

The Phenomenon of Sensitive Skin



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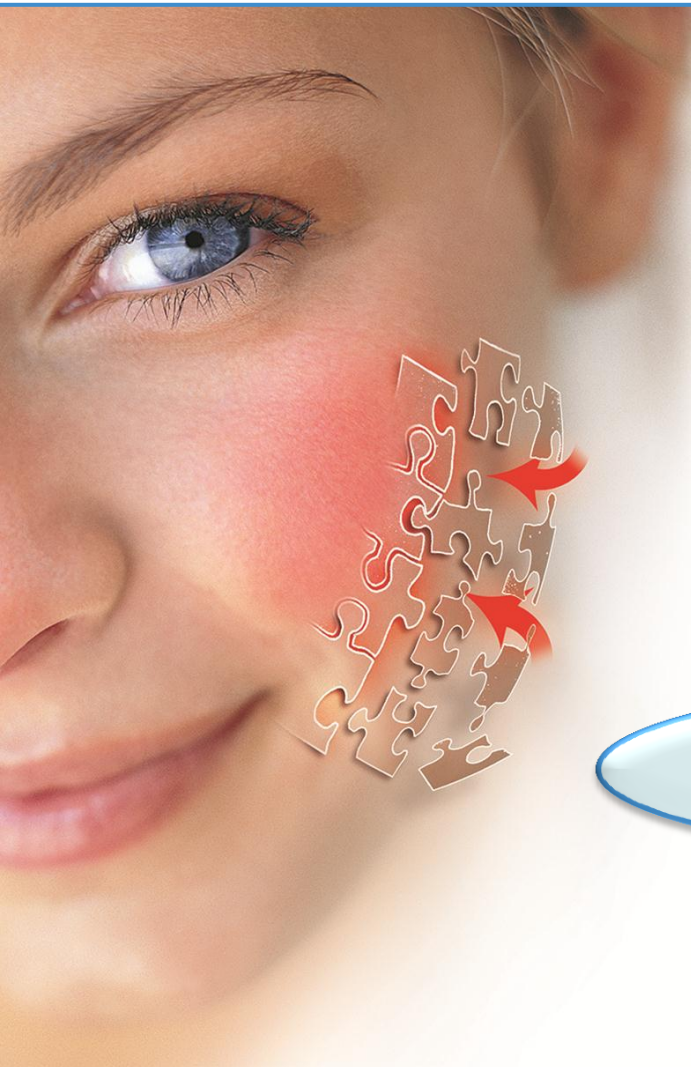


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Consumer Perception



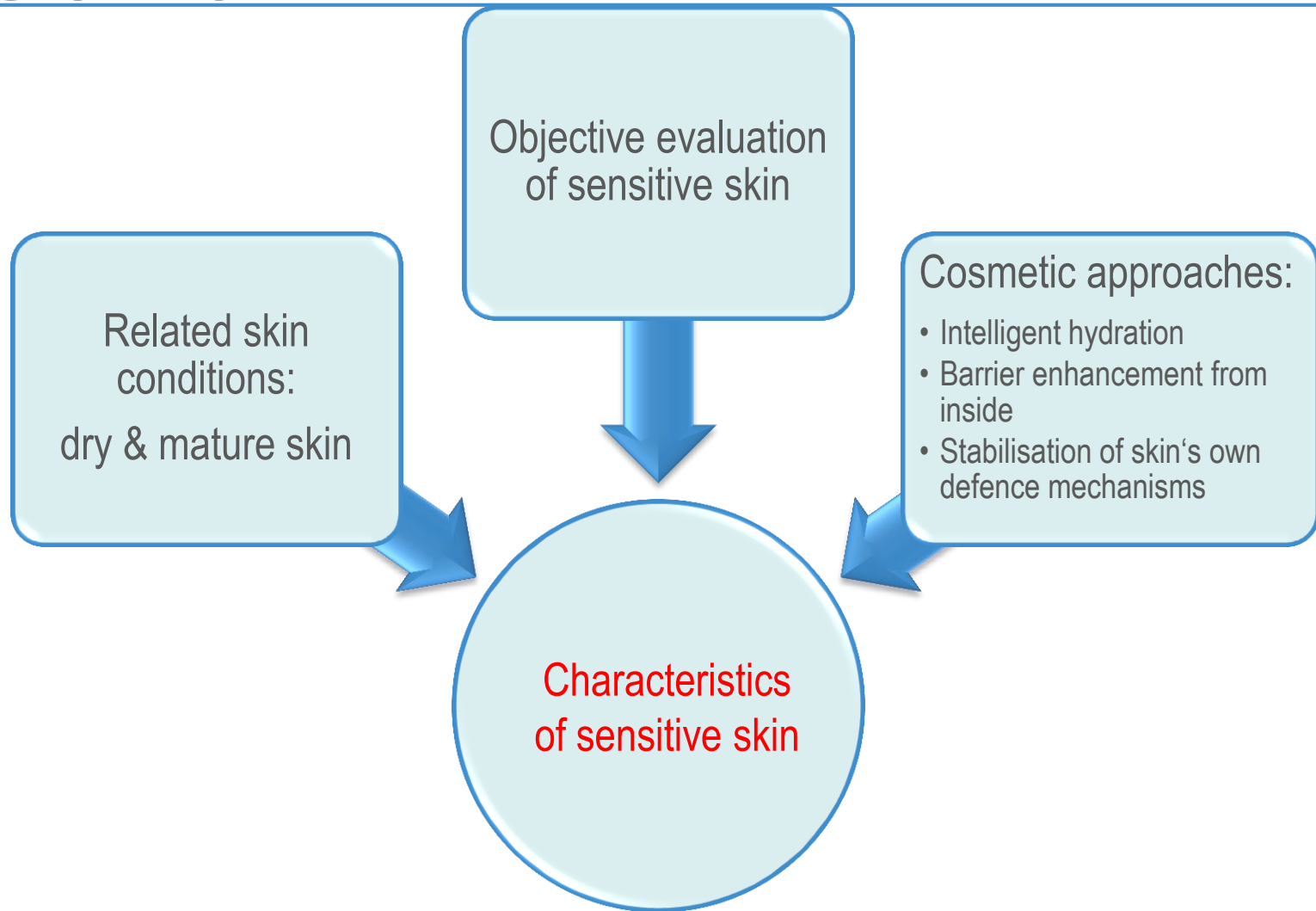
« My feeling is that my skin is becoming more sensitive »

36% agree entirely or preponderantly
(Brigitte Kommunikationsanalyse 2012)

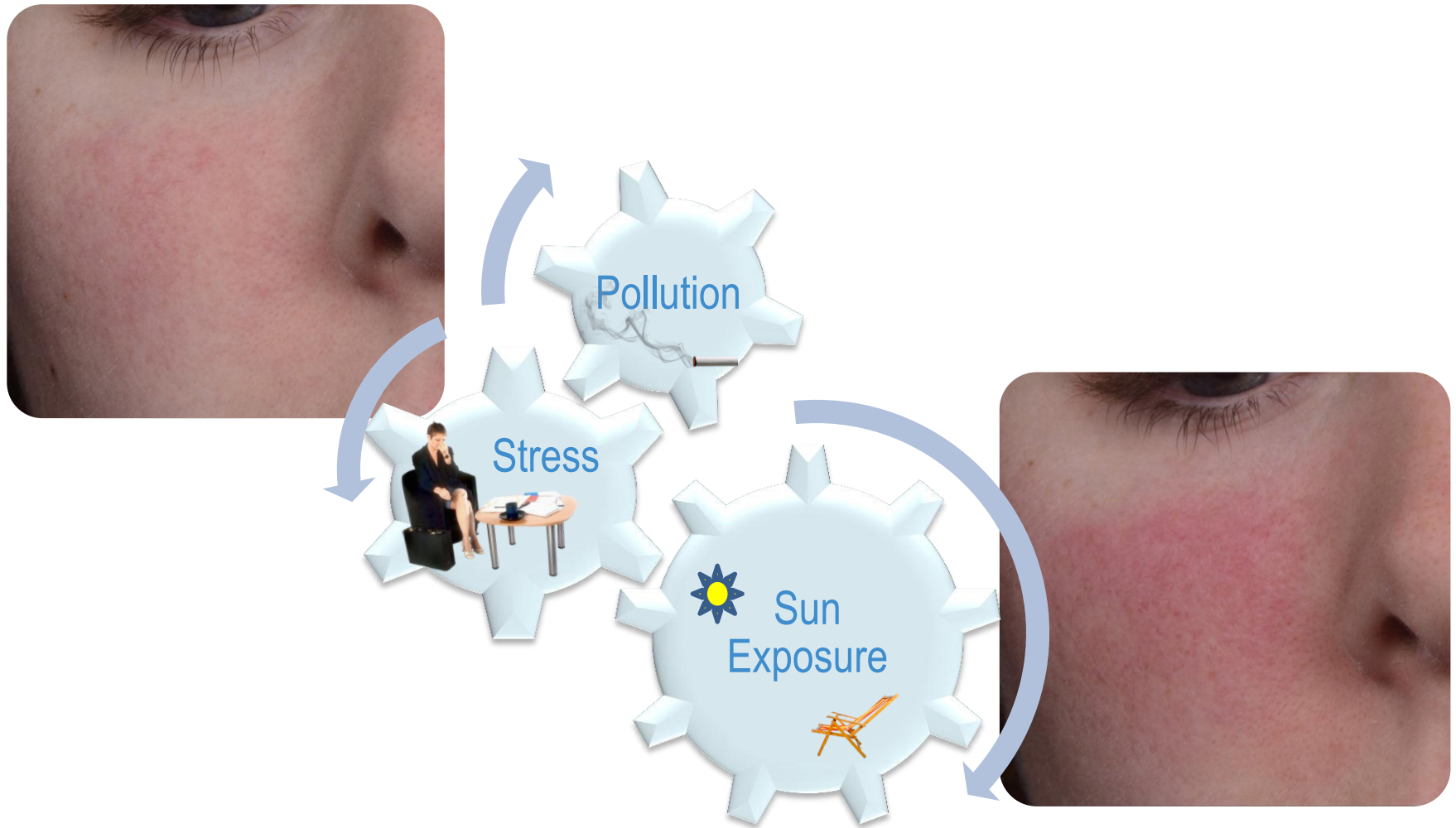
50% of women and **30%** of men claim to be affected

