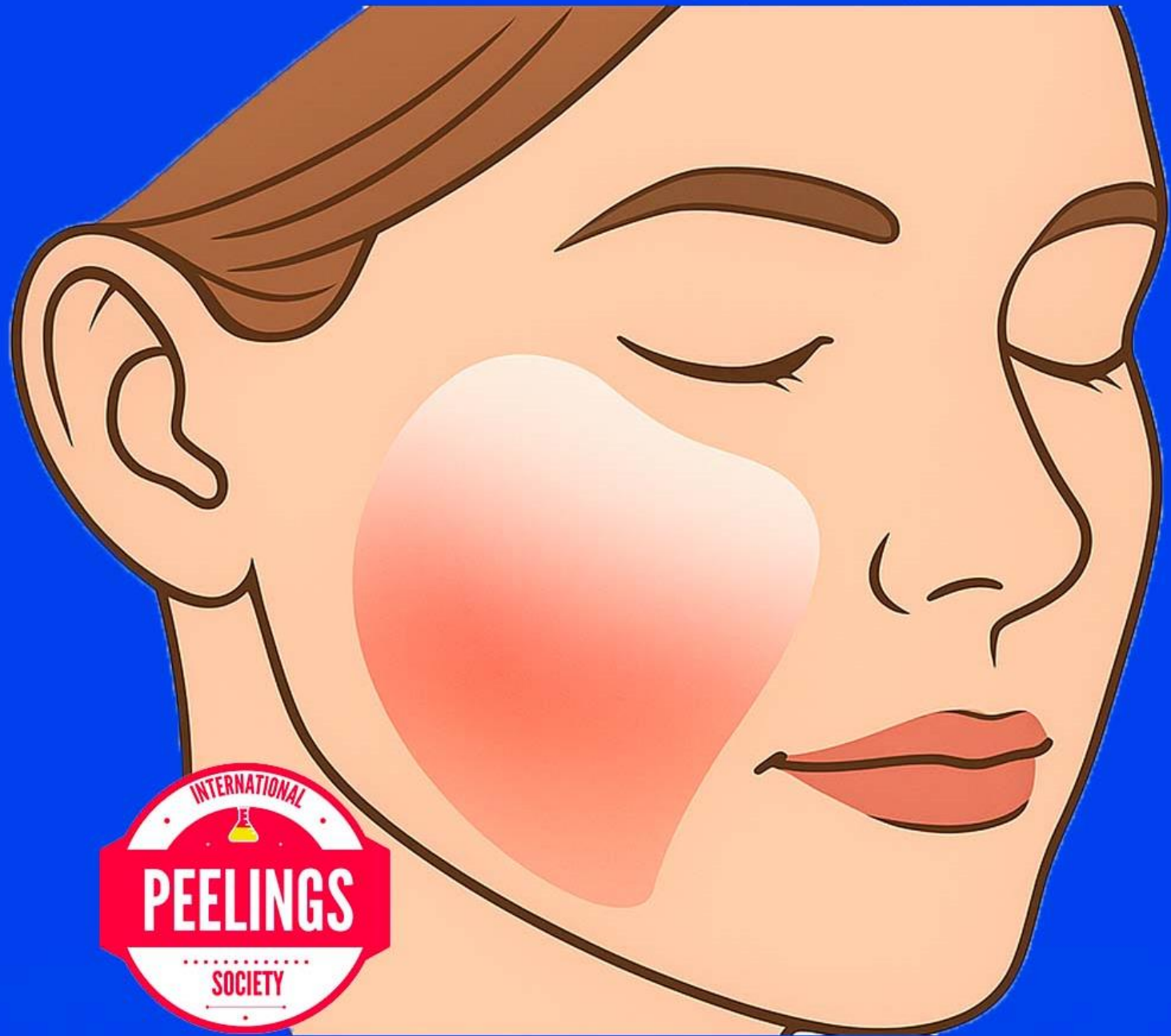


Courtesy of Dr. Alain Tenenbaum



# DEFROSTING FOLLOWING WHITE FROSTING

*Targeting  
the pigment  
( ColorKiller)*



# *Targeting the pigment (ColorKiller)*

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

### Condition

White frosting appears on the lesion

Frosting turns from grey to white on the perilesion (external limits of the lesion)

Frosting turns from red to grey on the perilesion (near the lesion but not in direct contact)

### Action

Apply the frosting stopper at the moment of defrosting following the white frosting on the lesion.

Apply the frosting stopper just juxtaposing the external limits of the lesion.

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)

## WHEN TO USE THE FROSTING STOPPER (PEELING DE LUXE PLUS)



Courtesy of Dr. Alain Tenenbaum

# Concepts of A.Tenenbaum & M.Tiziani

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

A red rectangular box with a white horizontal band in the center. The word "COLORKILLER" is written in white capital letters on the red background.

COLORKILLER

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

A close-up photograph of a person's face, showing a white, frost-like substance applied to the cheek. The person's eyes are closed. A small circular logo is visible in the bottom left corner of the image.

WHITE FROSTING

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

## 2.Addressing the 3 key compartments of melanin metabolism

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

**1 + 2 = Aggressive Treatment with Downtime**

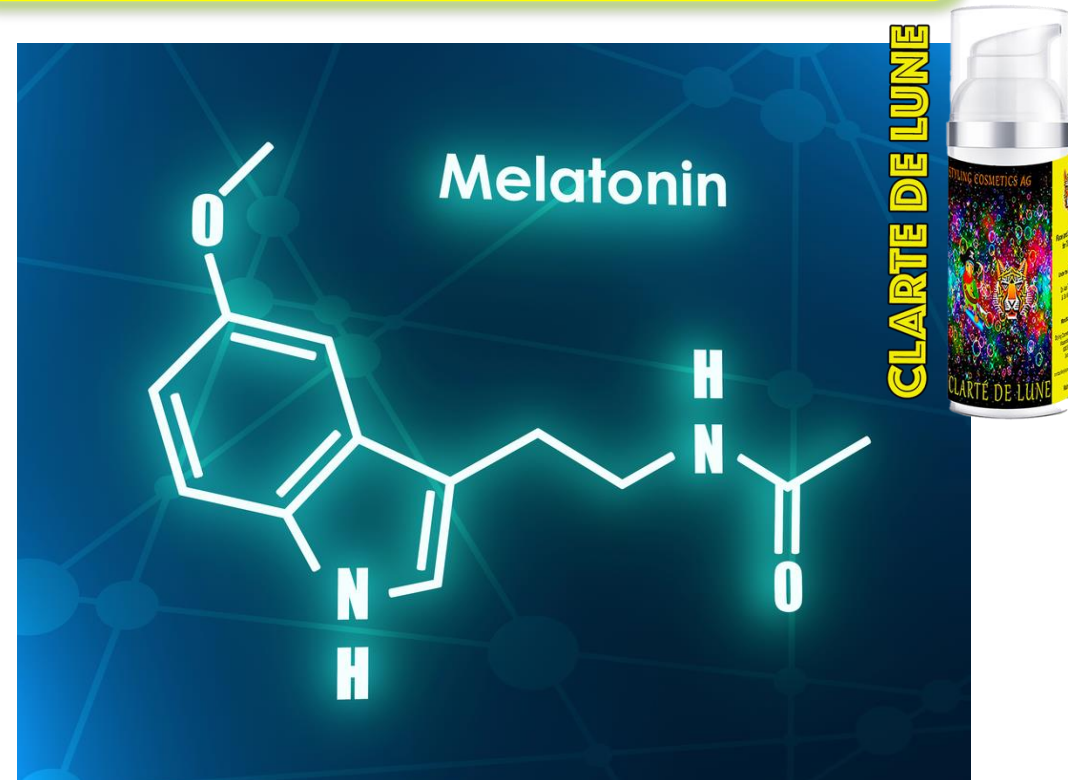
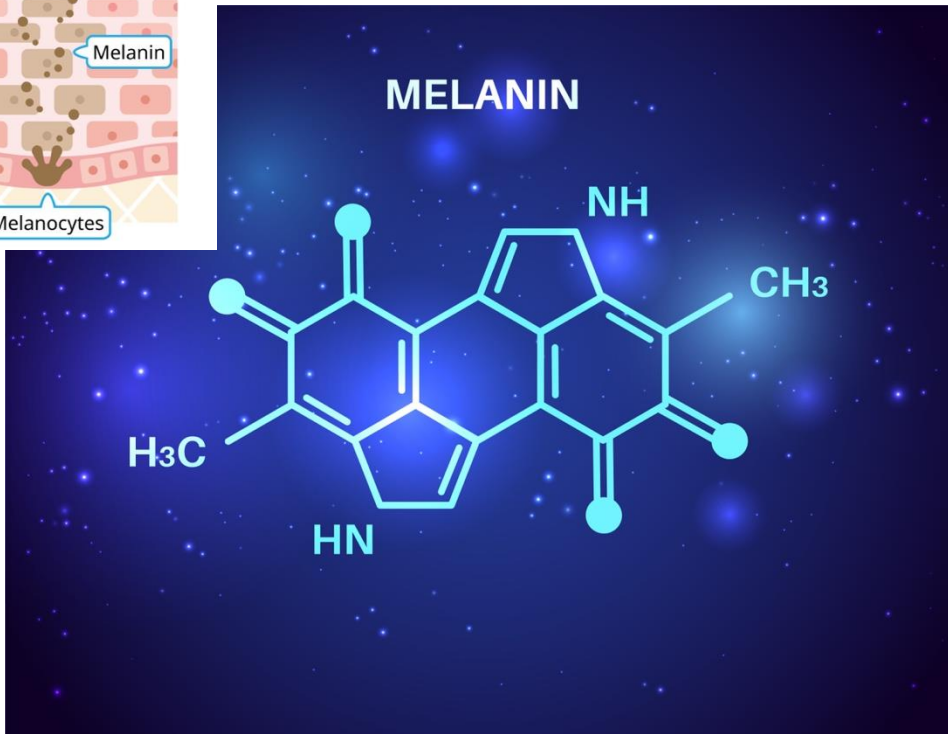
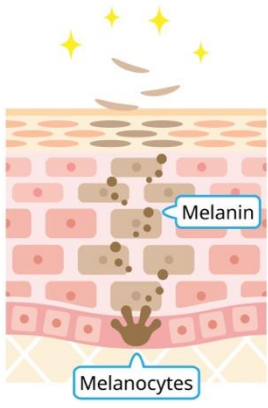
*(Protocol by A. Tenenbaum)*

**2 = Gentle Treatment Without Downtime**

*(Protocol by M. Tiziani)*

# No Confusion

## Addressing the 3 key compartments of melanin metabolism





COMPARTMENT		GOAL/AIM	CATEGORY OF TREATMENT	INGREDIENTS	PRODUCT
1	Production	Reduce the production of melanin	Prevention + Maintenance Treatments	<ul style="list-style-type: none"><li>• Tretinoin</li><li>• Tranexamic Acid</li></ul>	Peeling de Luxe Plus
2	Circulation	Lower the melanin transfer through melanosomes	Maintenance Treatment	<ul style="list-style-type: none"><li>• Topical Melatonin Regulates Melanin ( see below)</li></ul>	Clarté de Lune
3	Destruction	Treat the hyperchromy or hyperchromies	Attack Treatment	<ul style="list-style-type: none"><li>• Azelaic Acid</li><li>• Arbutin</li><li>• Kojic Acid</li><li>• Vit C</li></ul>	StretchPeel

Addressing the 3 Key Compartments of Melanin Metabolism





Protocol  
Hyperpigmentation

Protocol  
Hyperpigmentation

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

BEFORE



AFTER 4 SESSIONS



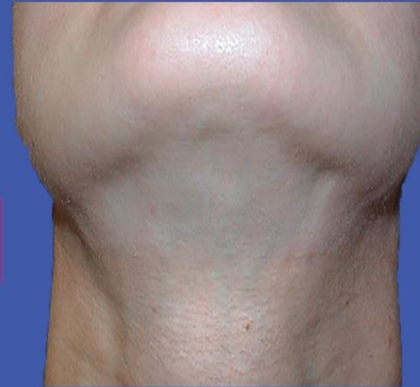
Courtesy of Dr. Alain Tenenbaum

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



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



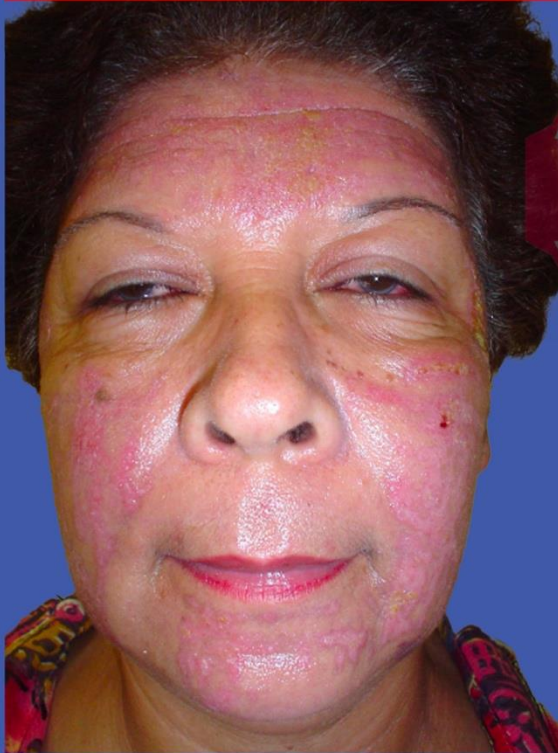
Courtesy of Dr. Alain Tenenbaum



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

LIFE  
GOES  
ON

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



Treatment of Low Neck (Décolleté)  
Post Glycolic Acid Complication  
Treatment : TCA + Metabolic Peels + Depigmentants  
Protocol of A.Tenenbaum