(Expression Cosmétique N°25 Janvier/Février 2014)

Content



Sensitive Skin - External Factors



Sensitive Skin - Constitutional Factors

Sensitive skin

No universally agreed definition of sensitive skin!

Normal skin

Constitutional differences – recent findings:

Hyper-reactive skin tends

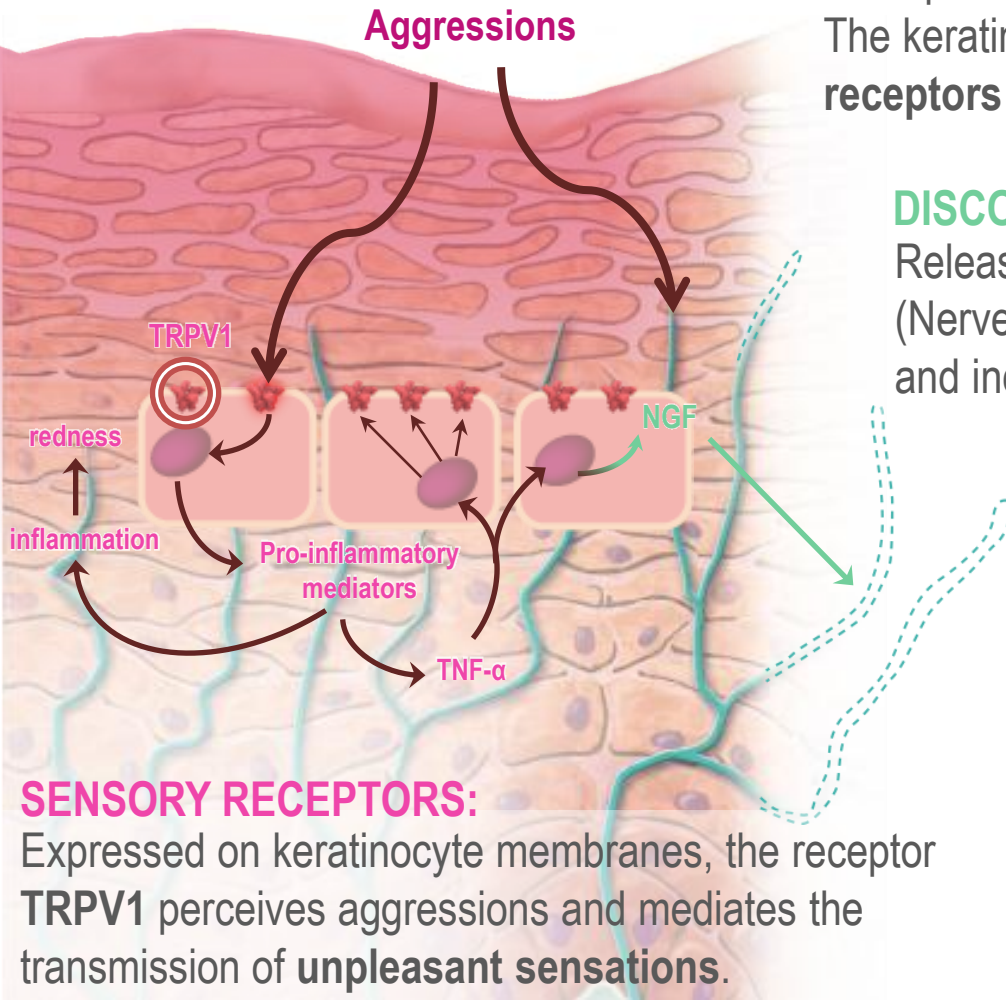
- To have a thinner or damaged *stratum corneum*
- To have corneocytes with reduced surface area leading to changes in intercellular lipids and moisture loss
- To have a higher level of innervation
- To exhibit more vascular reactivity

➡ Skin becomes more permeable to irritants

➡ Keratinocytes release more stress signals to epidermal nerve endings

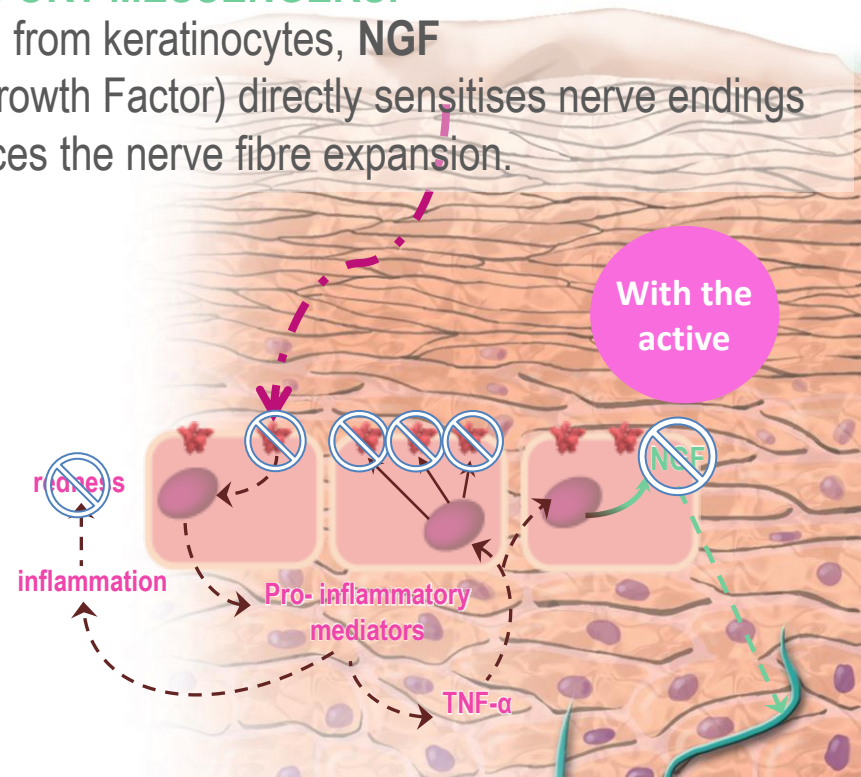
Sensitive Skin - The Epidermis

The epidermis is now recognised as a true sensory tissue. The keratinocytes interact with nerve fibres through **sensory receptors** and **discomfort messengers**.

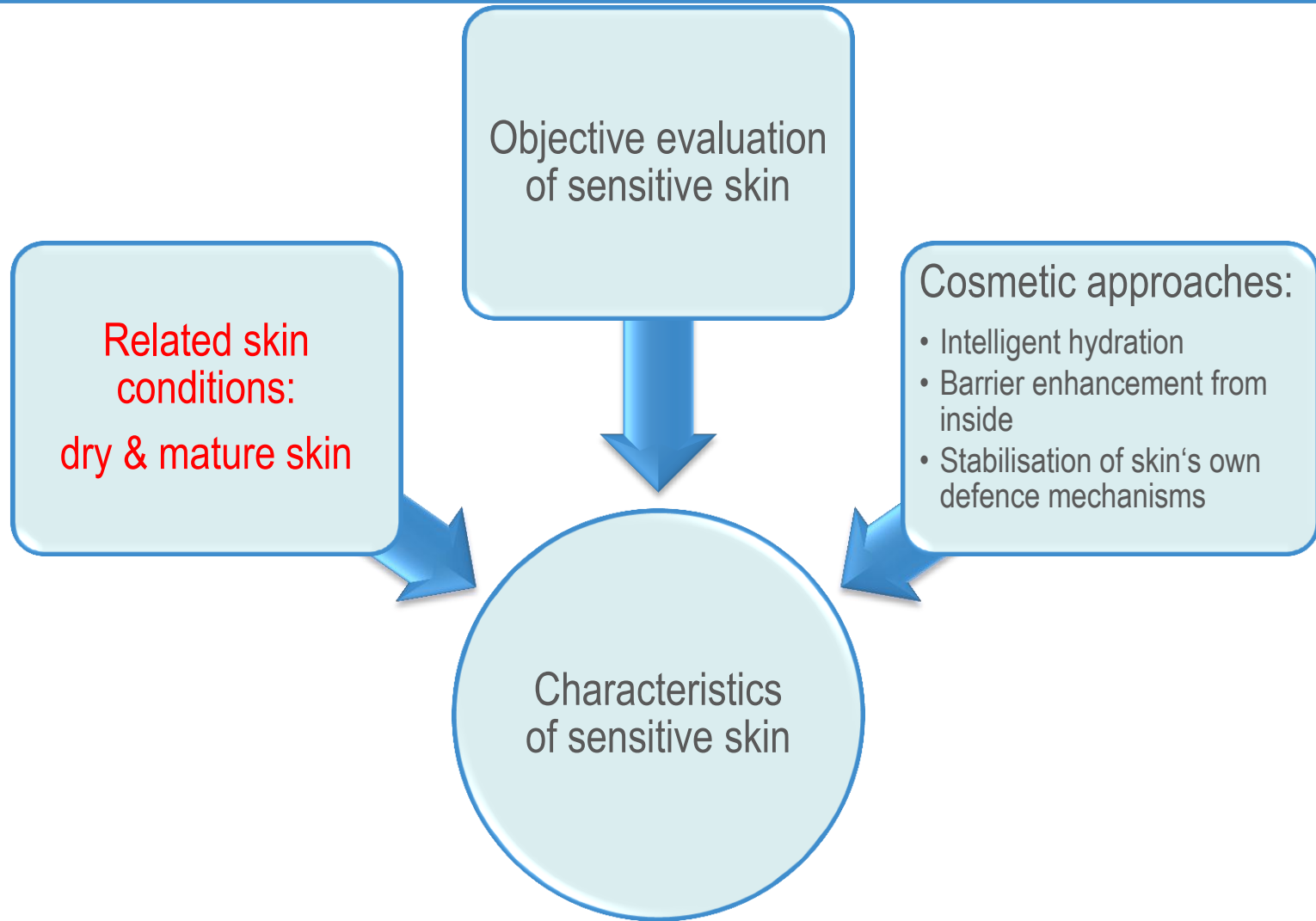


DISCOMFORT MESSENGERS:

Released from keratinocytes, **NGF** (Nerve Growth Factor) directly sensitises nerve endings and induces the nerve fibre expansion.



Content



Dry Skin - Characteristics

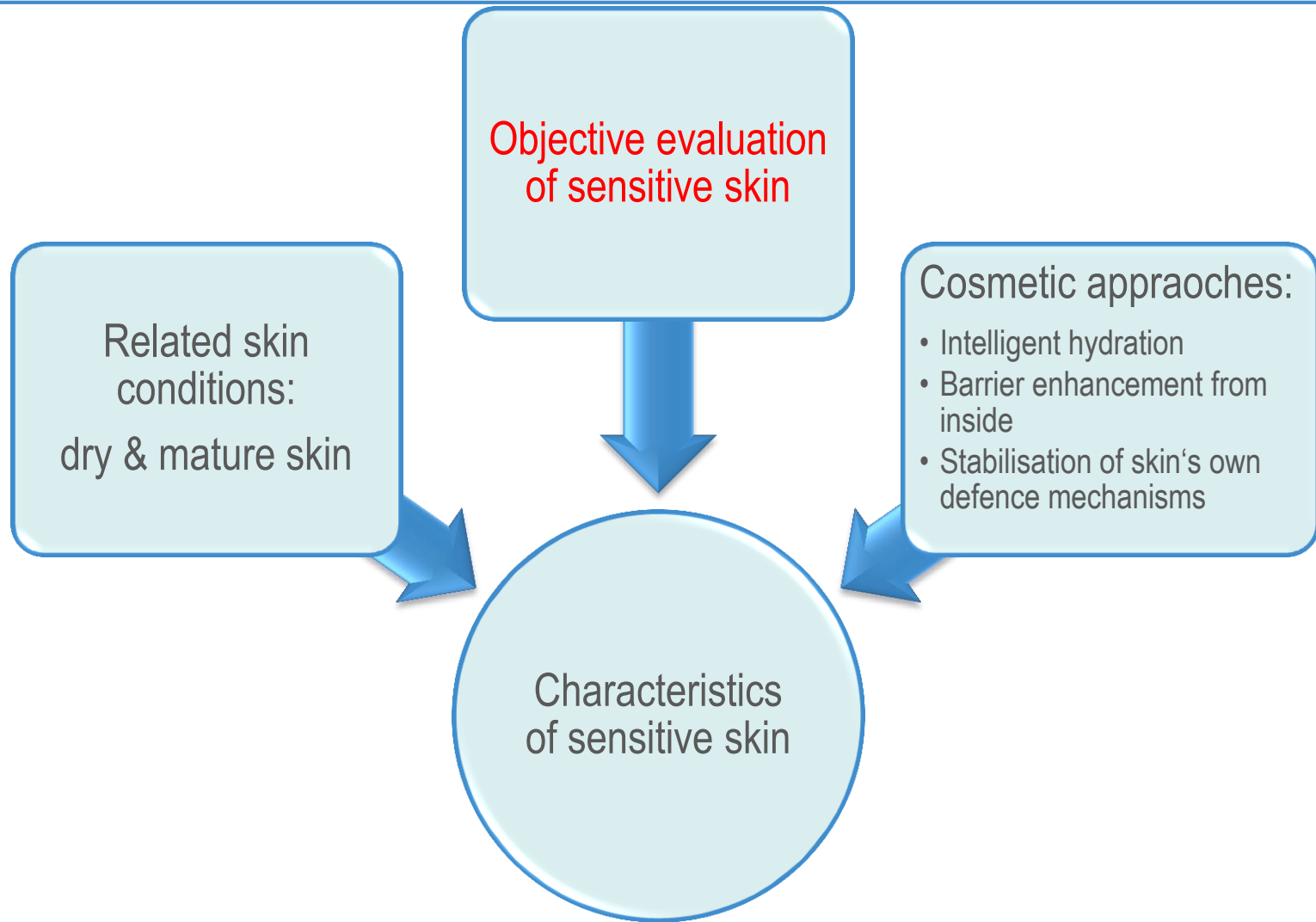
- Reduced amount of moisture, sphingolipids and total lipids
- Tendency to show scales and redness
- Tendency to inflammations
- Reacts more intensively than normal skin to external chemical and physical noxae
- Sensations of tension and itching
- Parchment-like appearance of the skin
- Formation of fine lines on rough skin

Source: German Society for Dermopharmacy

Mature Skin - Characteristics

- Wrinkle formation
- **Dryness**
- Decreased skin thickness
- Change of skin's colour
- **Hyper-reactivity**
- Loss of elasticity
- Telangiectasia (Spider veins)

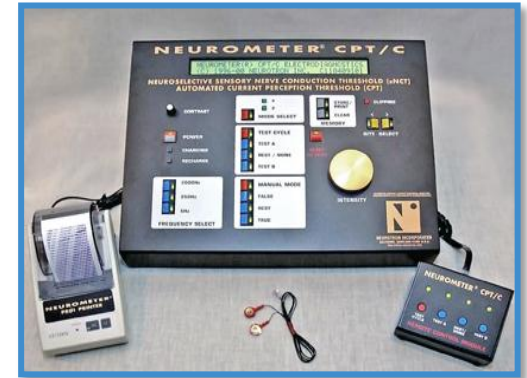
Content



Evaluation Techniques

Neurometer® - Measurement of the Current Perception Threshold

- Stimulation of nerve cells by delivering a small current to the skin until the volunteer detects something (entirely painless).
- This is the individual **Current Perception Threshold (CPT®)**.
- Perception of currents at a high level means a higher skin tolerance or less reactive skin.
- Low perception currents indicate a more reactive skin.