**BEFORE**

3 weeks after glycolic acid

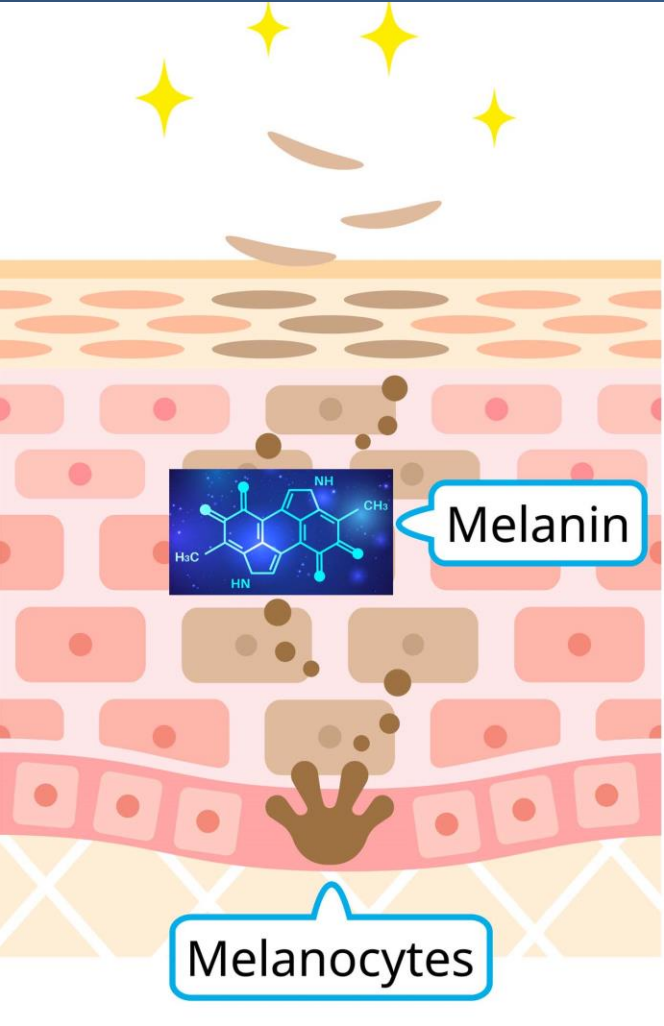


**AFTER 90 DAYS**



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 transfer
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





## Melasma on Asian Female

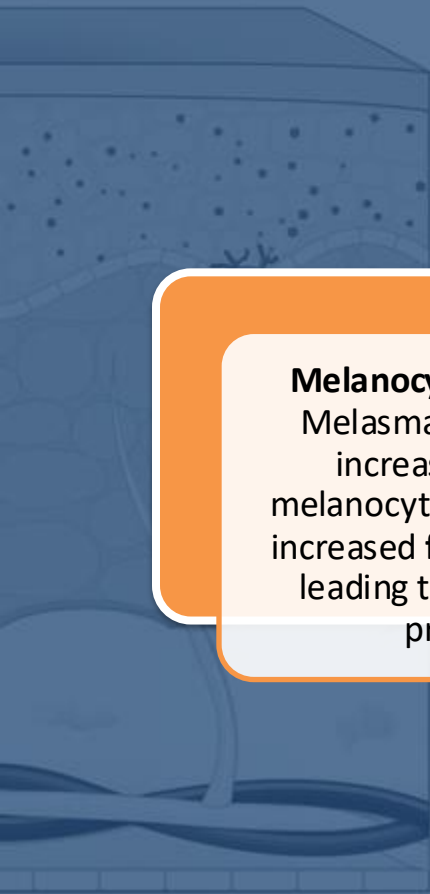


# Definition of Melasma

- 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

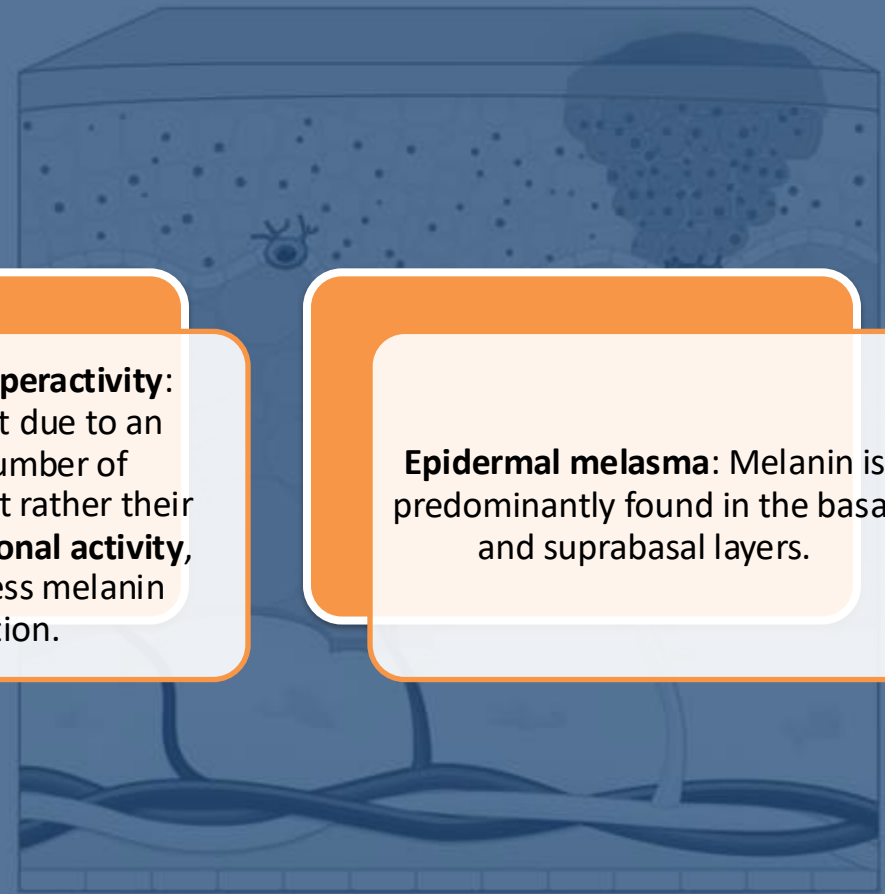
## Histo-Pathophysiology of Melasma



### Melanocyte hyperactivity:

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

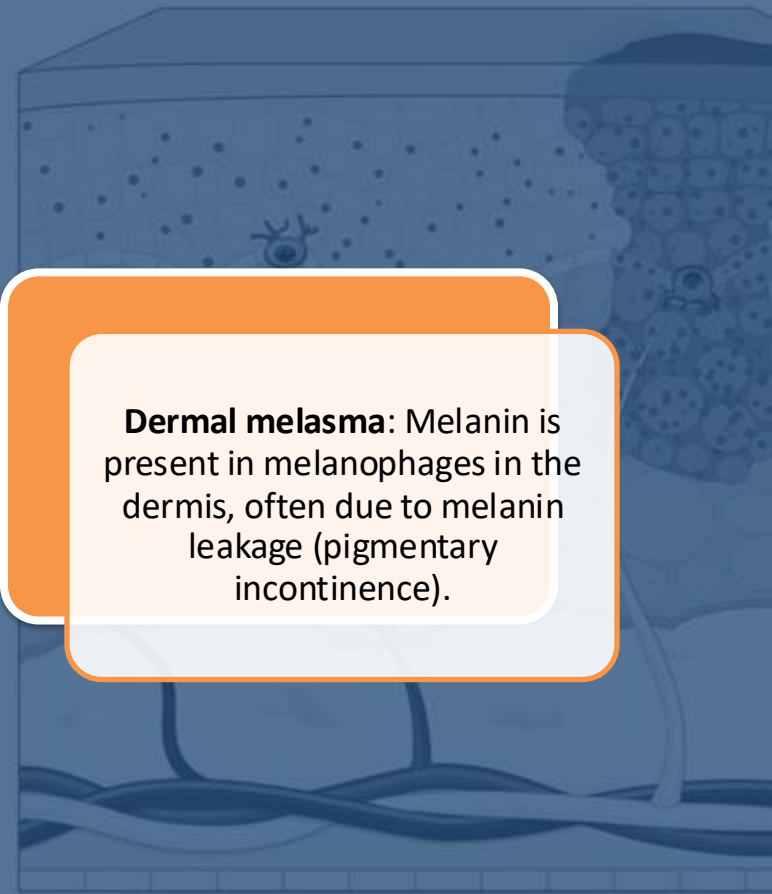
Normal skin



### Epidermal melasma:

Melanin is predominantly found in the basal and suprabasal layers.

Epidermal melasma



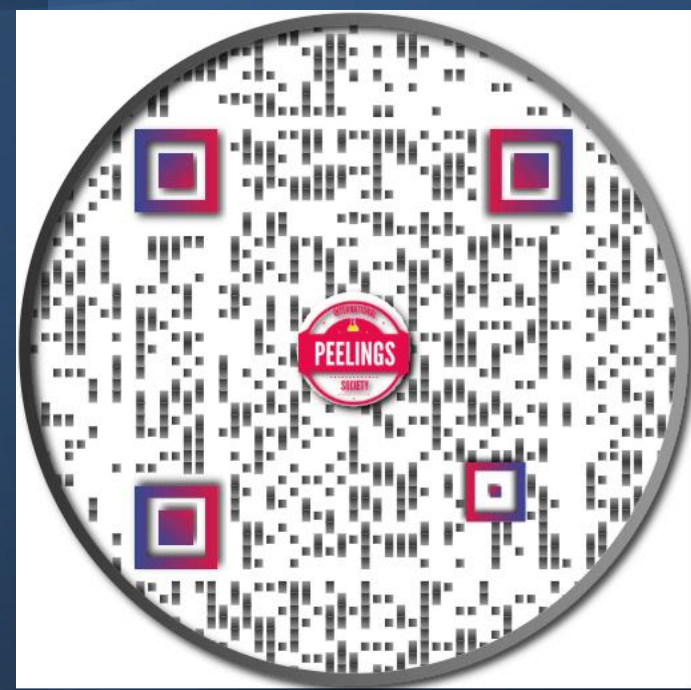
### Dermal melasma:

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

Dermal melasma



Melasma has become more prevalent in recent years



Melasma

A close-up photograph of a person wearing a blue lab coat, pouring a clear liquid from a small white bottle into their open palm. The background is softly blurred, showing a white curtain. The text "Which Sunscreen without Alcohol?" is overlaid in white, centered on the image.

Which Sunscreen without Alcohol?

## 2.Addressing the 3 Key Compartments of Melanin Metabolism

# StretchPeel as Sunprotector

- 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.

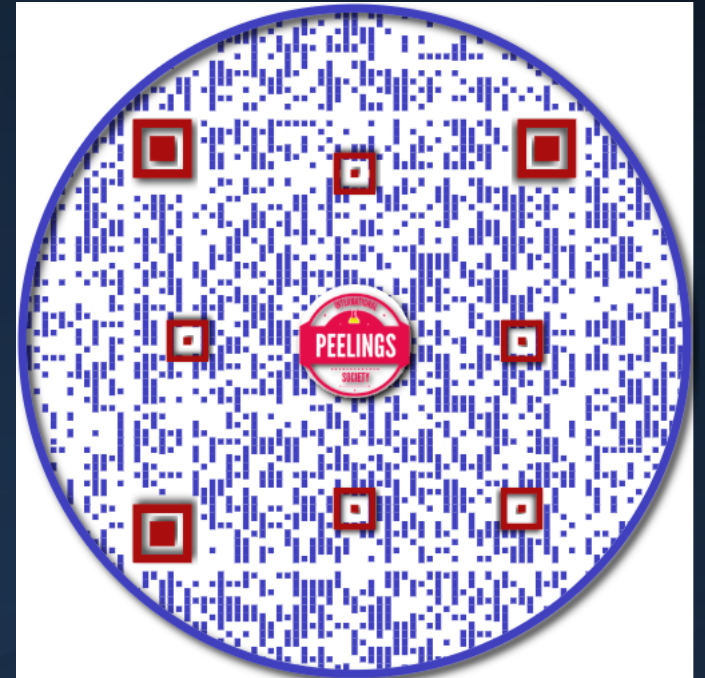


Melasma

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



# Protocol Melasma



Protocol & Treatment Melasma

How to get rid of  
Melasma  
after uncorrect  
treatment :  
frosting not  
covering the  
whole colour of  
the melasma !

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

7 DAYS  
AFTER TCA 18% w/w  
UNCORRECT



Korean Female 29Y



7 DAYS  
AFTER TCA 30% w/w  
CORRECT



Courtesy of Dr. Alain Tenenbaum

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

7 DAYS  
AFTER TCA 18% w/w  
UNCORRECT



Korean Female 29Y



7 DAYS  
AFTER TCA 30% w/w  
CORRECT



Courtesy of Dr. Alain Tenenbaum





# Social Eviction ( Downtime) Information with TCA 3 Days after Each Session

TCA 20% w/w on Phototype 2  
Huge social eviction 3 days after each session  
TCA + Metabolic Peels + Depigmentants + Moisturizer  
Protocol of A.Tenenbaum : 4 sessions-1 session/week

D0



D21+3



D8+3



D15+3



Courtesy of Dr.Alain Tenenbaum



[Patient Leaflet to avoid  
Panic](#)

# Patient Leaflet to Avoid Panic



# Combination EBD+ Peels

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

D0



1 ST SESSION

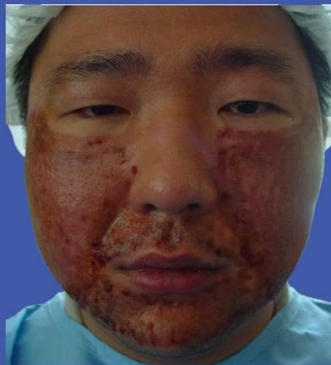
Korean Male



D7



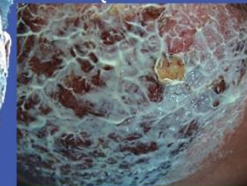
D1



D4



Peeling Sushi or  
Laser Spot  
Desquamation



Courtesy of Dr. Alain Tenenbaum



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

2nd SESSION

No need to go on  
with a 2<sup>nd</sup> session.