Conclusions from Neurometer® measurements:

- Pro-ageing stressing agents create an hyperexcitability of nerves endings.
 - ➡ **A threshold increase shows the neutralisation of these agents.**
- A damaged skin barrier enables penetration of possible irritants into the skin
 - ➡ **A threshold increase shows enhancement of the skin barrier's integrity.**

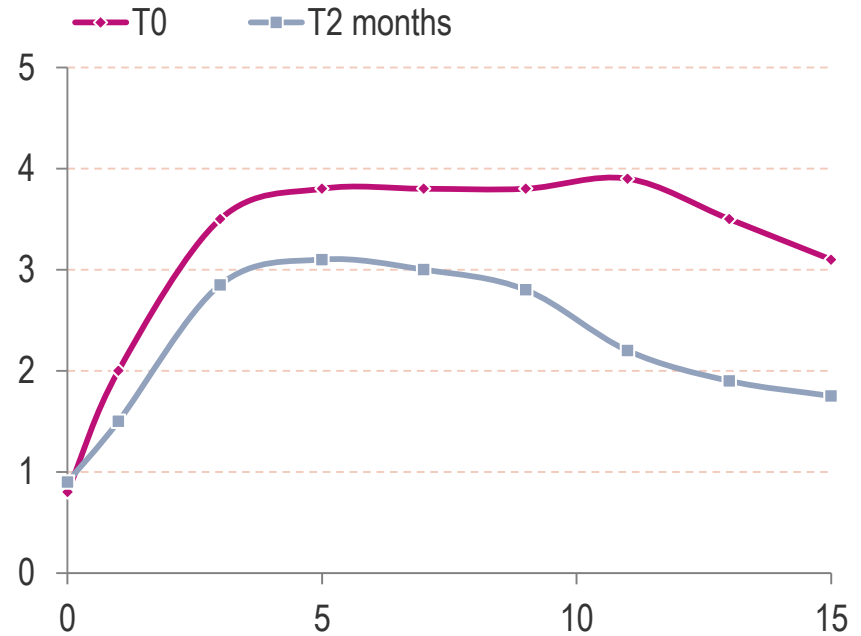
Evaluation Techniques

Decrease in skin reactivity (n=21)

Stinging Test at T0 and after 2 months application of eq. PACIFEEL™
Evaluation of the stinging sensation every minute with a 0 to 5 scale.

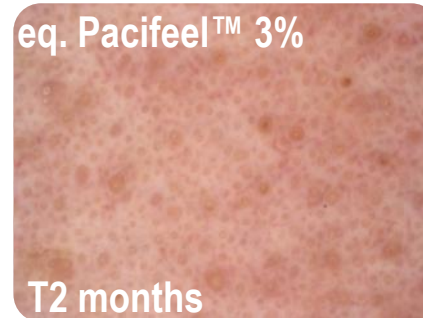
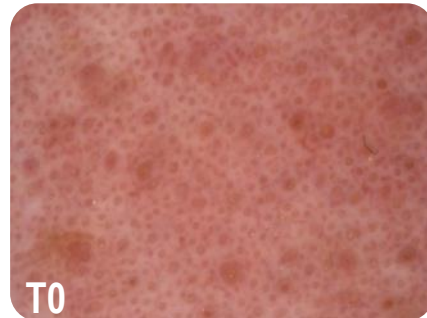


10% lactic acid solution application
on both sides of the face



Evaluation Techniques

Redness evaluation after Stinging Test



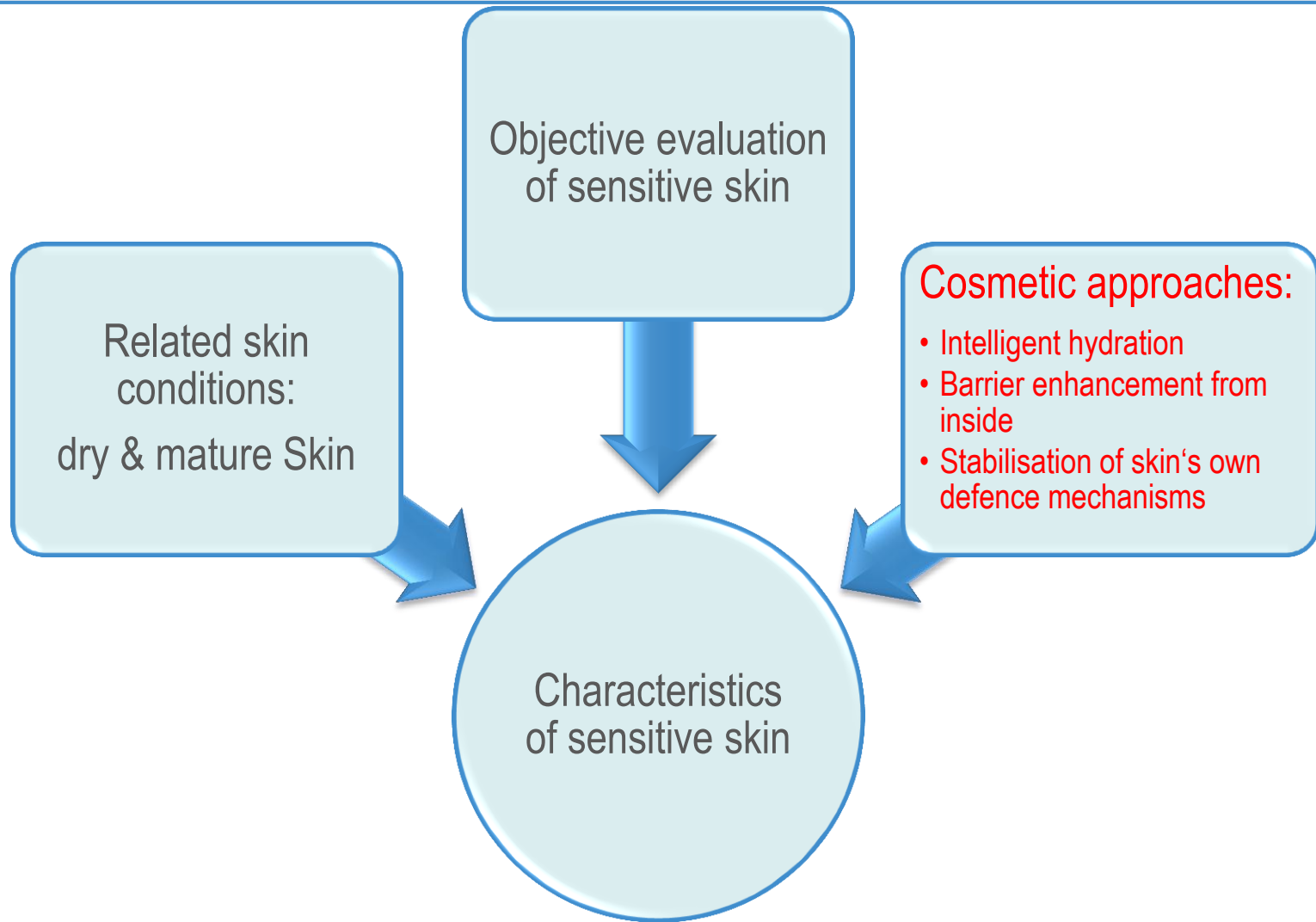
n = 21

Photos taken with digital camera

Red component analysis with ColorSkin software

Redness	eq. Pacifeel™ 3%	Placebo
Variation vs T0 (%)	-7,7%	-3.7%
Significance vs T0	p<0.01	ns
Maximum Responders	-27% 71%	
Significance vs placebo	p<0.05	

Content

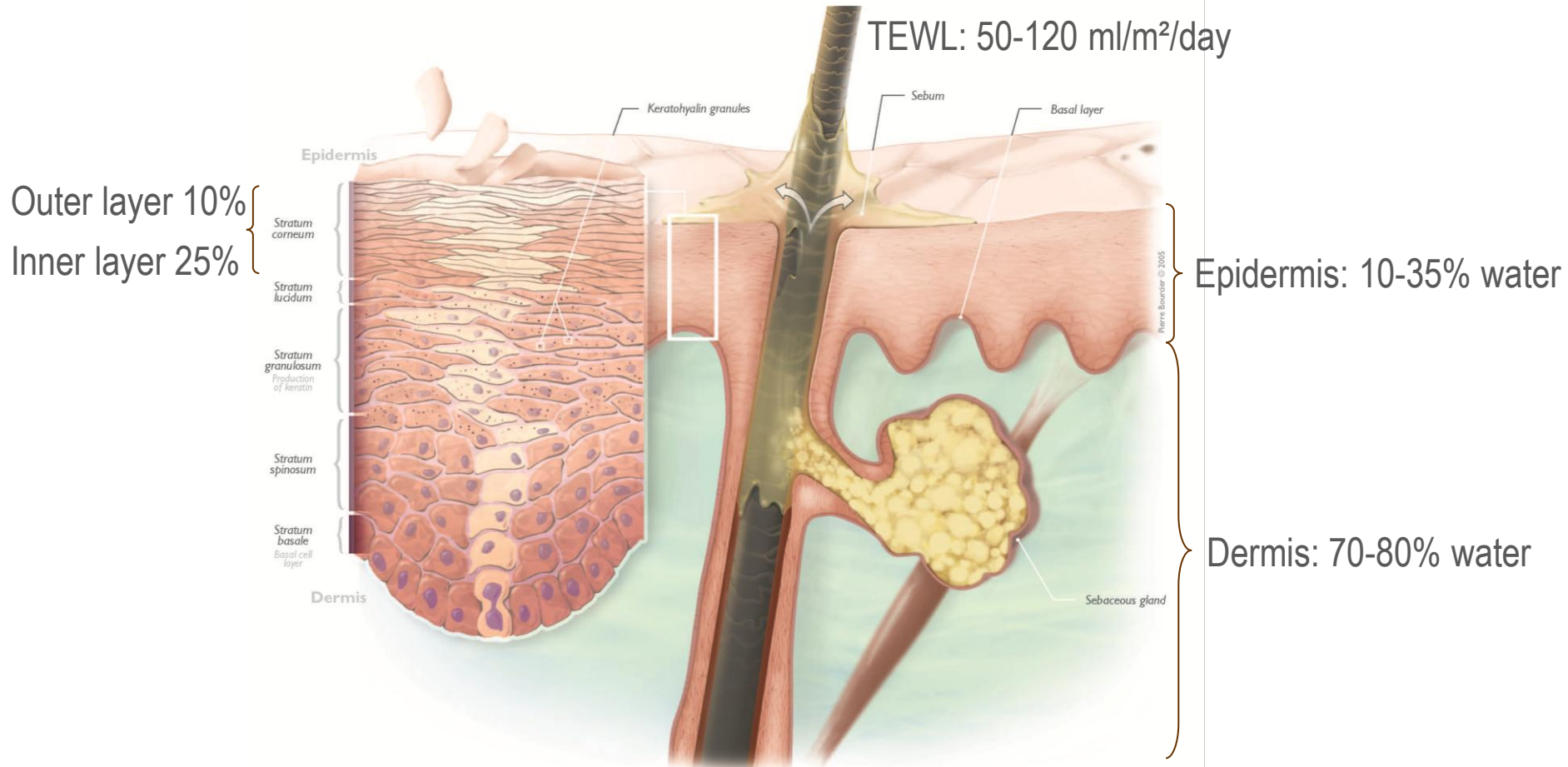


aqualance™

aqua feeling

**AQUAFILLING
UNDER
CONTROL**

Intelligent Hydration

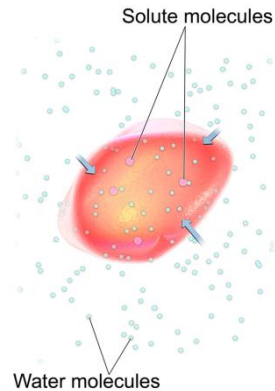


Intelligent Hydration



Osmoprotectant activity

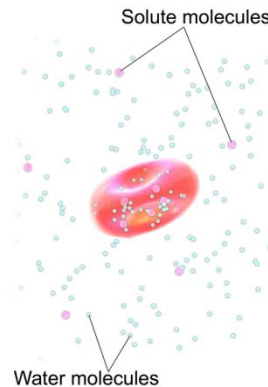
“Organic osmolytes are small solutes used by cells of numerous water-stressed organisms and tissues to maintain cell volume.”



Hypotonic Solution
(Osmotic Flow into Cell)

Osmotic Flow into the Cell

A red blood cell in a hypotonic solution, causing water to move into the cell.



Isotonic Solution
(No Osmotic Flow)

No Osmotic Flow

A red blood cell in an isotonic solution.



Hypertonic Solution
(Osmotic Flow out of Cell)

Osmotic Flow out of the Cell

A red blood cell in a hypertonic solution, causing water to move out of the cell.

Photograph sources: Blausen.com staff

Intelligent Hydration

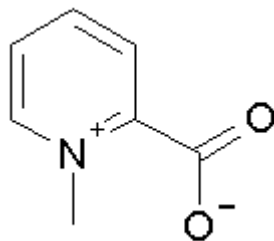


Microorganisms living in estuaries where freshwater meets seawater use osmolytes to protect themselves.

Their osmoprotectant systems can contain carbohydrates and aminoacids like mannitol, erythritol, betaine and homarine.

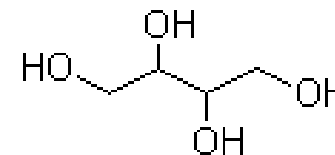
AQUALANCE™ contains an osmotic module to mimic estuary flora

HOMARINE



Compensates ion disequilibrium

ERYTHRITOL



Captures water molecules

Intelligent Hydration

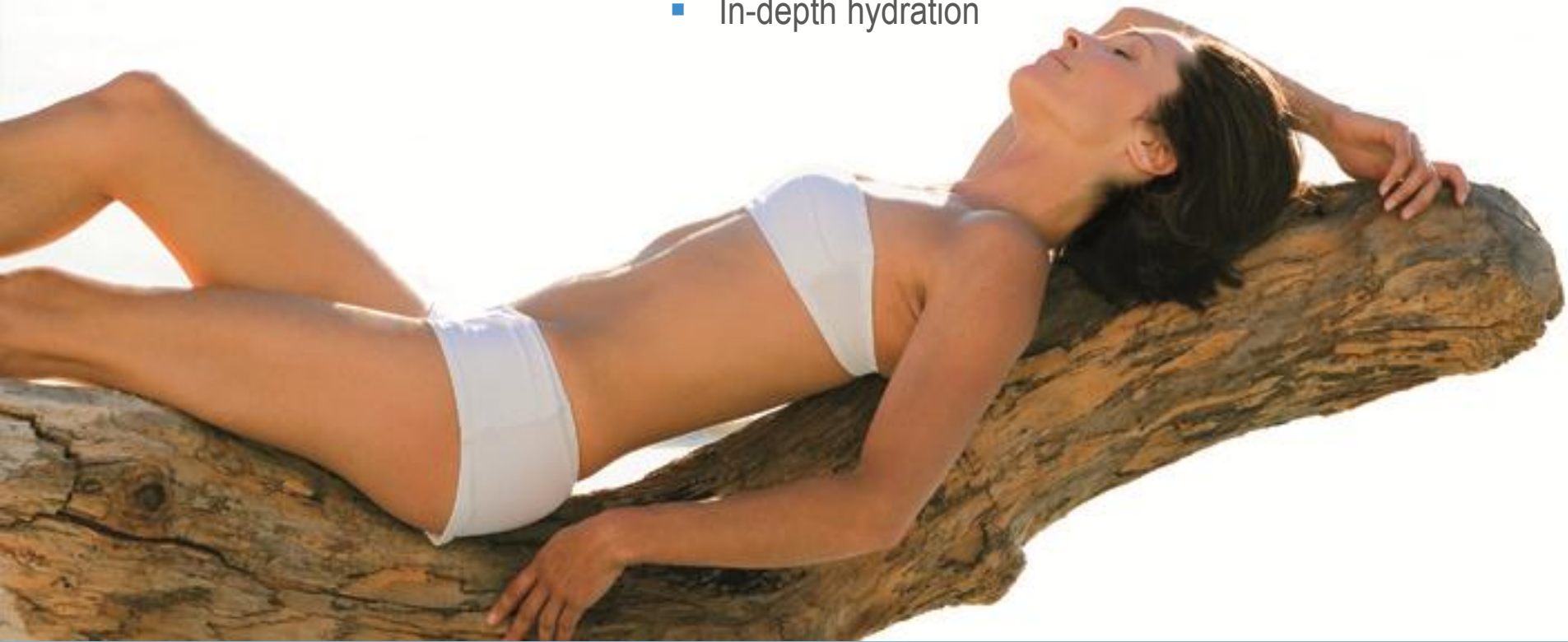


IN VITRO Studies

- Hypertonic stress & Hypotonic stress
- Synergistic effect
- Resistance to drying & UV stress

IN VIVO Studies

- Reduction of the dry aspect
- Superficial hydration
- Moisture of the epidermis
- In-depth hydration