It s better to go  
on with metabolic  
peels without TCA



Courtesy of Dr.Alain Tenenbaum



## 2. Targeting the pigment ( ColorKiller)

### Is Salicylic Acid a Color Killer?

- 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

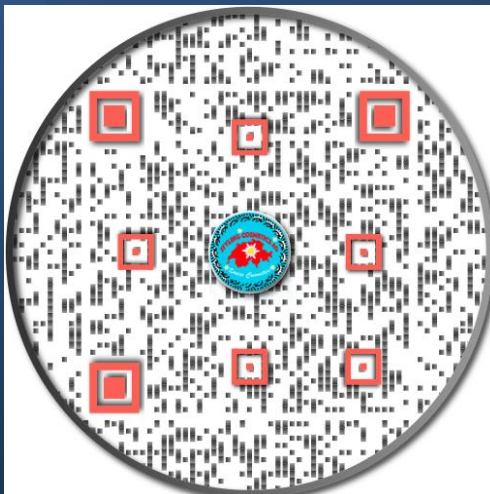
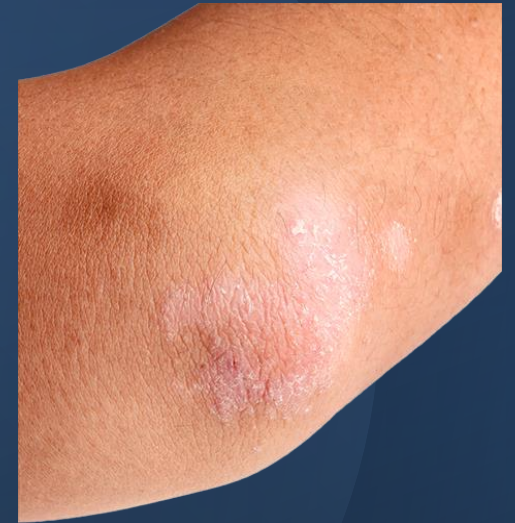
# Clinical Effects & Visual Appearance

## 2.Targeting the pigment ( ColorKiller)

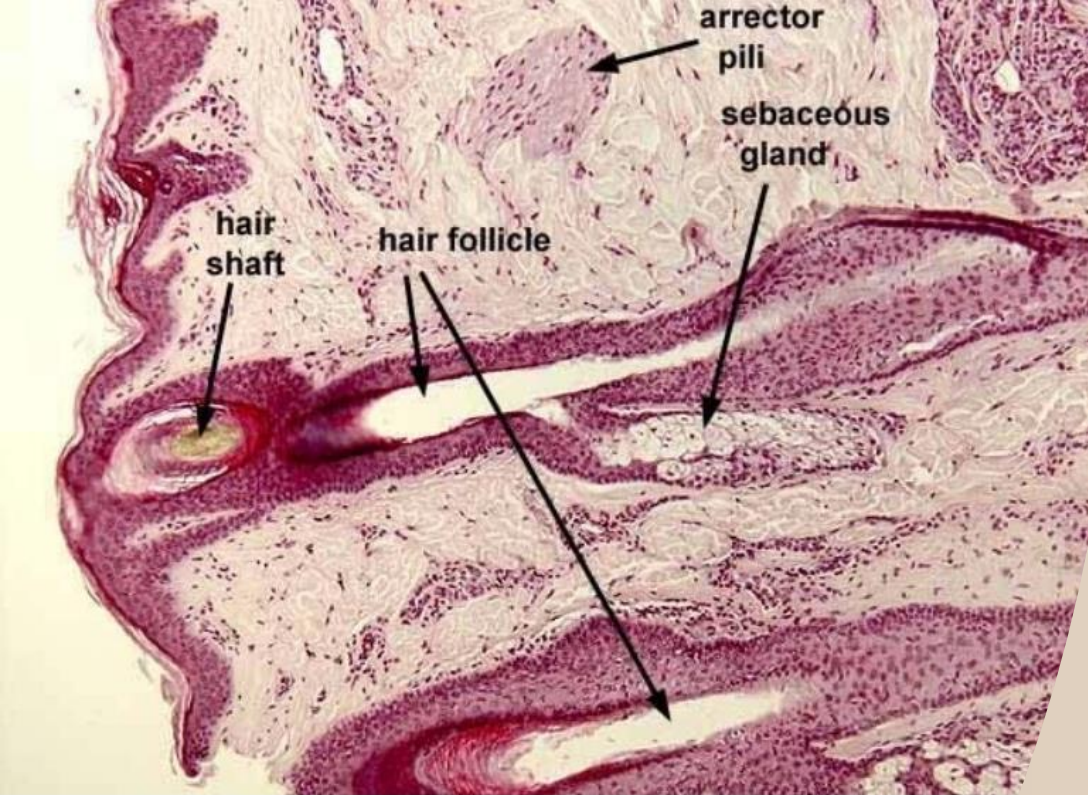
SALICYLIC CONCENTRATIONS & VISUAL EFFECTS		ROSE ( BLUSH)	GREY (PATCHY)	WHITE DENSE
1	Physical Effect	Appearance	Crystallization	Pseudo Frosting
2	Concentrations w/v	25% or less	25-30%	30-40%
3	Effects	<ul style="list-style-type: none"><li>Mild erythema</li><li>no visible frosting</li><li>no visible crystallization</li></ul>	<ul style="list-style-type: none"><li>Visible <b>pseudofrosting</b> in some zones</li><li>partial precipitation of crystals</li></ul>	<ul style="list-style-type: none"><li>Thick white film</li><li><b>crystallized salicylic acid</b></li><li>not true protein coagulation</li></ul>
4	Depth	<ul style="list-style-type: none"><li>Very superficial</li></ul>	<ul style="list-style-type: none"><li>Superficial peel</li></ul>	<ul style="list-style-type: none"><li>Superficial epidermal peel</li></ul>
5	Indications	<div><ul style="list-style-type: none"><li>Sensitive skin</li></ul></div> <div><ul style="list-style-type: none"><li>maintenance treatments</li></ul></div>	<ul style="list-style-type: none"><li>Acne-prone skin</li><li>comedones</li><li>oily zones</li></ul>	<ul style="list-style-type: none"><li>Acne</li><li>seborrheic skin</li><li>keratosis pilaris</li><li>thick skin areas (nose, chin, back)</li></ul>

# Indications for Keratotic Zones Use of Salicylic Acid in Ethanol

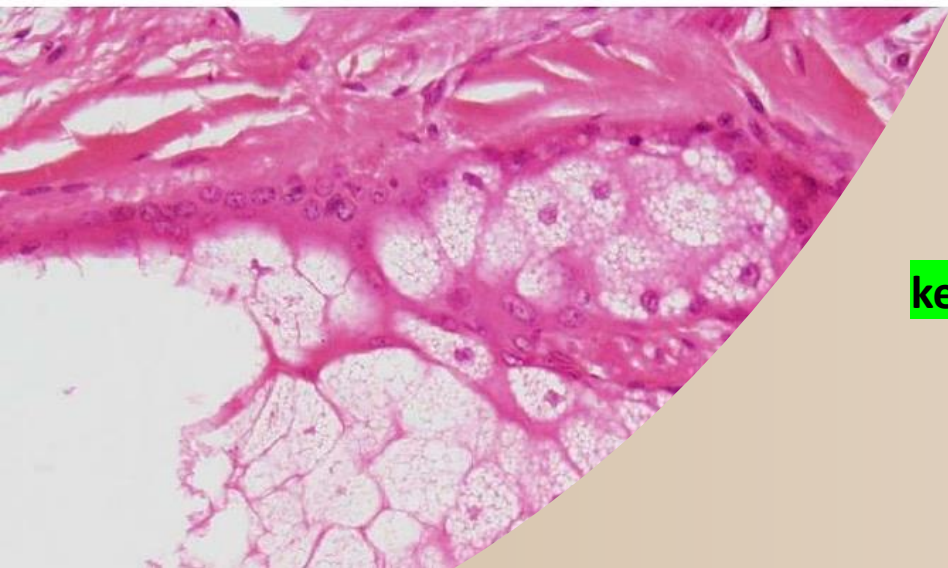
<https://chemicalpeeling.com/products-list/salicylic-acid>







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

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



M.TIZIANI, RCSA

[drpeeling@bluewin.ch](mailto:drpeeling@bluewin.ch)



# Intimate Areas

## Where Skin Care is Important

**For Men**

Perianal  
Area

**For Women**

Perianal  
Area

Genital  
Area

Inner  
Thighs



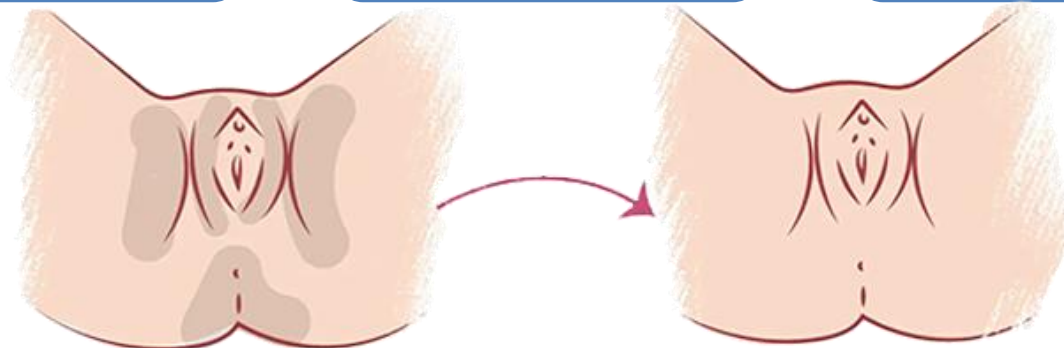
# Common Indications

Pigmentation  
Issues

Post  
Pregnancy  
Skin Changes

Aging

Lichen  
Sclerosus

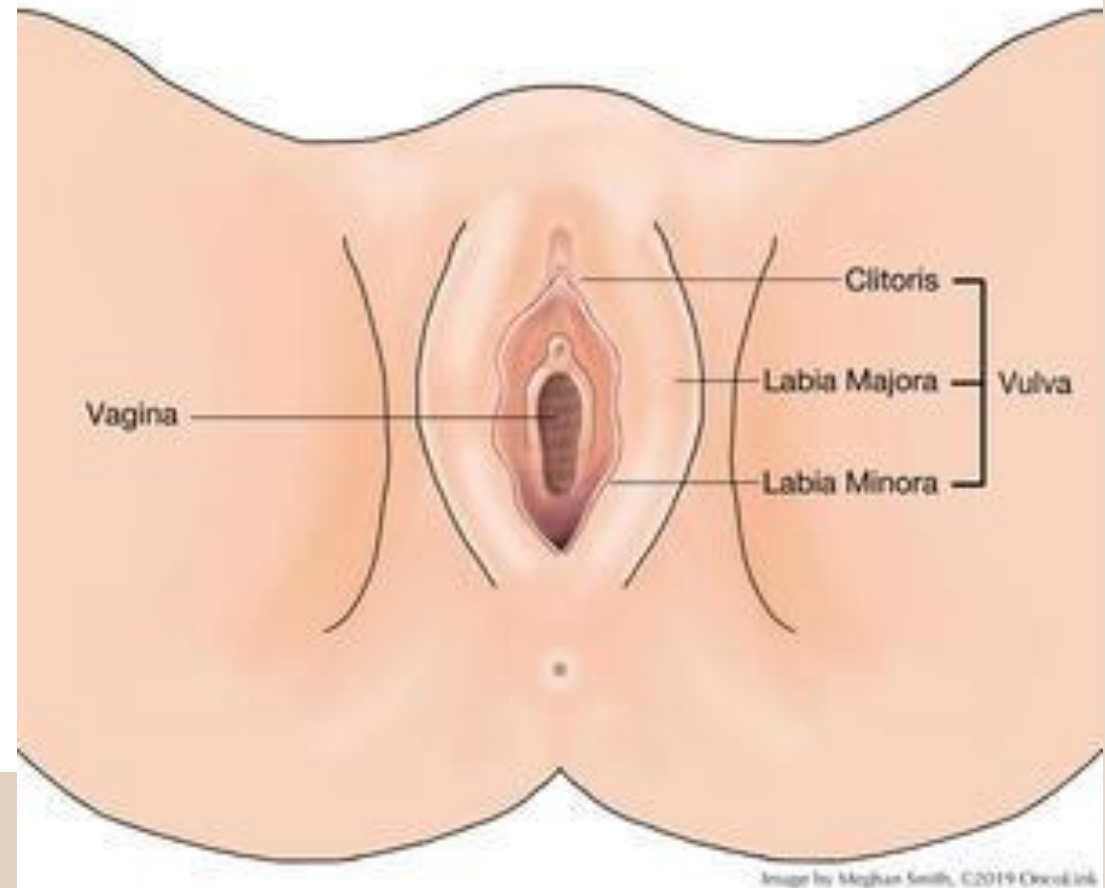
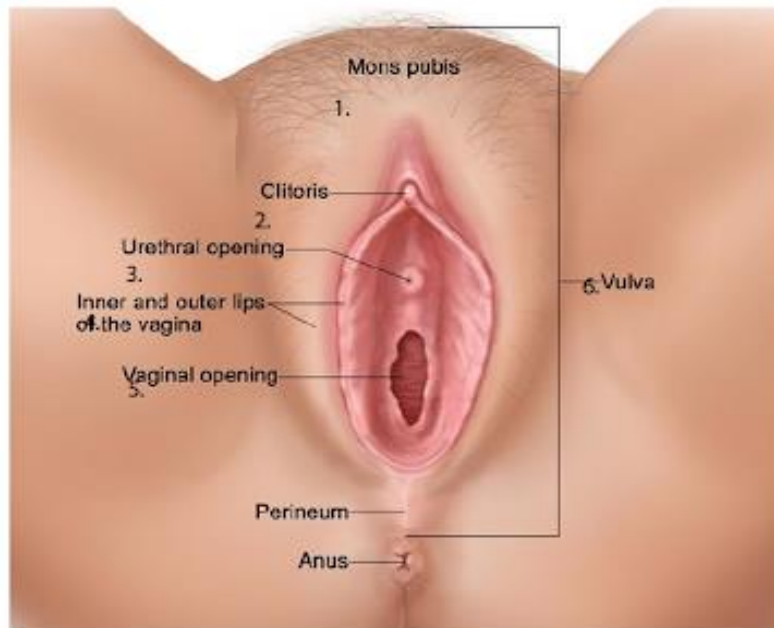