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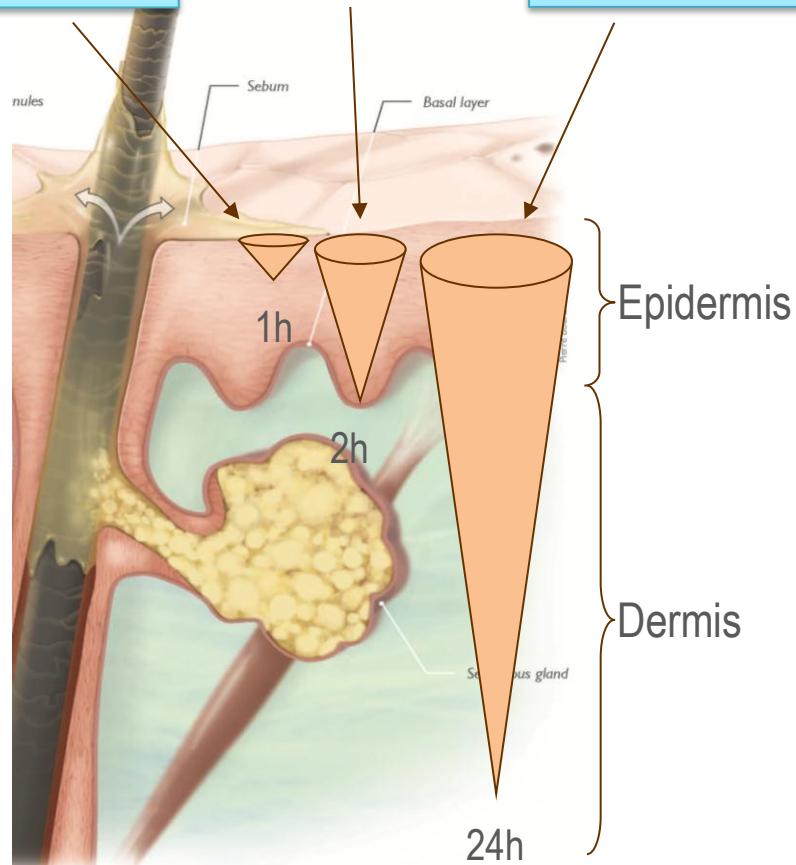
Intelligent Hydration



Corneometer
Up to 100µm

MoistureMeter
Up to 500µm

Near IR
Up to 1500µm



The level of water stabilises after 1h in the *stratum corneum*, after 2h in the epidermis and after 24h in the dermis.

AQUALANCE™

- Supports natural cell osmoprotectant strategy
- Maintains optimal cellular water content
- Restores the skin's water holding capacity
- Get best skin hydration



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REVIDRATE™

Self Moisturising Control
revives the skin

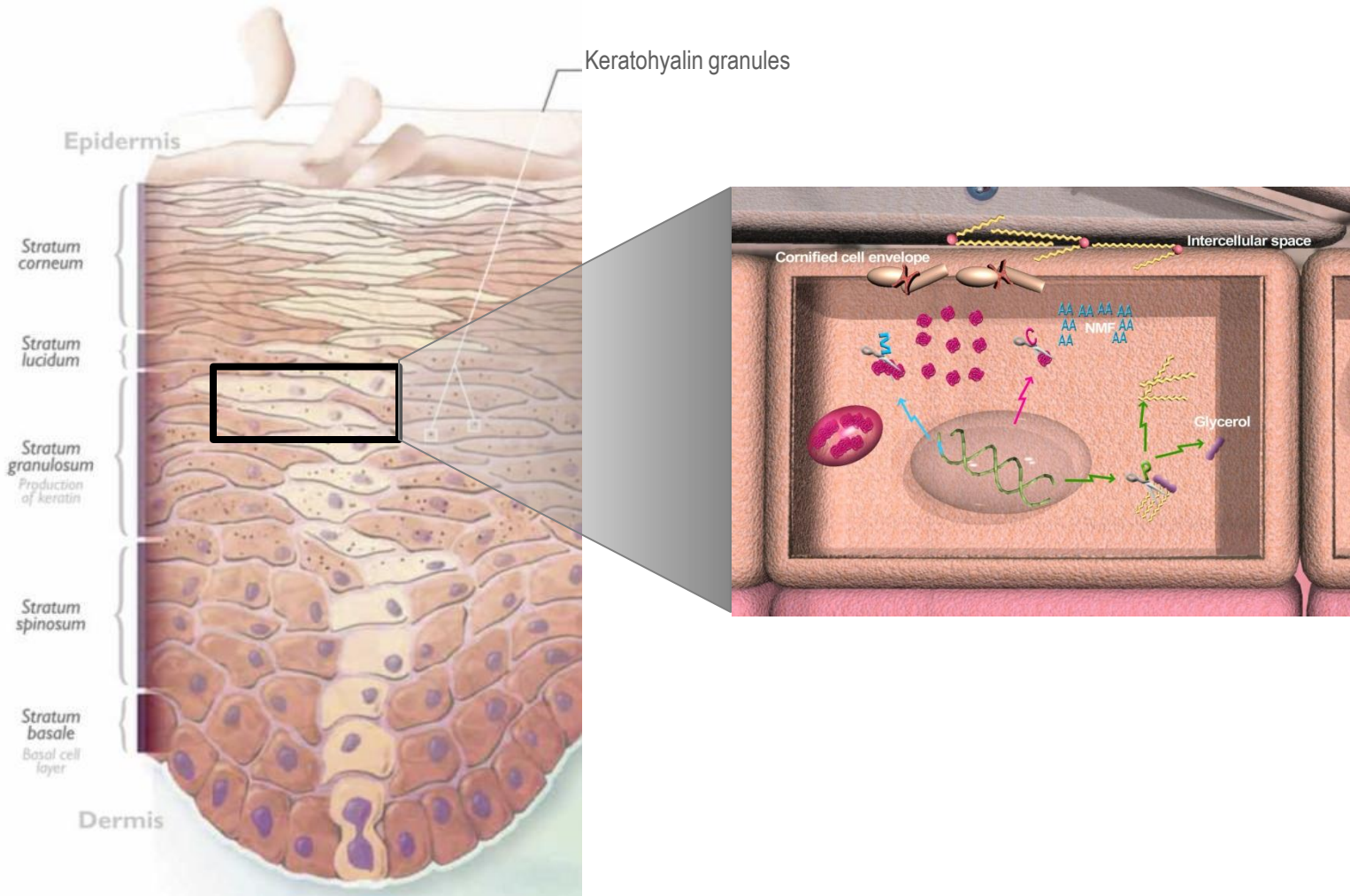
Recreates the skin's
own natural moisture