# Which external structures of the vulva can be treated

**STRUCTURES OF THE VULVA**

**NEVER TREAT INTERNAL STRUCTURES OF THE VULVA WITH Peels LIKE LABIA MINORA**

## *External Reproductive Anatomy*

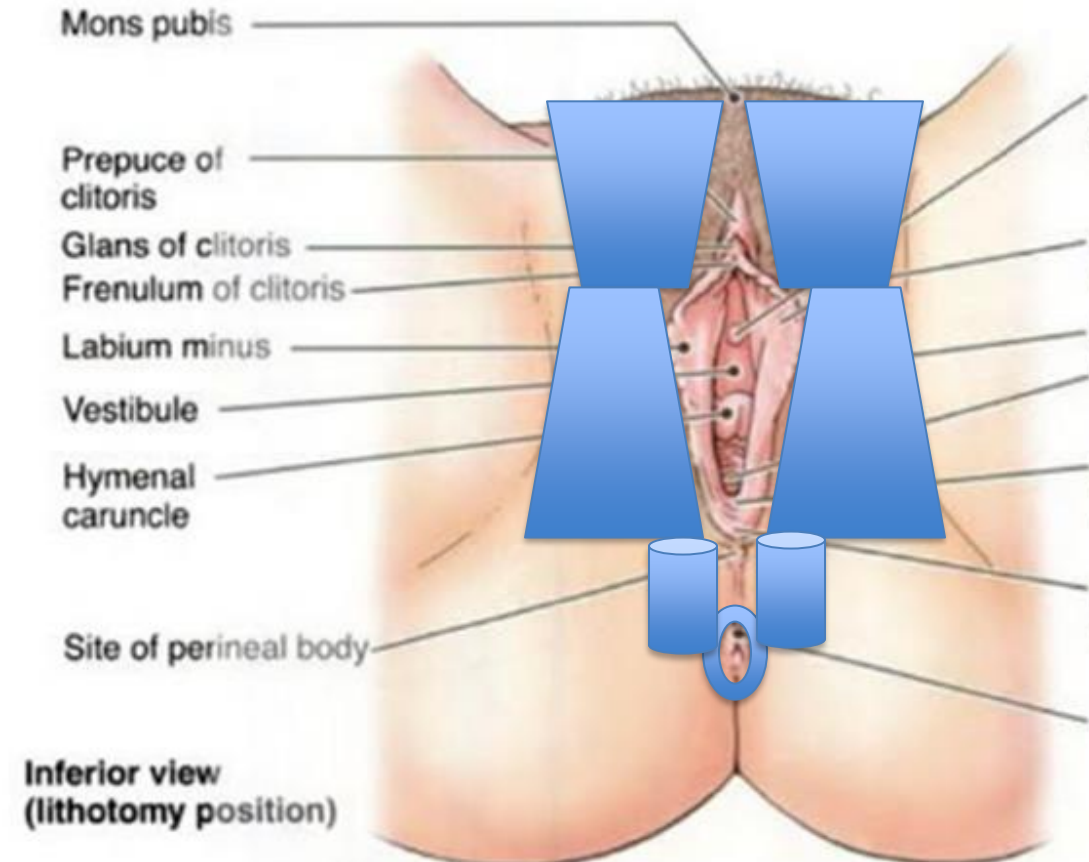
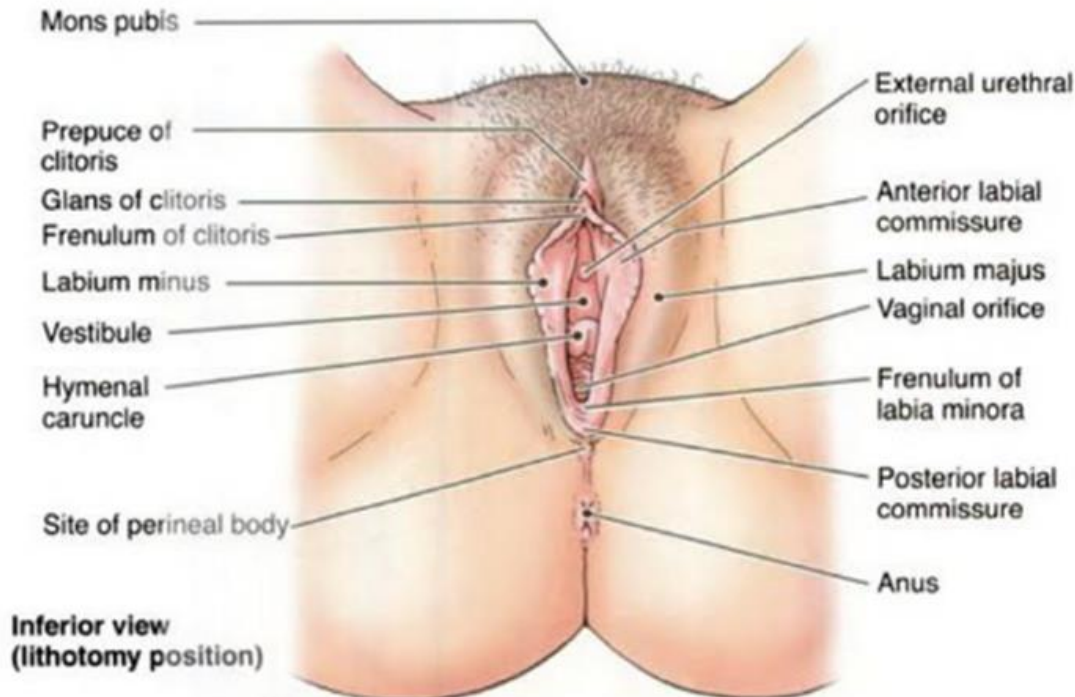