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Barrier Enhancement

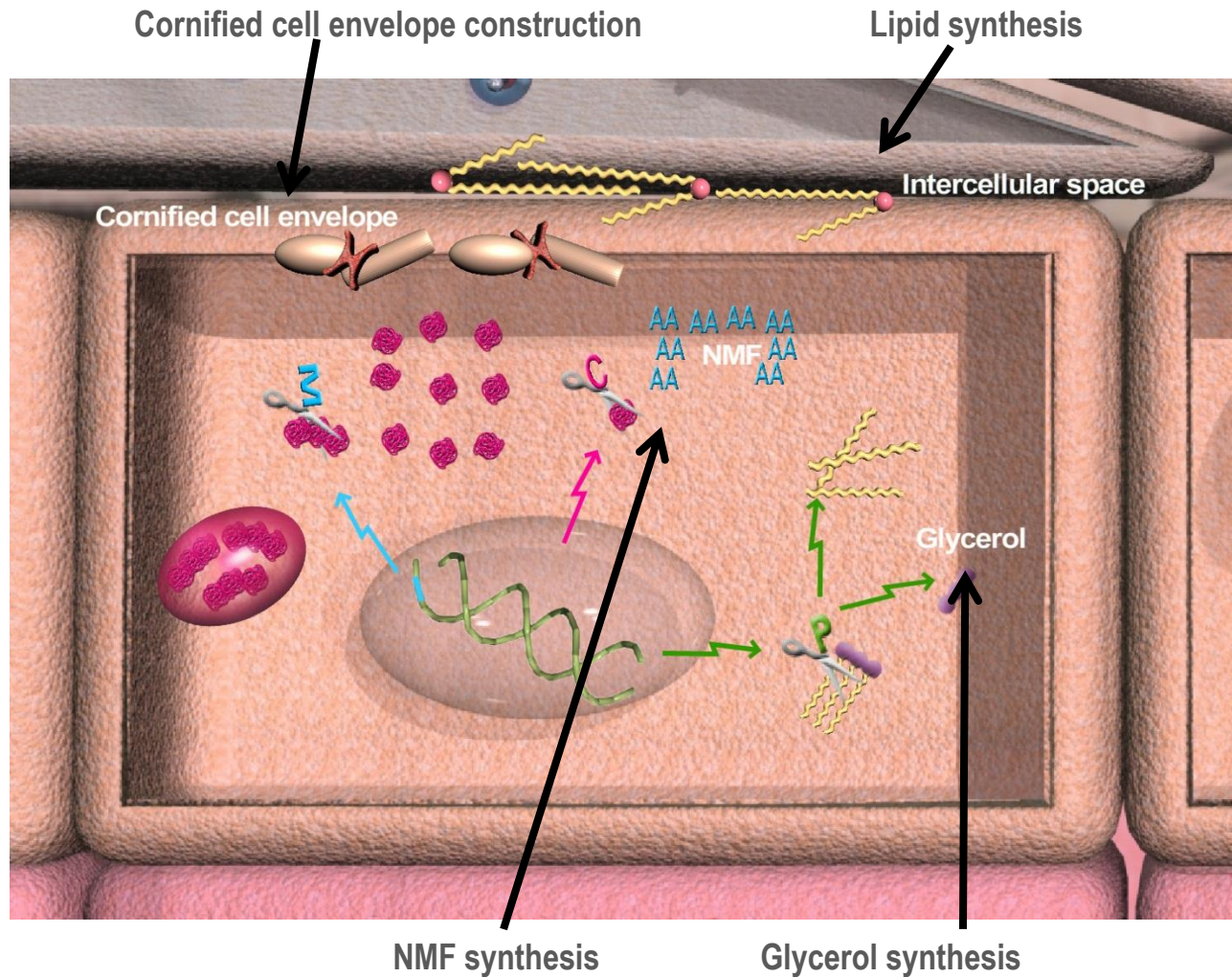


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Barrier Enhancement

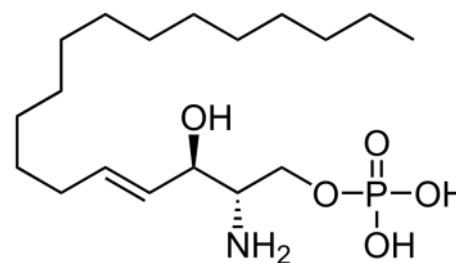


Barrier Enhancement



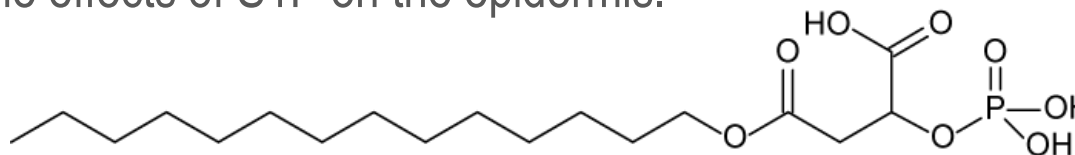
The natural way

Innovative publications have revealed the effect of sphingosine-1 phosphate (S1P) on the epidermis maturation and enzyme activation.



The biomimetic alternative

Sederma has found an analogue after 5 years of research.
The molecule mimics the effects of S1P on the epidermis.



Myristylphosphomalat

Barrier Enhancement



IN VITRO studies revealed

Promotion of Natural Moisturising Factor synthesis:

- Elevated levels of
 - Filaggrin / Profilaggrin
 - Filaggrinase
 - Caspase-14
 - Bleomycin hydrolase

***Stratum corneum* maturation:**

- Corneocyte envelope: Loricrin, Transglutaminase & Aquaporin 3
- Intercorneocyte space: Cholesterol, Ceramides & Hyaluronic Acid
- Intercellular junctions: Occludin, Claudin & Cingulin

Barrier Enhancement



IN VIVO assessments

Biochemical moisture markers

- Caspase-14
- Endogenous Glycerol

Epidermis moisture content

- Corneometer
- MoistureMeter™-D

Cutaneous barrier

- TEWL
- Wettability

Epidermis moisture was assessed:

- 1 week after the last application with 27 volunteers

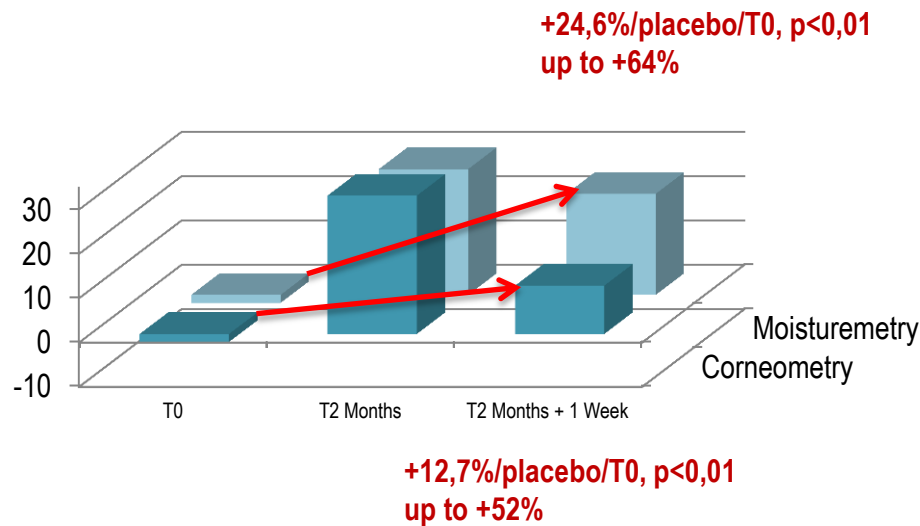
38 volunteers (male and female), Ø 47 a
2x daily application of a cream containing
3% REVIDRATE™
2 months against placebo (face/forearm)

Barrier Enhancement



Epidermis moisture content

Remanent Hydration after 1 week



REVIDRATE™

- REVIDRATE™ provides **inside and outside moisture** (NMF inside the cell, barrier outside the cell).
- Natural glycerol** skin content is assessed for the 1st time.
- Suitable **for men and women** with dry skin.



Paciffeel

Pacified skin
feels beautiful

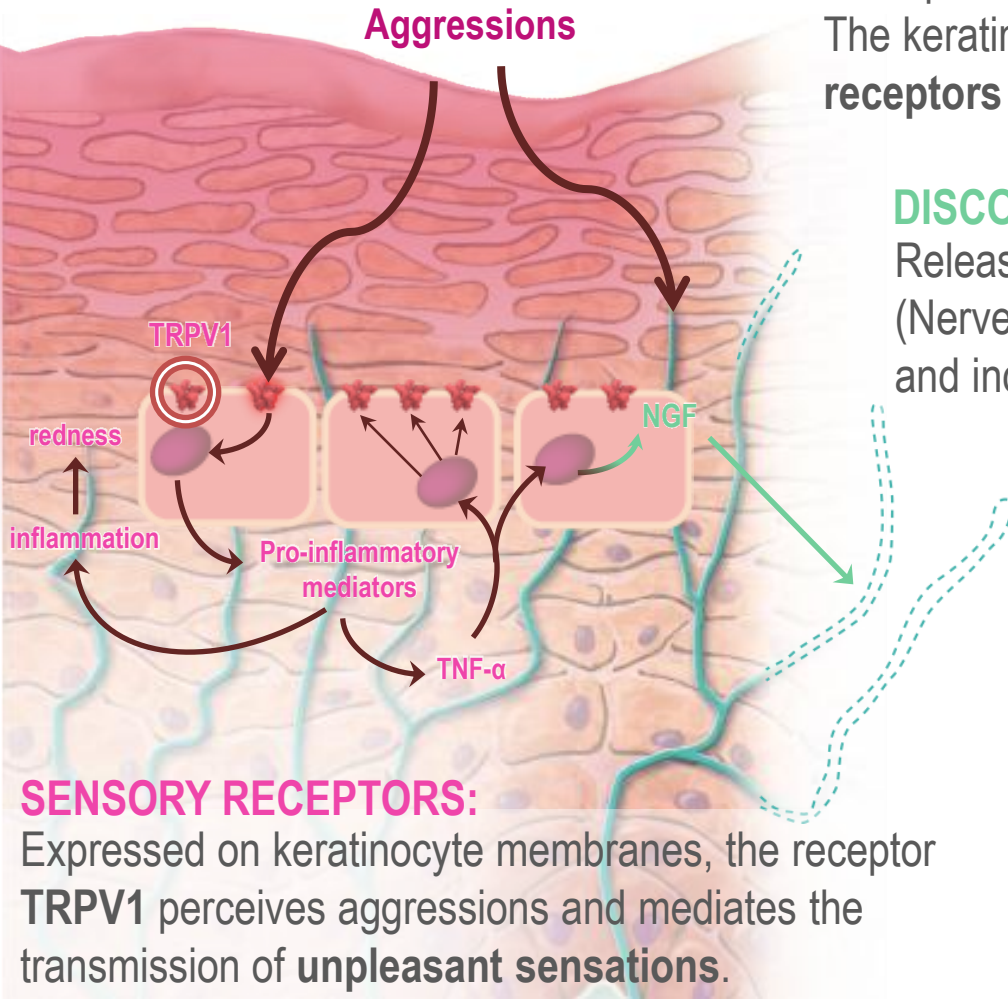
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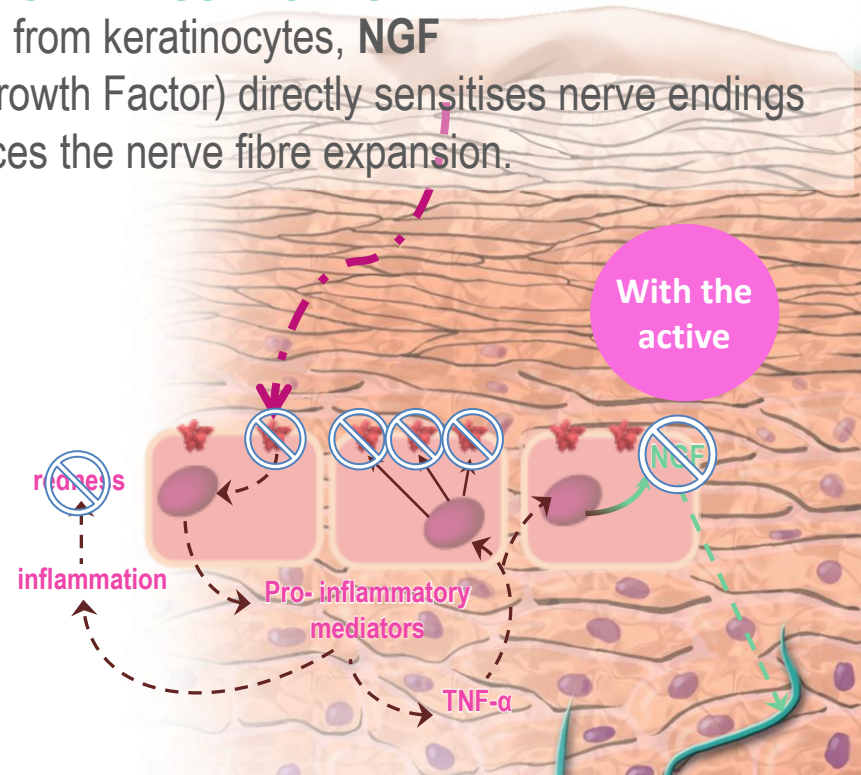
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DISCOMFORT MESSENGERS:

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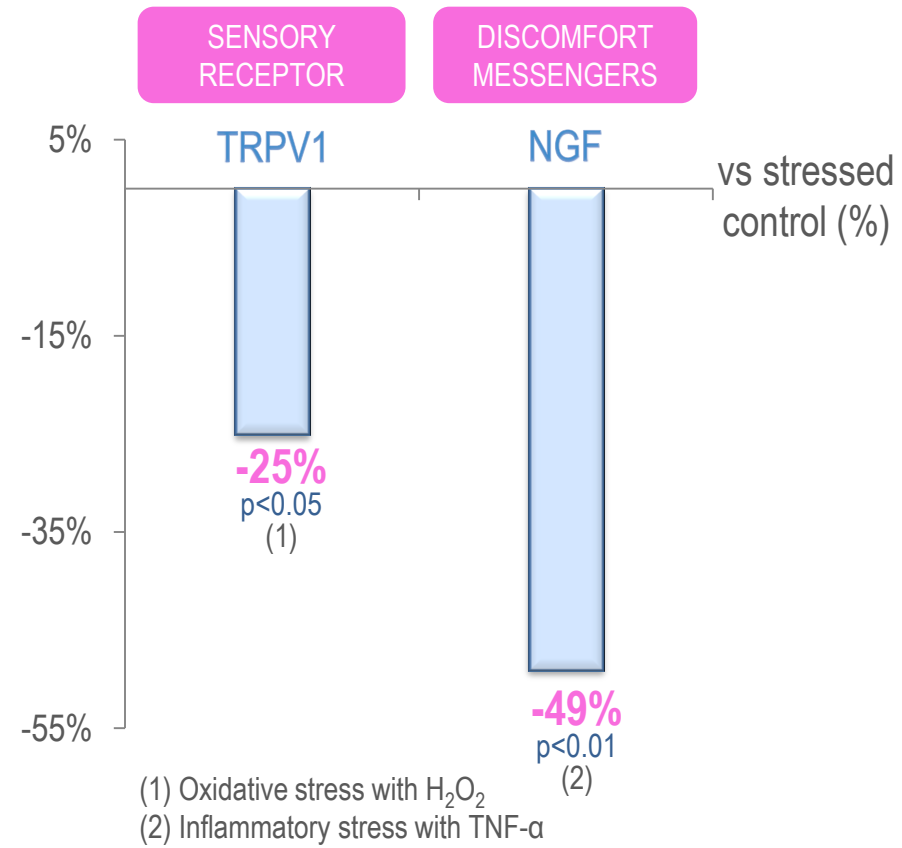
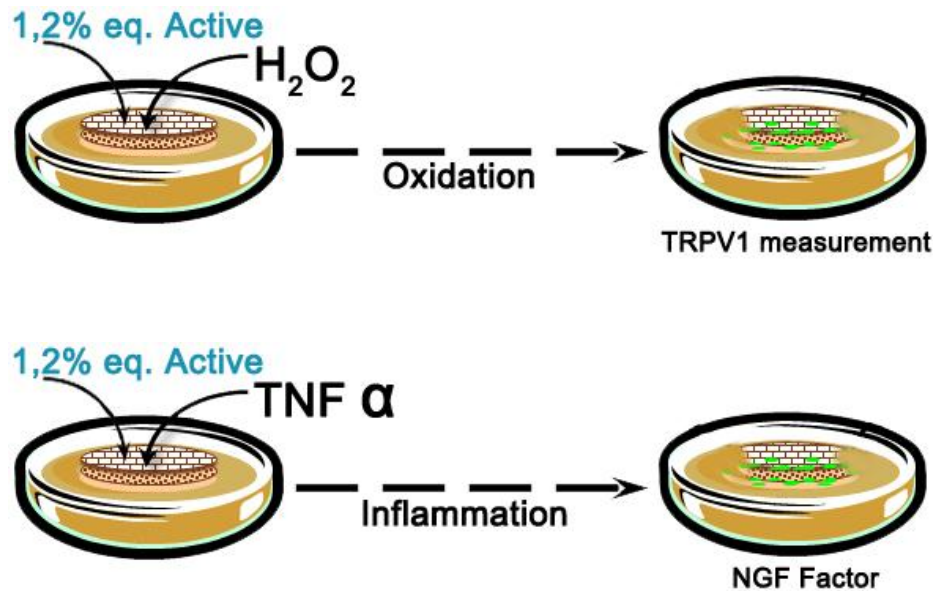


Defence Mechanisms



Reduction in epidermal hypersensitivity (TRPV1) and down-regulation of discomfort messengers (NGF)

1.2% eq. Pacifeel™ on stressed human keratinocytes

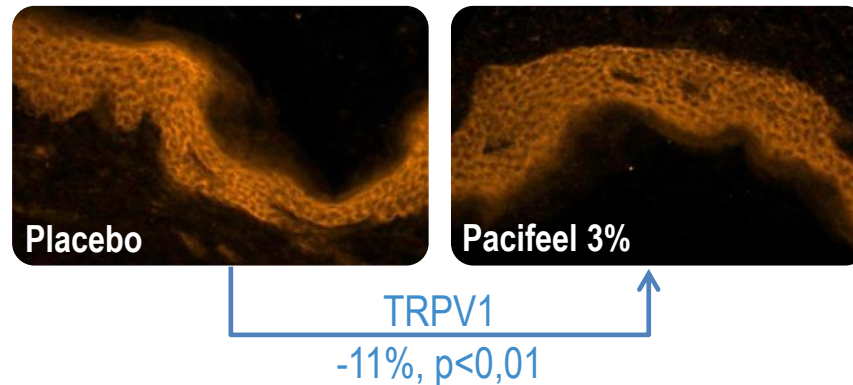


Defence Mechanisms



Reduction in epidermal hypersensitivity (TRPV1)

PACIFEEL™ 3% on skin explants (n=40) stressed by Substance P responsible for skin sensitisation



The active helps to reduce unpleasant sensations by modulating the sensory communication between the epidermis and nerve endings.

Defence Mechanisms

The weakness of the barrier function makes the skin more sensitive to aggressions.
The active reinforces the physical barrier between the epidermis and the environment.

PACIFEEL™

RESTORATION OF THE BARRIER FUNCTION

Expressed on keratinocyte membranes, **TRPV4** (Transient Receptor Potential Vanilloid 4) is a major sensory receptor involved in the **restoration of the barrier function**. **TRPV4** helps to:

- Strengthen the cornified cell envelope
- Improve the cell cohesion
- Rebuild the intercellular cement

PREVENTION OF DRYNESS

Dryness is often a side effect for people suffering from sensitive skin.

- Hydration

Defence Mechanisms



The active principle of PACIFEEL™

A natural extract of the *Mirabilis jalapa* plant, native to the tropical areas of South America.

The Four O'Clock Flower is the other common name because its lightly fragrant flowers open in late afternoon and bloom until the next morning.



PACIFEEL™

- Alleviates cutaneous discomfort
- Fades redness of sensitive and reactive skin
- Improves skin resilience against aggressions
- Restores the fragile barrier function between the epidermis and the environment

Conclusion

- Sensitive skin is no longer perceived to be purely subjective
- There is evidence for constitutional factors of sensitive skin
- Targeted cosmetic approaches can help reduce hyperreactivity



AQUALANCE™ Aquafilling based on an osmoprotectant activity



REVIDRATE™ Recreates the skin's own natural moisture



PACIFEEL™ The skin is pacified and feels beautiful



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We are happy to answer your questions!

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