# FEMALE VULVA

## FEMALE PERINEUM

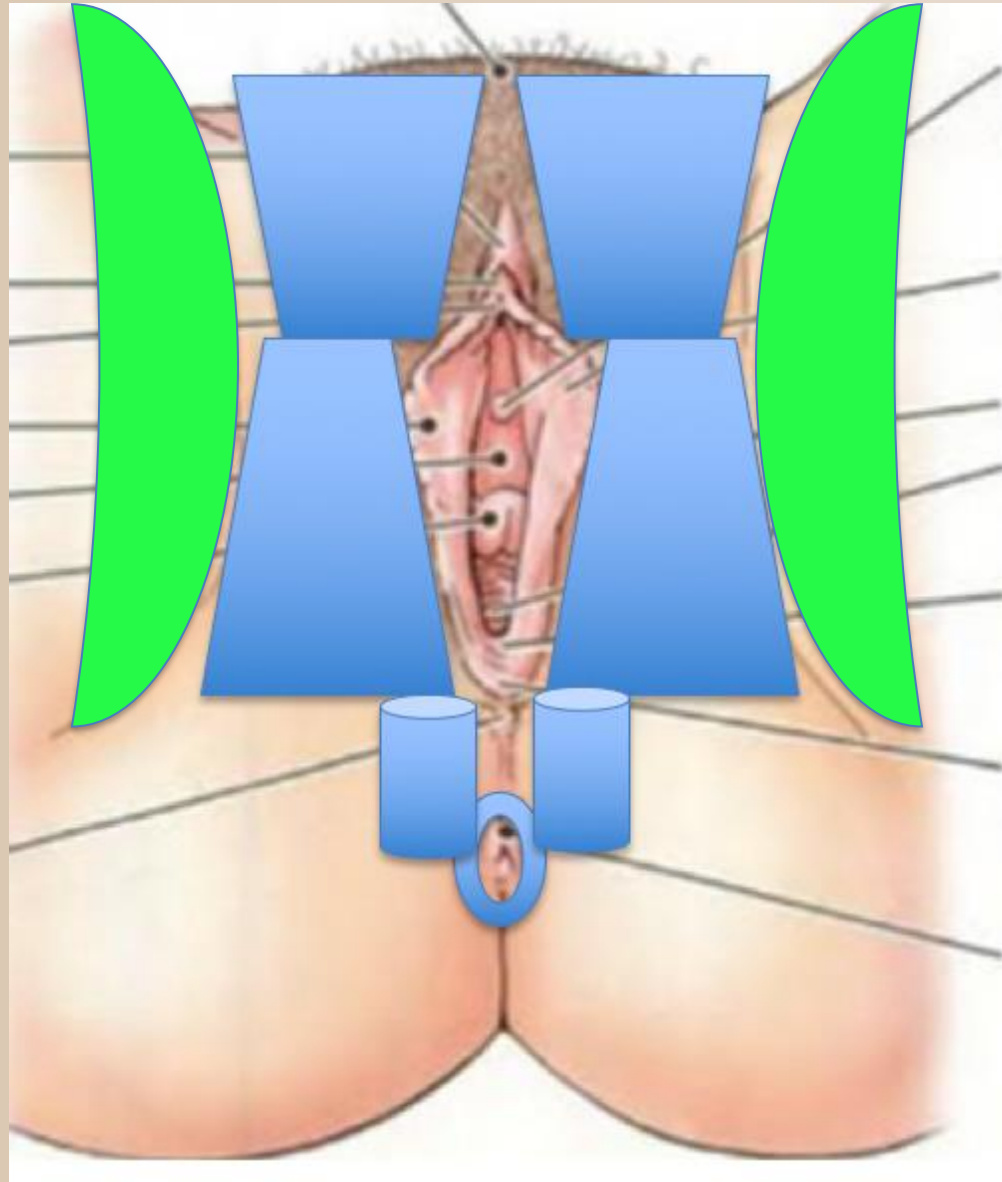
TREAT ONLY EXTERNAL VISIBLE STRUCTURES  
FROM PUBIS TO PERIANAL AREA



# WHERE TO PEEL

IN BLUE : EXTERNAL FEMALE GENITALIA+ PERIANAL AREA

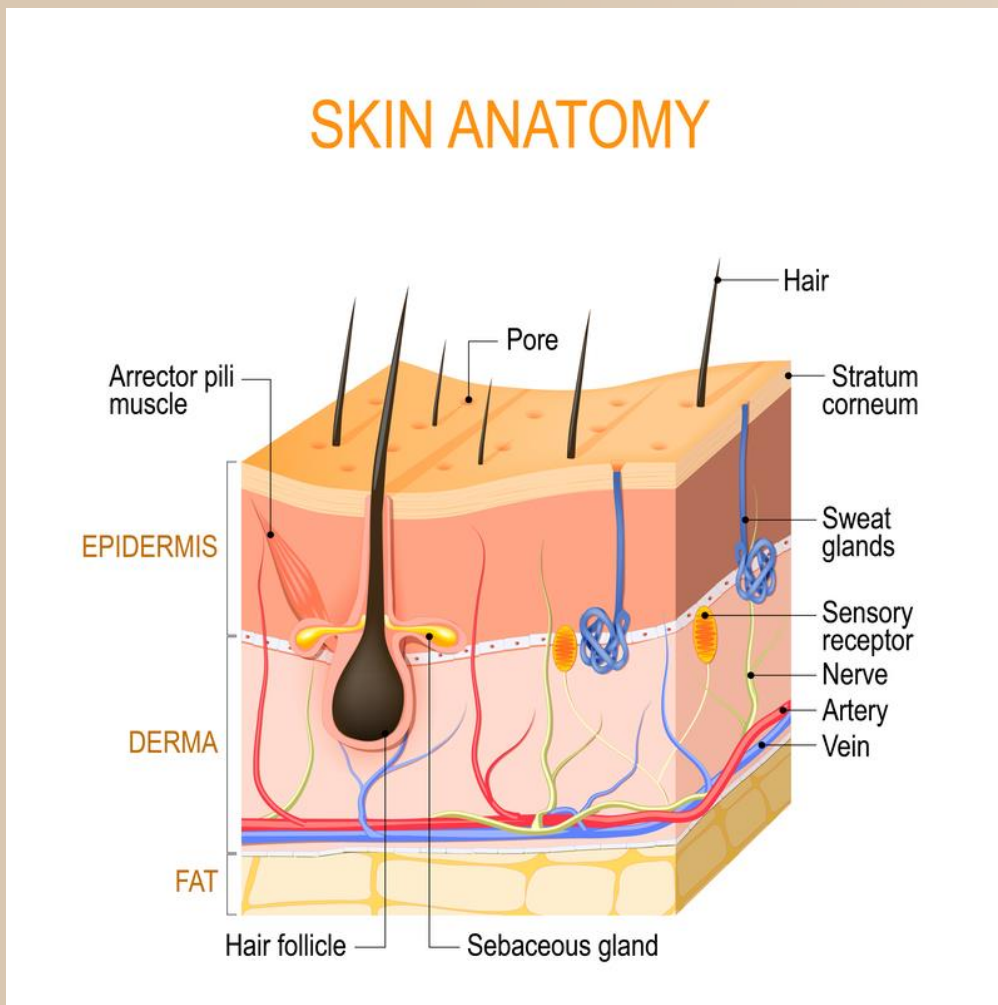
IN GREEN : INNER THIGHS



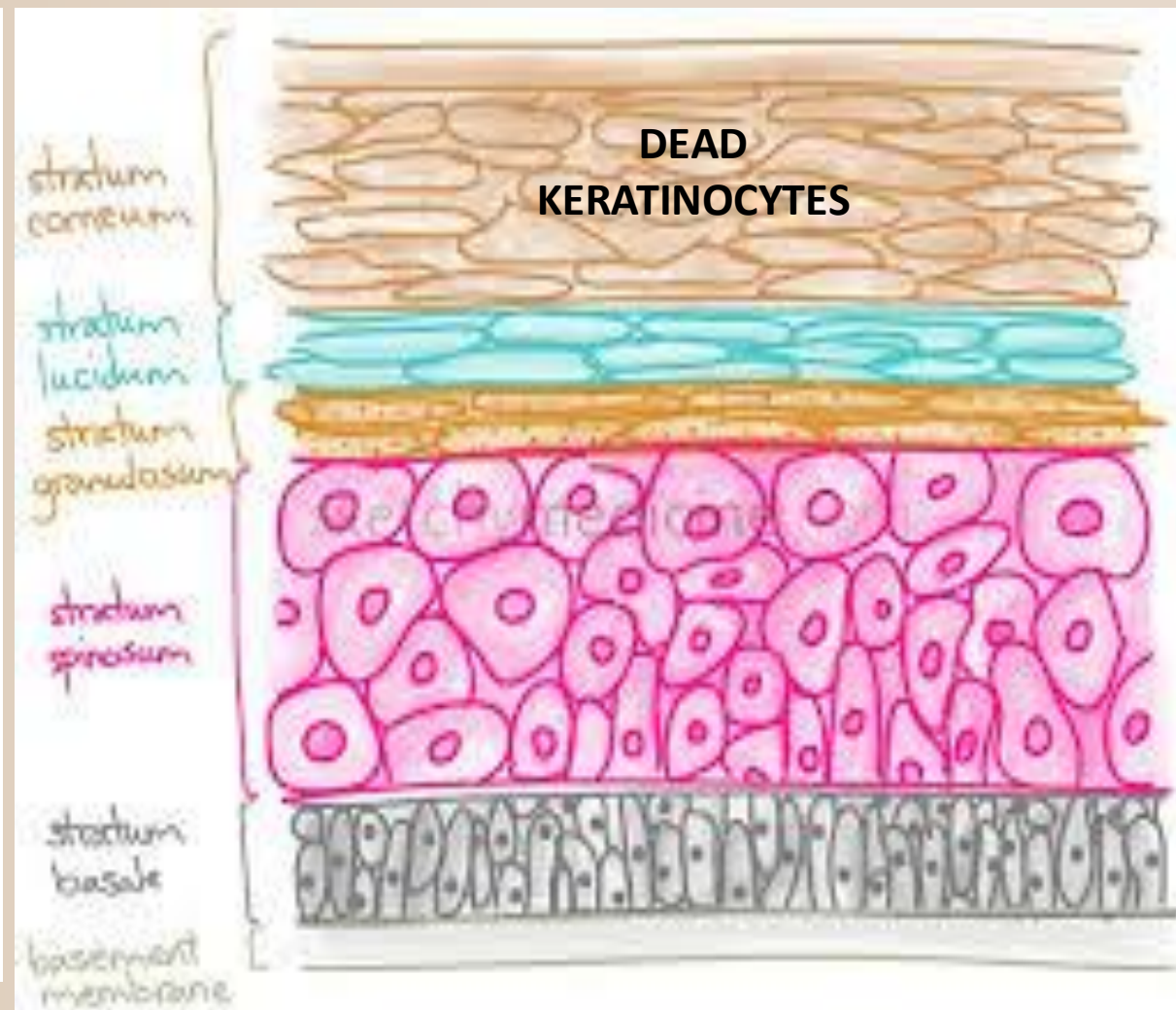
# HISTOLOGY OF THE SKIN AND EPIDERMIS

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

## *3 Layers*

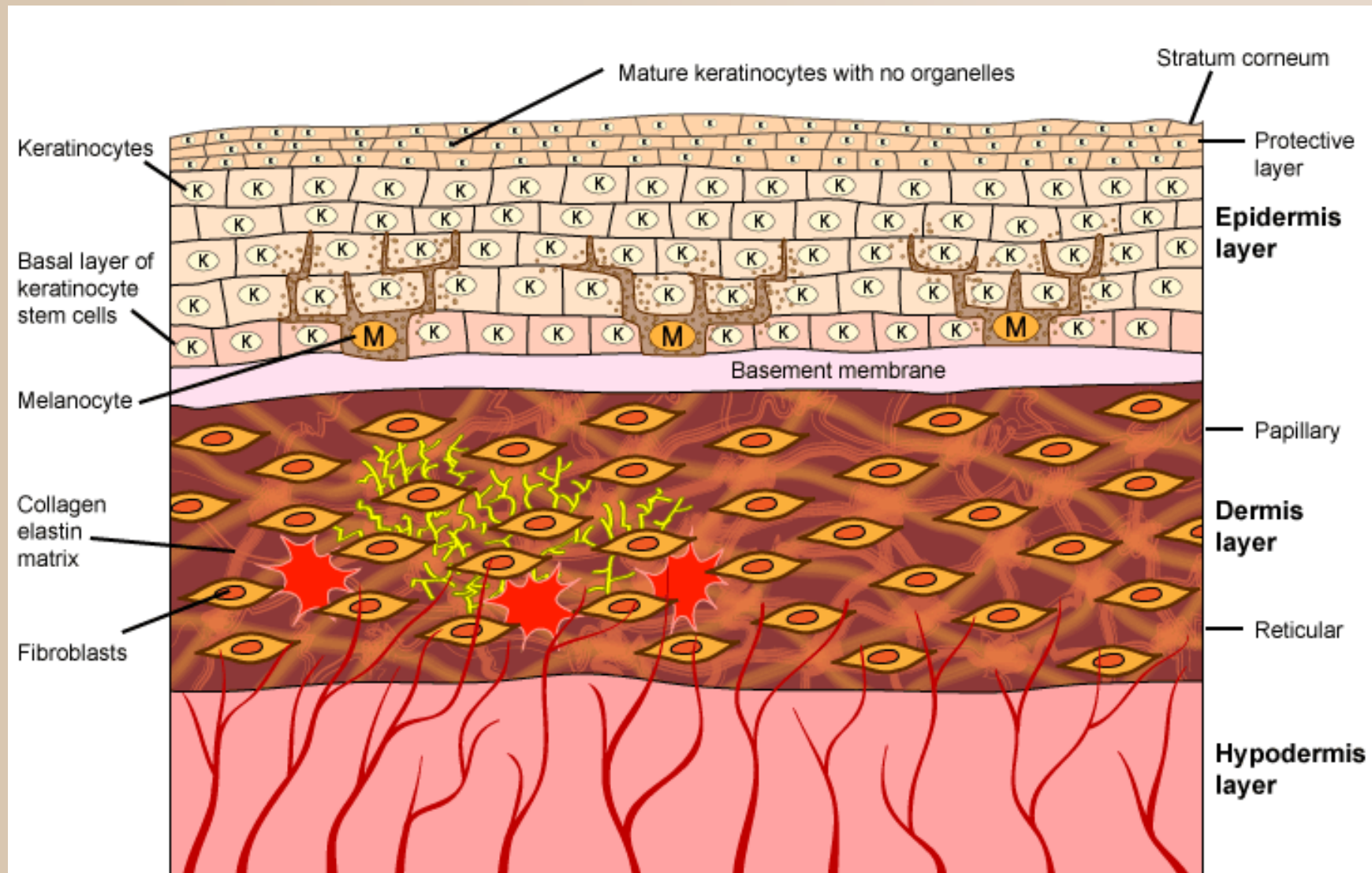


## *5 Epidermal layers*





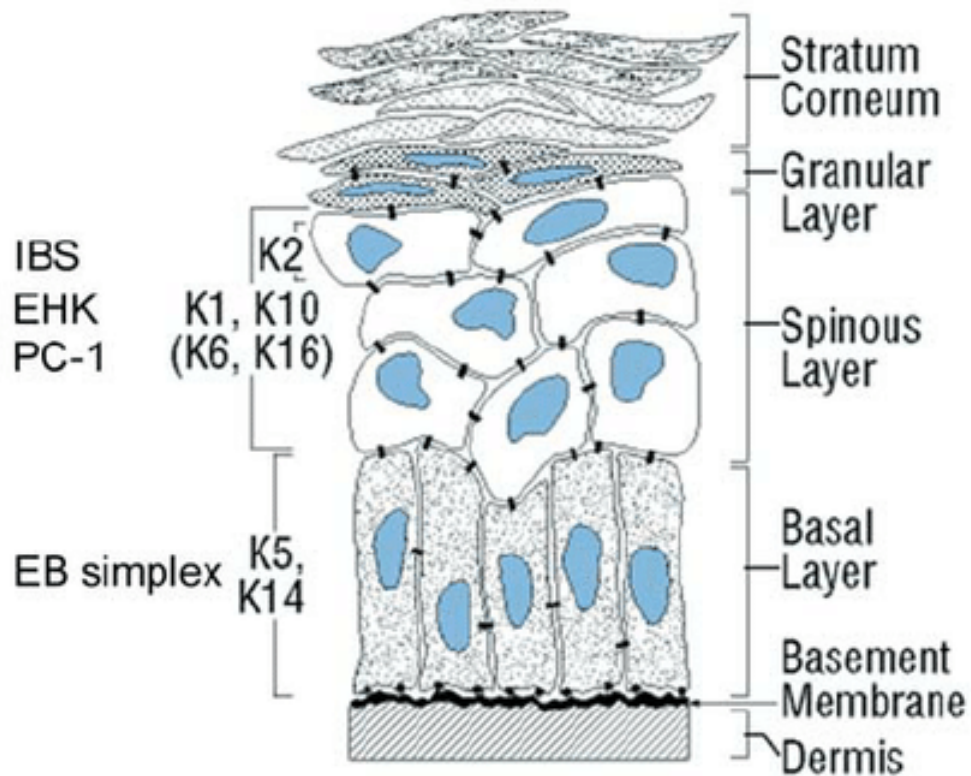
# PIGMENTED LAYERS ARE EPIDERMIS, BASEMENT MEMBRANE AND DERMIS



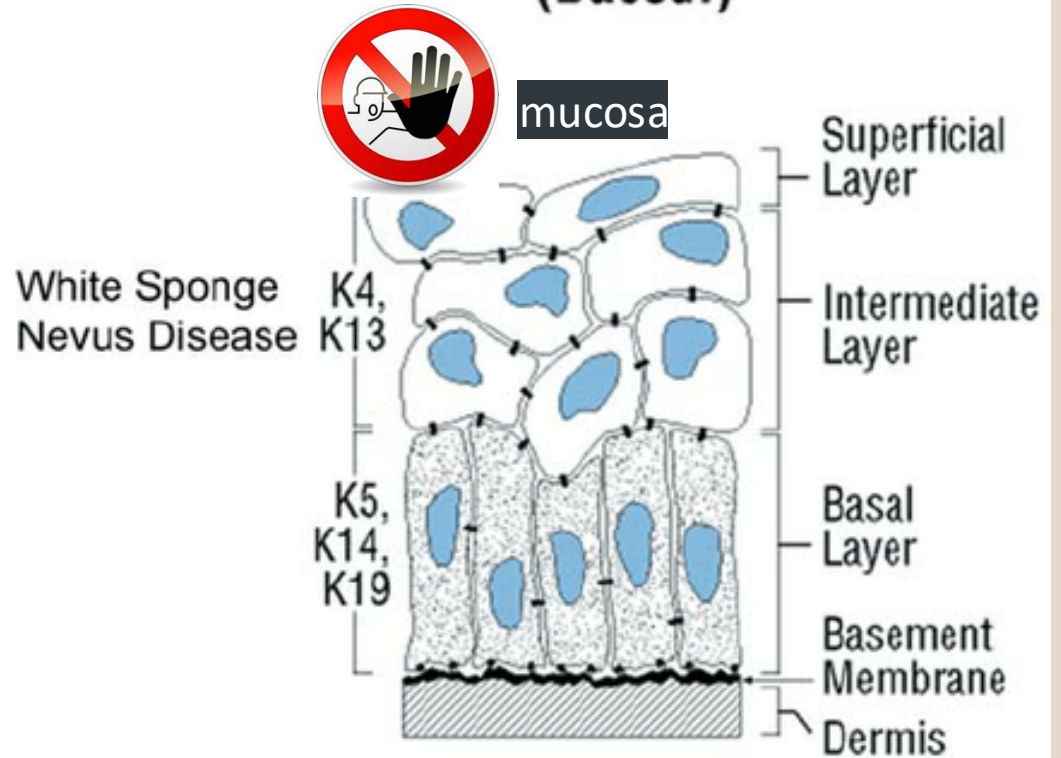


# KERATINIZED AND NON KERATINIZED STRATIFIED SQUAMOUS EPITHELIUM

## Epidermis, Oral Keratinized



## Oral Non-Keratinized (Buccal)



# TO PEEL OR NOT TO PEEL THAT IS THE QUESTION



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



**NOT** keratinized stratified squamous epithelium  
(Mucosa)

CLITORIS

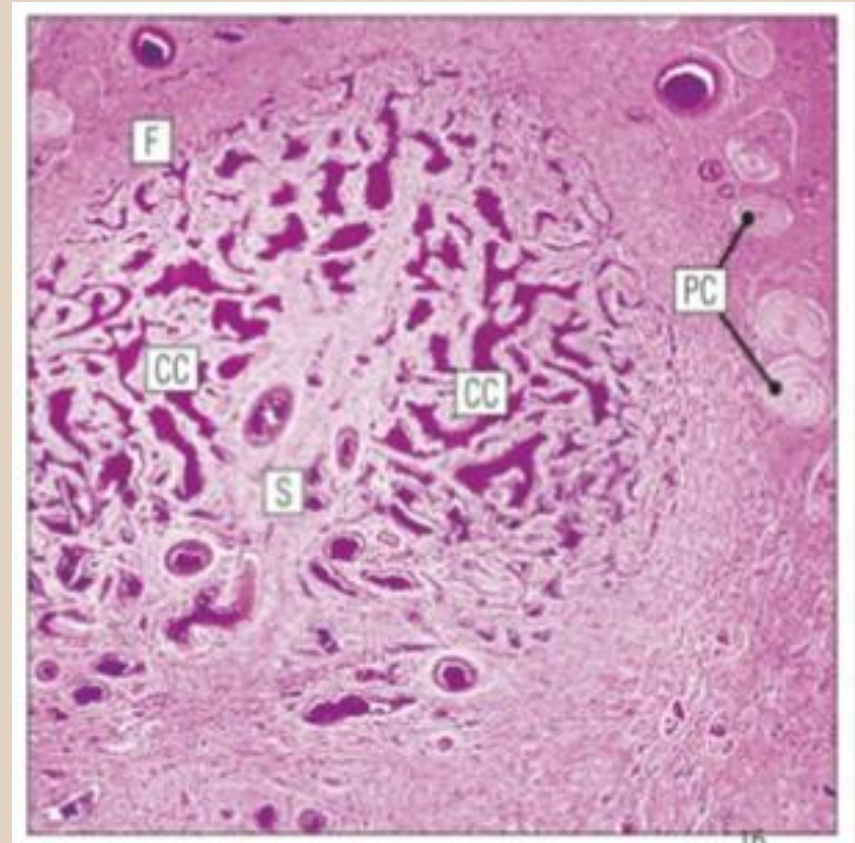
LABIA MINORA

VESTIBULE

ANUS

VAGINA

CLITORIS



No hair follicles are observed in this section



# TO PEEL OR NOT TO PEEL THAT IS THE QUESTION



LABIA MINORA

**NOT** keratinized stratified squamous epithelium  
(Mucosa)

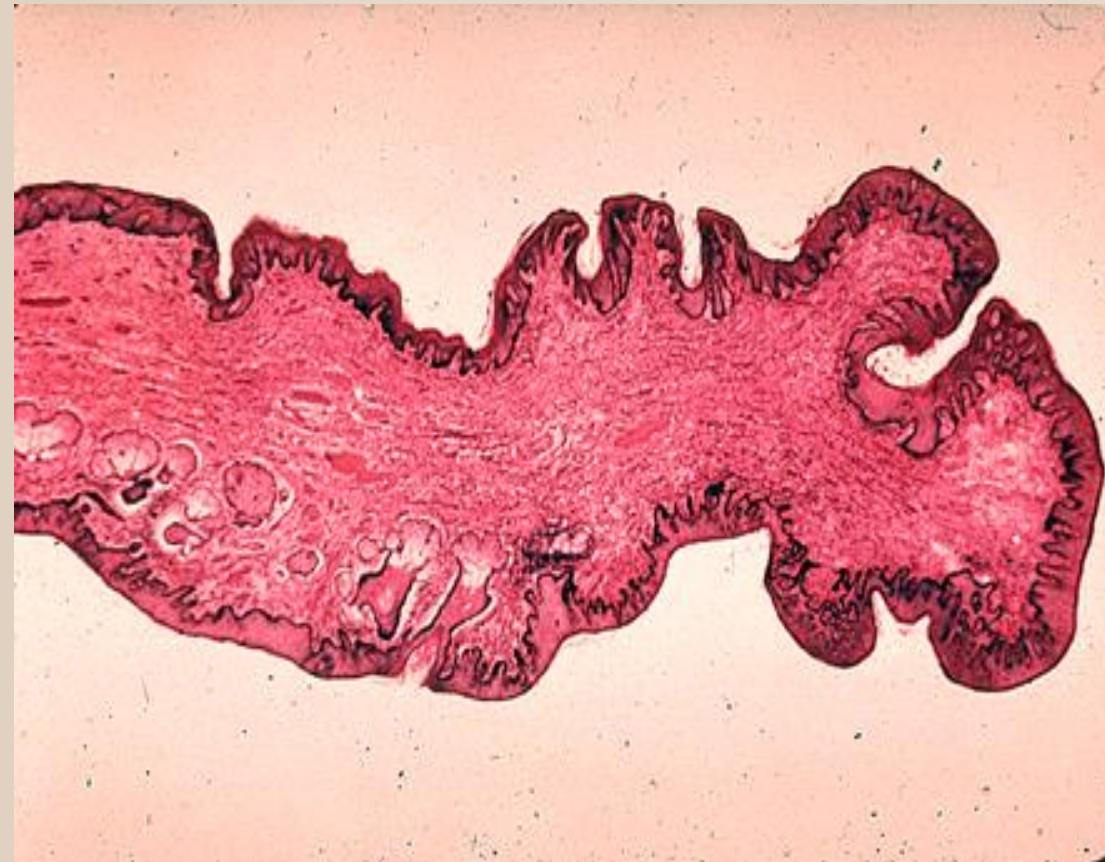
CLITORIS

LABIA MINORA

VESTIBULE

ANUS

VAGINA



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

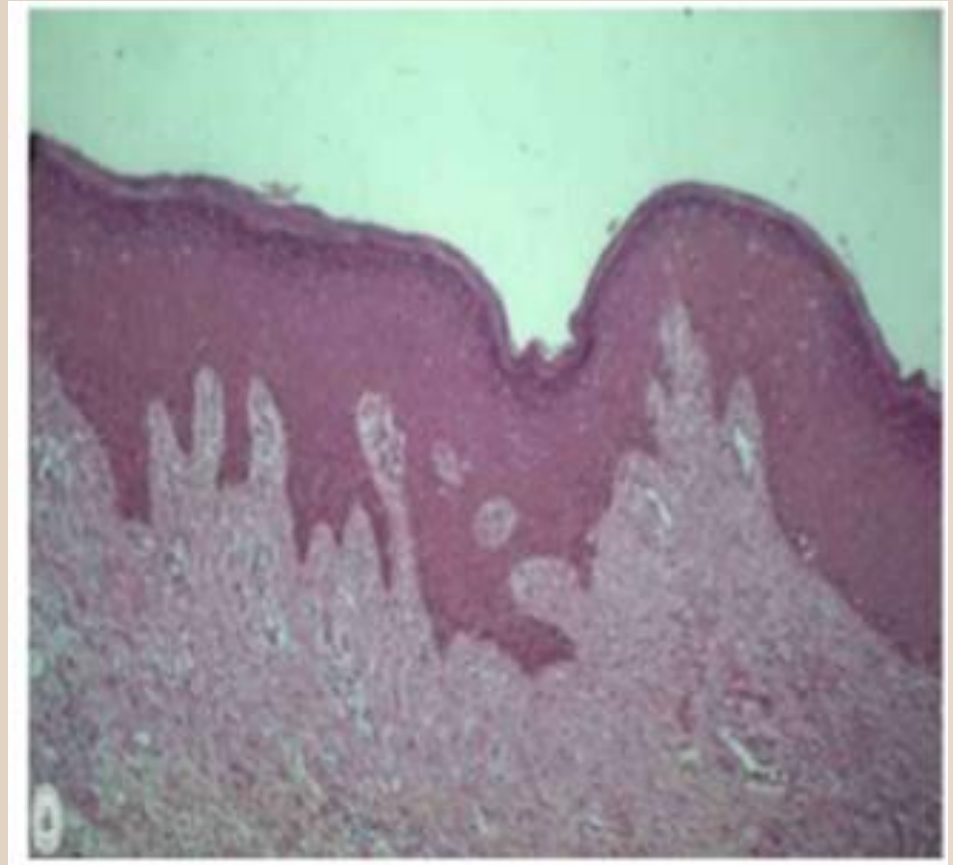
LABIA MINORA

VESTIBULE

ANUS

VAGINA

VESTIBULE



No hair follicles are observed in this section

# TO PEEL OR NOT TO PEEL THAT IS THE QUESTION



RECTUM

**NOT** keratinized stratified squamous epithelium  
(Mucosa)

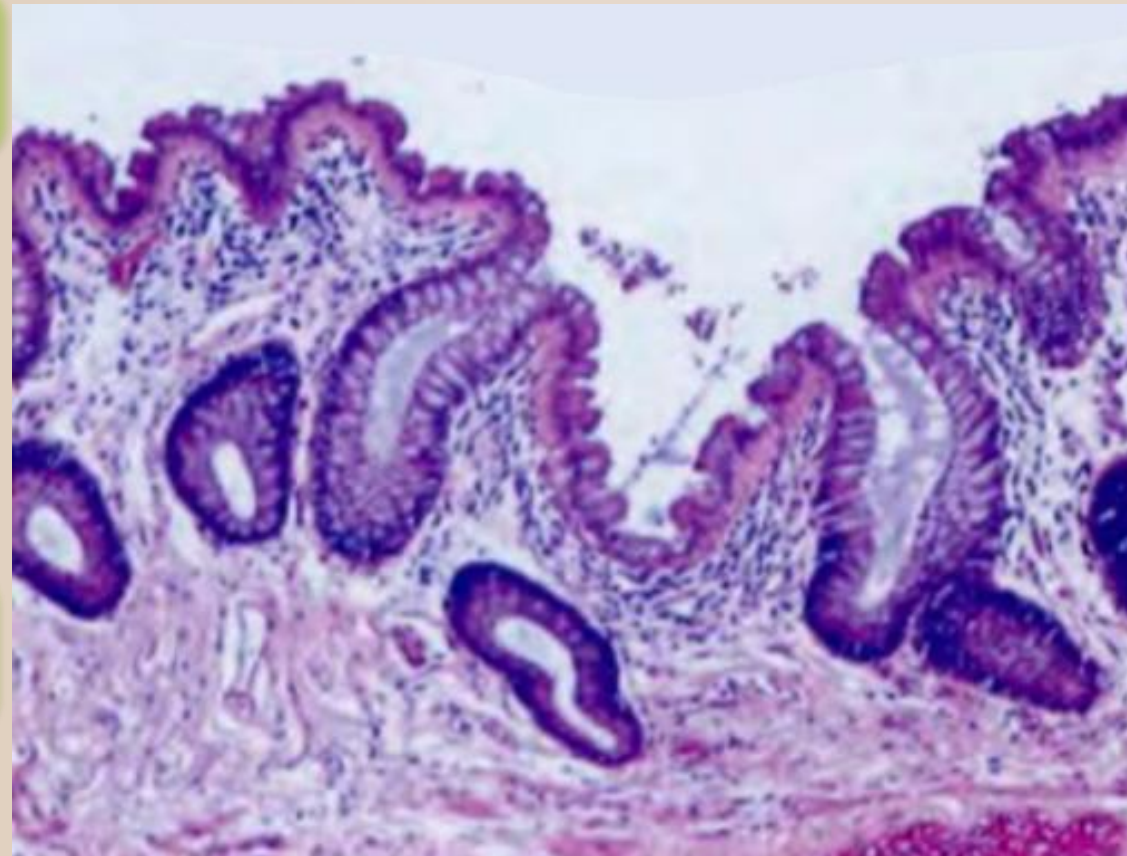
CLITORIS

LABIA MINORA

VESTIBULE

ANUS

VAGINA



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

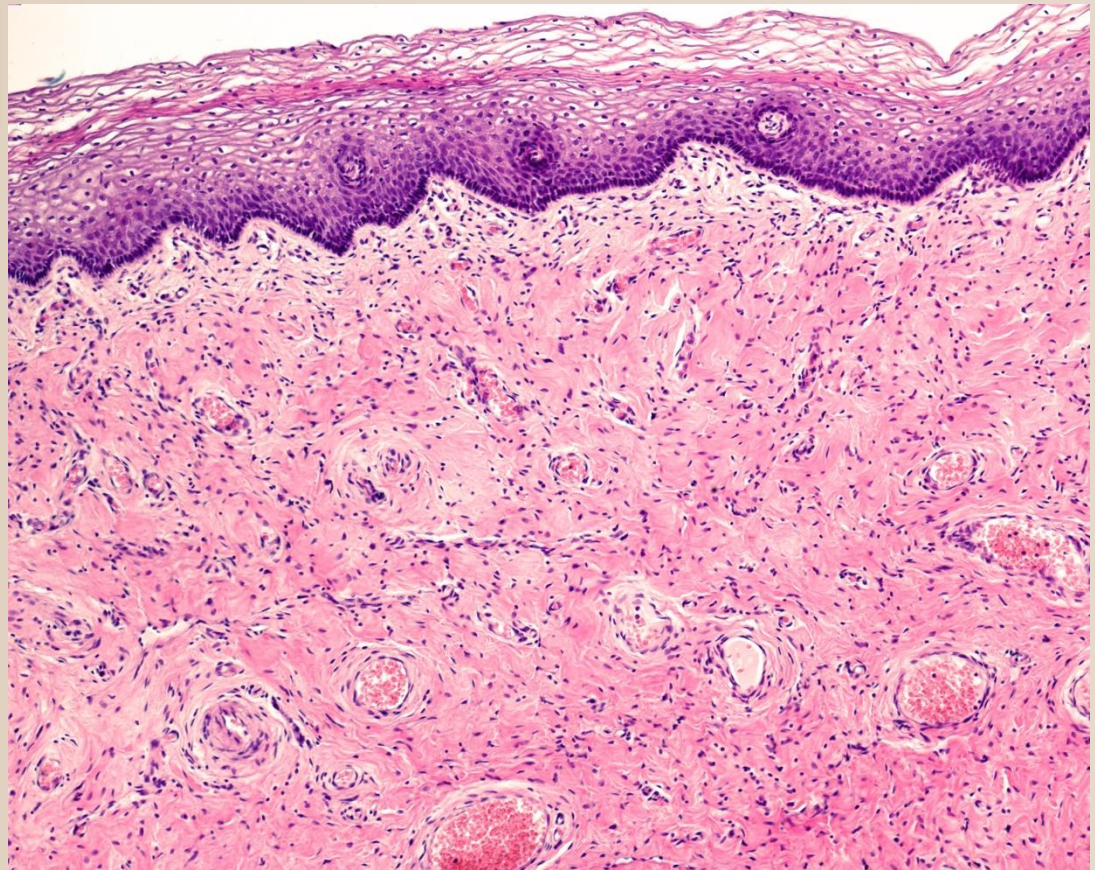
LABIA MINORA

VESTIBULE

ANUS

VAGINA

VAGINA



No hair follicles are observed in this section



# TO PEEL OR NOT TO PEEL THAT IS THE QUESTION



keratinized stratified squamous epithelium

MONS PUBIS

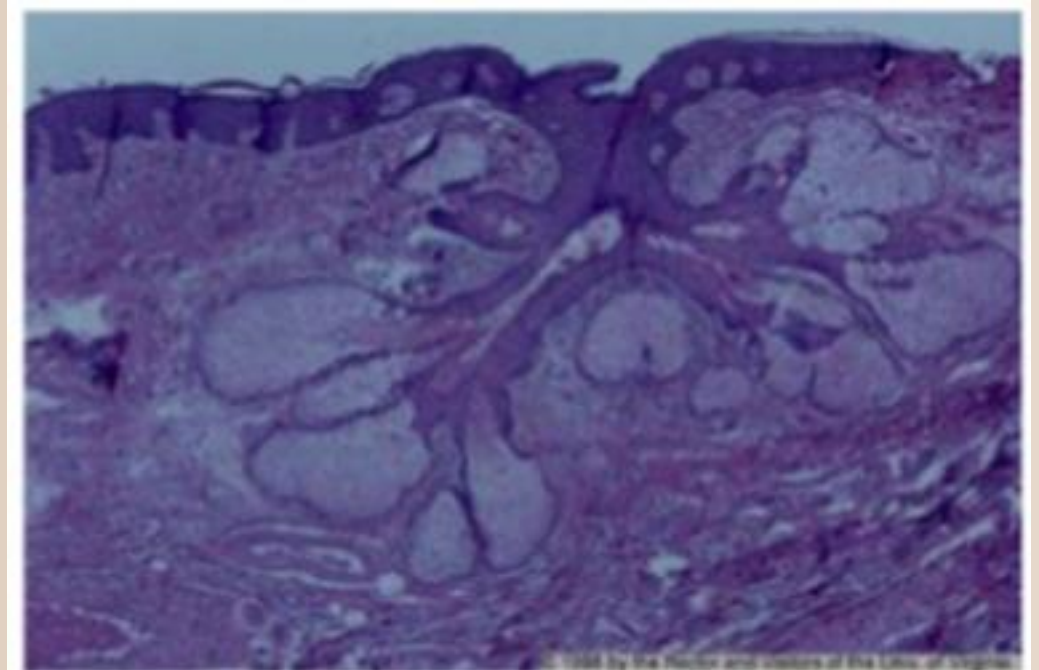
LABIA MAJORA

EXTERNAL ANAL MARGIN

PERIANAL AREA

INNER THIGHS

MONS PUBIS



Hair follicles are observed in this section



# TO PEEL OR NOT TO PEEL THAT IS THE QUESTION



keratinized stratified squamous epithelium

MONS PUBIS

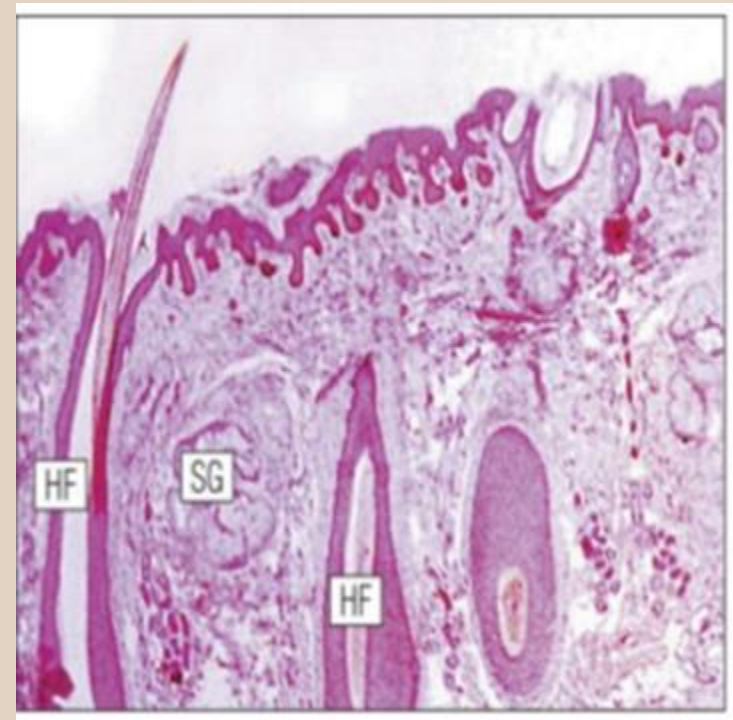
LABIA MAJORA

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



keratinized stratified squamous epithelium

MONS PUBIS

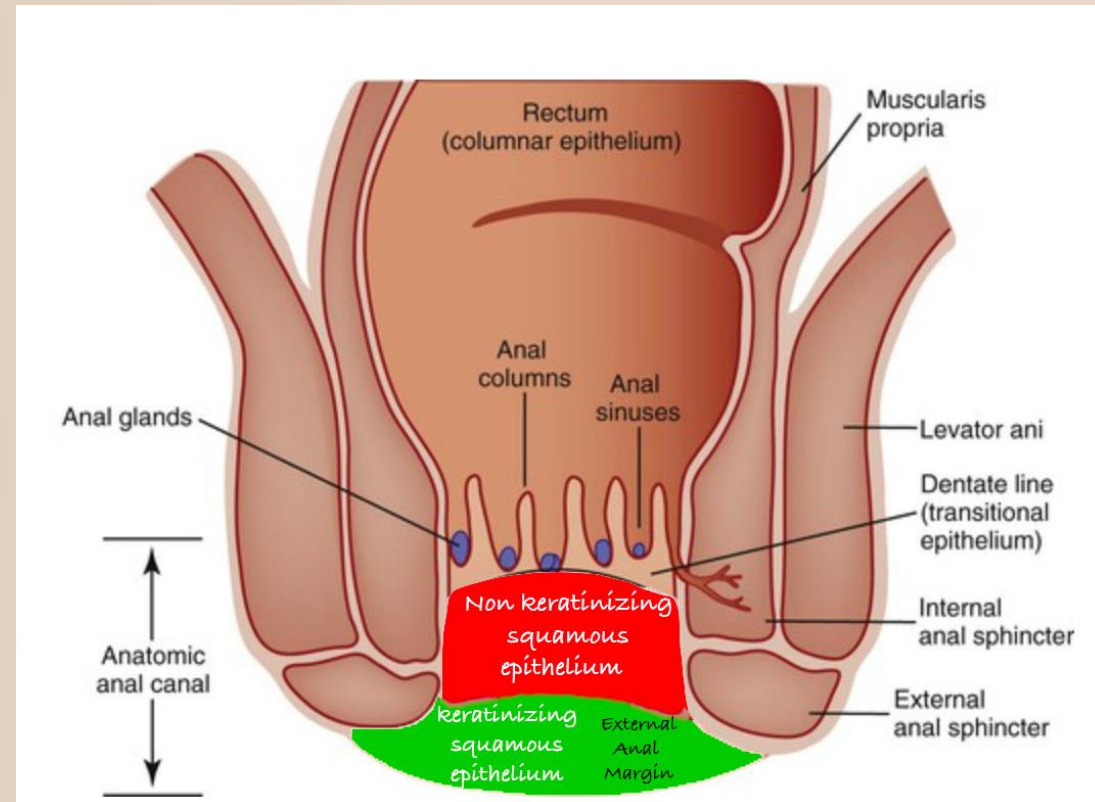
LABIA MAJORA

EXTERNAL ANAL MARGIN

PERIANAL AREA

INNER THIGHS

## EXTERNAL ANAL MARGIN TRANSITION AREA



# TO PEEL OR NOT TO PEEL THAT IS THE QUESTION



keratinized stratified squamous epithelium

MONS PUBIS

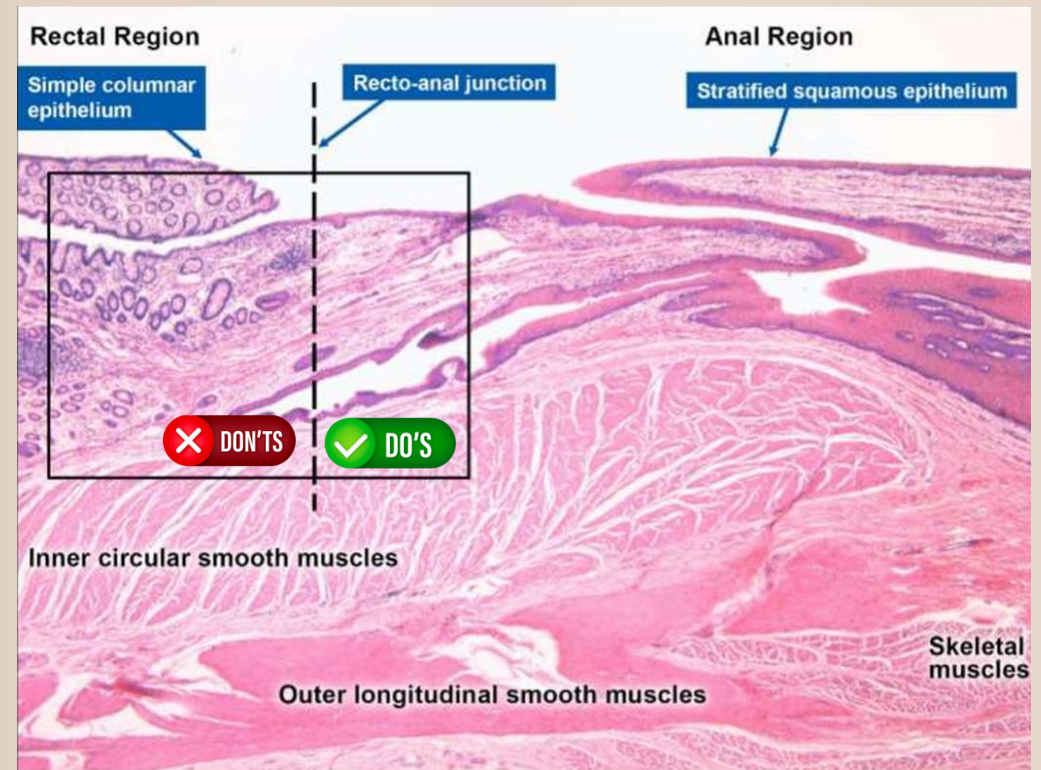
LABIA MAJORA

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



keratinized stratified squamous epithelium

MONS PUBIS

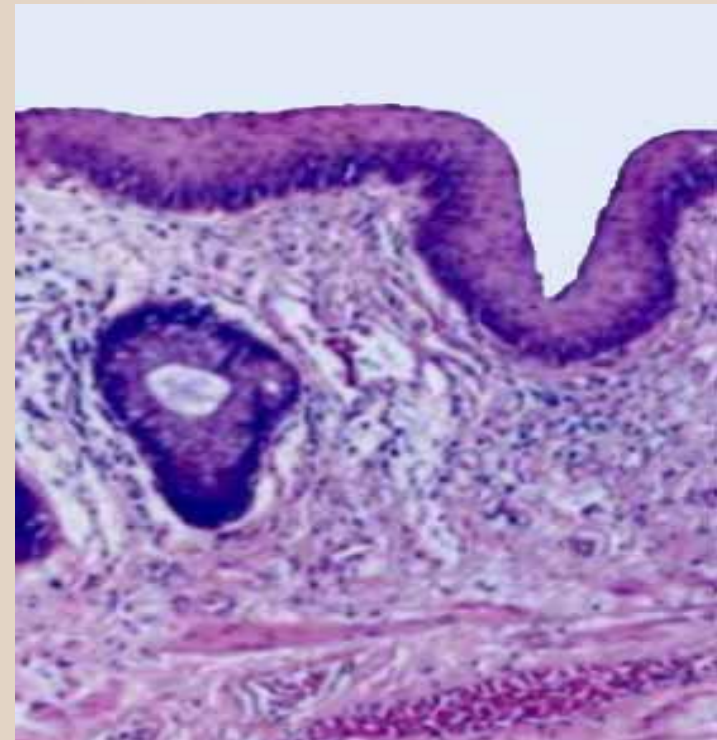
LABIA MAJORA

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

# Concepts of A.Tenenbaum & M.Tiziani

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

A red rectangular box with a white horizontal band in the center. The word "COLORKILLER" is written in white capital letters on the red background.

COLORKILLER

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

A close-up photograph of a person's face, showing a white, frost-like substance applied to the cheek. The text "WHITE FROSTING" is visible at the top of the image.

WHITE FROSTING

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

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

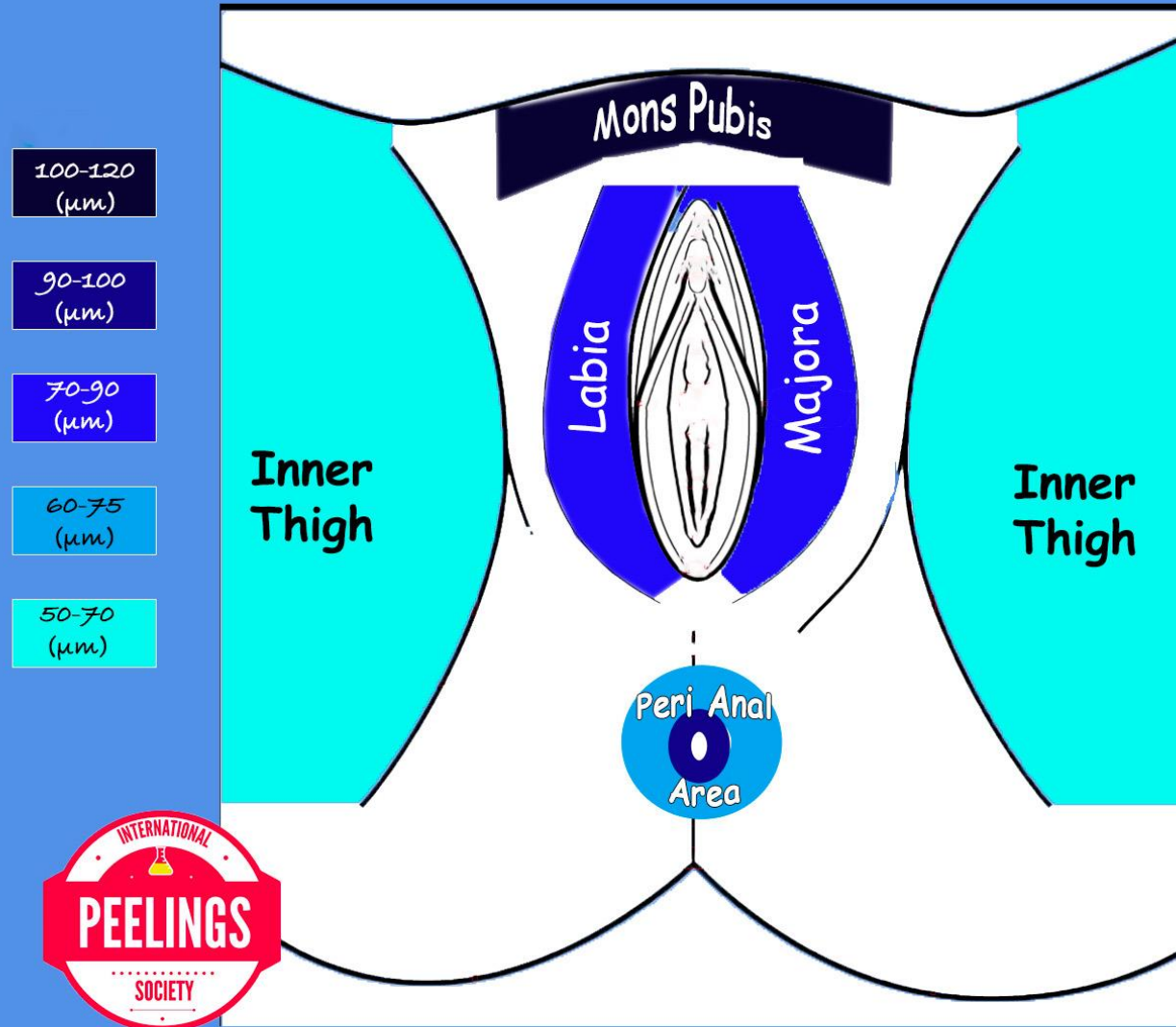
**1 + 2 = Aggressive Treatment with Downtime**

*(Protocol by A. Tenenbaum)*

**2 = Gentle Treatment Without Downtime**

*(Protocol by M. Tiziani)*

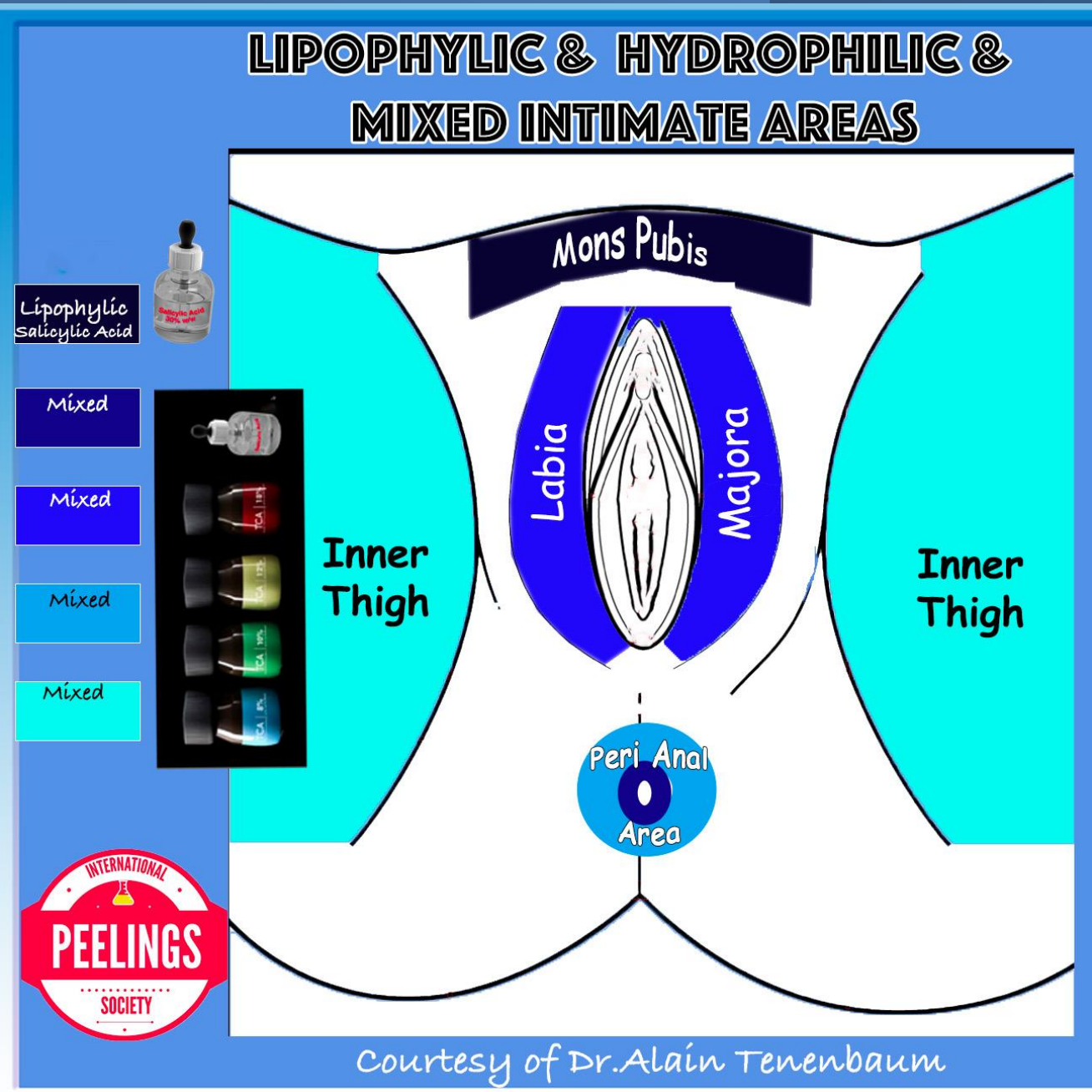
## EPIDERMAL THICKNESS OF INTIMATE AREAS



Courtesy of Dr. Alain Tenenbaum

## 1.Targeting the pigment directly

Or the „ColorKiller,, of A.Tenenbaum





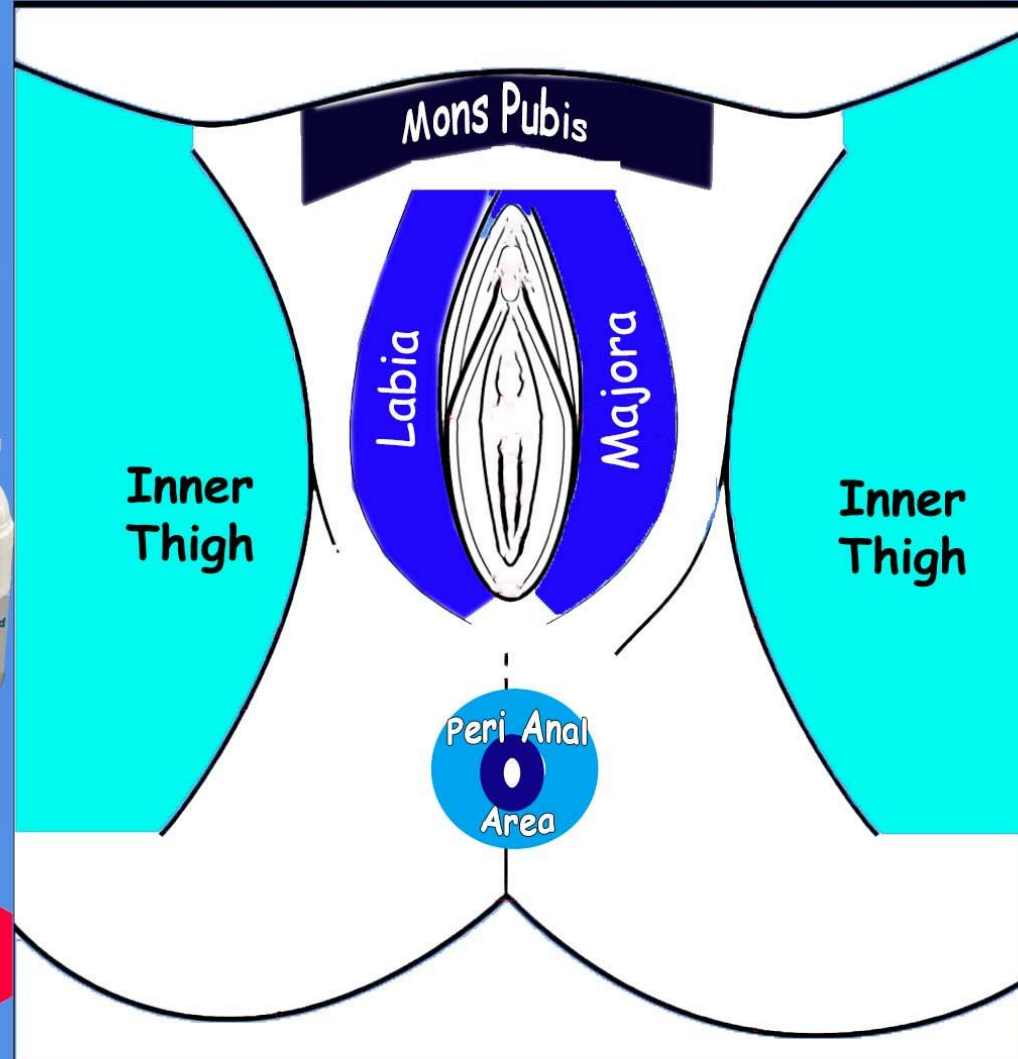
Targeting the pigment directly  
Or the „ColorKiller,, of A.Tenenbaum

# Which Salicylic Acid to use ?

## Comparison of Salicylic Acids

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

## SALICYLIC ACIDS IN ETHANOL VS GLYCEROL FOR INTIMATE AREAS



Courtesy of Dr. Alain Tenenbaum

## HYPERPIGMENTATION OF FEMALE GENITAL SKIN



*Courtesy of Dr. Alain Tenenbaum*

**Targeting the pigment directly**  
Or the „ColorKiller,, of A.Tenenbaum

## INITIAL APPEARANCE OF WHITE ( PSEUDO) FROSTING ON THE LABIA MAJORA



*Courtesy of Dr. Alain Tenenbaum*



# Protocols

## Attack Treatment Only if made by MD

- TCA at 10-12-15-18% w/w
- In liquids
- Or Ideally in Creams
- Salicylic Acid 25% w/w
- Ideally in ALCOHOL OR GLYCEROL

## Maintenance Treatment Home care and/or Paramedical Team

- Use only Specific Creams

# Which acids can be used for maintenance

Acids	Mandelic	<i>Glycolic</i>	Lactic	Azelaic	Kojic	Phytic
Action	Promotes surface lifting of excess pigment	NO Dispersion of Melanin in basal membrane layer  <b>IRRELEVANT</b>	Skin Lightening ???  Not bleaching agent <b>IRRELEVANT</b>	Skin Lightening	Tyrosinase Inhibitor	Melanin formation blocker though chelation ??? <b>IRRELEVANT</b>
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						

# Fitzpatrick Scale and Intimate Area

## The Fitzpatrick Scale

					
<b>TYPE I</b> Light, pale white Always burns, never tans	<b>TYPE II</b> White, fair Usually burns, tans with difficulty	<b>TYPE III</b> Medium, white to olive Sometimes mild burn, gradually tans to olive	<b>TYPE IV</b> Olive, moderate brown Rarely burns, tans with ease to a moderate brown	<b>TYPE V</b> Brown, dark brown Very rarely burns, tans very easily	<b>TYPE VI</b> Black, very dark brown to black Never burns, tans very easily, deeply pigmented

The Fitzpatrick Scale					
					
TYPE I Light, pale white Always burns, never tans	TYPE II White, fair Usually burns, tans with difficulty	TYPE III Medium, white to olive Sometimes mild burn, gradually tans to olive	TYPE IV Olive, moderate brown Rarely burns, tans with ease to moderate ease	TYPE V Brown, dark brown Very rarely burns, tans very easily	TYPE VI Black, very dark brown to black Never burns, tans very easily, deeply pigmented

## Male Perianal Area Phototype 3/4

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

### PERIANAL SKIN HYPERPIGMENTATION



COURTESY OF DR. ALAIN TENENBAUM



# 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.

# 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.

# Concepts of A.Tenenbaum & M.Tiziani

## External Anal Margin & Peri Anal Area

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

A red rectangular box with a white horizontal band in the center containing the word "COLORKILLER" in blue capital letters.

COLORKILLER

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

A close-up of a person's face with a white frosting-like product applied to the cheek. A small circular logo in the bottom left corner says "PEELINGS" and "HAIR".

WHITE FROSTING

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

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A close-up photograph of a person's face, showing a white, frost-like substance applied to the cheek. The person's eyes are closed. A small circular logo in the bottom left corner reads "WHITE FROSTING" and "PEELINGS".

WHITE FROSTING

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

### Attack Treatment Protocol for Peri Anal Area



- 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

A horizontal blue double-headed arrow pointing left and right.

### Attack Treatment Protocol for External Anal Margin



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



# Bleaching Set for Maintenance

## For Intime Area

### Actions from XS to De Luxe



#### Set Bleaching

- **fotocosm XS 50 ml** arbutin-kojic acid
- **fotocosm S 50 ml** arbutin-kojic acid-tranxenamic acid
- **fotocosm L 50 ml** arbutin-kojic acid-double concentrations
- **fotocosm XL 50 ml** arbutin-kojic acid-tranxenamic-double concentrations
- **fotocosm de luxe 50 ml** azelaic-tranxenamic-mandelic-phytic acids

<b>Anal Bleaching Timeline</b> <i>How long does it take to get your desired result?</i>						
Desired Skin Color						
	I Light, pale white	II White, fair	III Medium white to olive	IV Olive, mid brown	V Brown, dark brown	VI Very dark brown, black
Current Skin Color	VI Very dark brown, black	Fotocosm de Luxe	Fotocosm de Luxe	Fotocosm de Luxe	Fotocosm XL	Fotocosm L
	V Brown, dark brown	Fotocosm de Luxe	Fotocosm de Luxe	Fotocosm XL	Fotocosm L	
	IV Olive, mid brown	Fotocosm de Luxe	Fotocosm XL	Fotocosm L		
	III Medium white to olive	Fotocosm S	Fotocosm L			
	II White, fair	Fotocosm XS-S				
	I Light, pale white					













**Anal Bleaching Guide**

## Anal Bleaching Timeline

*How long does it take to get your desired result?*

### Desired Skin Color

### Current Skin Color

	 I Light, pale white	 II White, fair	 III Medium white to olive	 IV Olive, mid brown	 V Brown, dark brown	 VI Very dark brown, black
 VI	14-16 weeks	12-14 weeks	10-12 weeks	8-10 weeks	6-8 weeks	
 V	10-12 weeks	8-10 weeks	6-8 weeks	4-6 weeks		
 IV	8-10 weeks	6-8 weeks	4-6 weeks			
 III	6-8 weeks	4-6 weeks				
 II	4-6 weeks					
 I						

Attack Treatment :  
1 Session each 2 Weeks

Maintenance Treatment  
1 x time / day / nr of weeks as  
mentioned in this table

Anal Bleaching **Guide**

# MAINTENANCE Treatment Protocol

		Desired Skin Color					
		I	II	III	IV	V	VI
		Light, pale white	White, fair	Medium white to olive	Olive, mid brown	Brown, dark brown	Very dark brown, black
Current Skin Color	VI	14-16 weeks	12-14 weeks	10-12 weeks	8-10 weeks	6-8 weeks	
	V	10-12 weeks	8-10 weeks	6-8 weeks	4-6 weeks		
	IV	8-10 weeks	6-8 weeks	4-6 weeks			
	III	6-8 weeks	4-6 weeks	Maintenance Treatment 1 x time / day / nr of weeks as mentioned in this table			
	II	4-6 weeks					
	I						
		Maintenance Duration					

		Desired Skin Color					
		I	II	III	IV	V	VI
		Light, pale white	White, fair	Medium white to olive	Olive, mid brown	Brown, dark brown	Very dark brown, black
Current Skin Color	VI	Fotocosm de Luxe	Fotocosm de Luxe	Fotocosm de Luxe	Fotocosm XL	Fotocosm L	
	V	Fotocosm de Luxe	Fotocosm de Luxe	Fotocosm XL	Fotocosm L		
	IV	Fotocosm de Luxe	Fotocosm XL	Fotocosm L			
	III	Fotocosm S	Fotocosm L				
	II	Fotocosm XS-S					
	I						
		MAINTENANCE					



## 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





The real  
challenge is  
to convince  
Armenians  
as Middle  
East MD





FREQUENTED  
ASKED QUESTIONS

## Combination Endopeel + Metabolic Peels for Face Anti Aging



Left Hemiface treated      Hand untreated

Courtesy of Dr. Alain Tenenbaum & Mauro Tiziani

Treatment of Acne on Teenager Caucasian Male  
PrePeel + TCA 10% w/w + Lipoic Acid

BEFORE



AFTER 7 DAYS

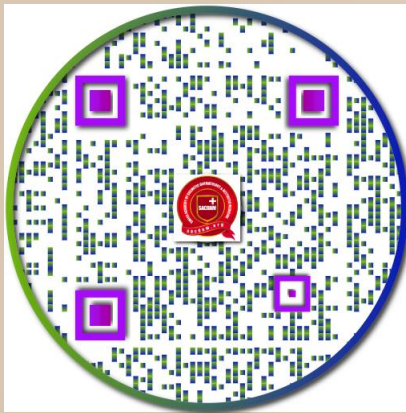


Courtesy of Mauro Tiziani









# Next Workshops in Zürich



**WORKSHOP PEELS**  
**ZÜRICH-SWITZERLAND :**  
**SEPTEMBER 19TH : 2 PM-6 PM**

Deadline for Registration : August 20 th

WITH  
**MAURO TIZIANI**  
**DR. ALAIN TENENBAUM**

<https://aesthetic.events/workshop-metabolic-peels-zurich-2025>

QR code in top left corner. QR code in top right corner with 'SCAN ME' text. Vertical row of four heart-shaped flags (USA, Germany, France, Italy) on the right side.



**WORKSHOP**  
**ENDOPEEL PREPARES YOUR FACE FOR YOUR AUTUMN**  
**ZÜRICH-SWITZERLAND : SEPTEMBER 20TH, 9 AM-6 PM**

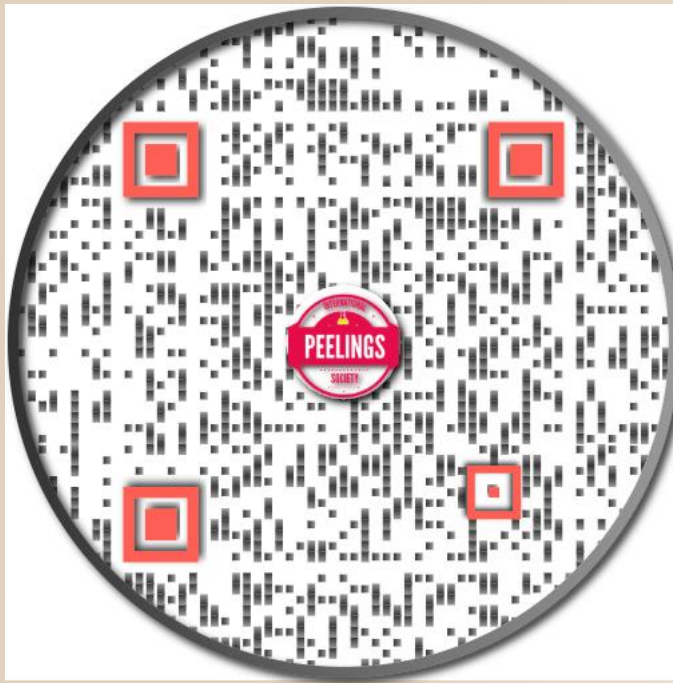
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WITH  
**MAURO TIZIANI**  
**DR. ALAIN TENENBAUM**

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QR code in bottom left corner. QR code in top right corner with 'SCAN ME' text. Vertical row of four heart-shaped flags (USA, Germany, France, Italy) on the right side.





## Peels COURSE

Its time to wake up



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