Article

Soothing Effect Dedicated to Sensitive Skin

Anne Charpentier – Oct 18, 2019

TAGS: Skin Care Soothing Agents

The skin plays multiple roles of protection, perception, immunity, regulation of blood and lymphatic reservoir for the whole body. Thanks to several mechanical, chemical or biological (sebum, biofilm ...) reactions, the skin ensures its integrity according to the various endogenous or exogenous environmental variations. Today, the increase in the fragile phenomena of skin is a major issue in the development of dermo-cosmetics.

Let's read about the basic concept of sensitive skin physiology in detail and the soothing effect associated with sensitive skin...

Concept of Sensitive Skin

The concept of sensitive skin has been a topic of news for more than 30 years for the formulators of the cosmetic industry. Skin irritation, sometimes confused with allergic skin, results in redness, flaking, vesicles. Sensitive skin is often associated with a consumer's feelings.

Since the 90s, there has been an evolution in the understanding of this skin mechanism in Europe that has led to the development of products specifically oriented towards this type of skin. The contribution of academic research in the fields of **cutaneous innervation**, **intercellular communication**, **proteomics or genomics** has made it possible to better

understand this skin and to develop products that are always more adapted and targeted.

Mechanisms Involved in Sensitive Skin Physiology

Three mechanisms have been identified as potentially involved in the physiology of sensitive skin. They are:

- The disruption of the barrier function
- The specific nervous system, and
- The involvement of immune cells

In fact, the loss of the skin barrier function causes a decrease in the protection of the cutaneous nerve fibers and exposes them to the external environment. The density of nerve fibers present in the skin can also play a role. Finally, neuronal hyperactivity is explained by the presence of receptors that no longer protect, **but induce sensations of pain**, warmth and itching in the sensitive skin.

Effect of Sensitive Skin on Humans

Sensitive skin can affect all periods of life, ranging from infants to seniors. **Babies** are particularly prone to redness and irritation due to their **still immature skin barrier**. They have:

- A lower hydrolipidic film
- A thin dermis
- A more permeable skin, and
- Almost non-existent protection against the sun and heat.

The skin of **teenagers** may also have a certain sensitivity because of aggressive cleansers used, leaving the skin **hypersensitive**. **For mature skins**, these are particularly **vulnerable to external aggression**. The activity of the sebaceous glands slows over the years, and the skin becomes thinner and more dehydrated.

Sensitivity makes the skin prone to:

- Hypersensitivity
- Vulnerability
- Redness
- Irritation
- Itch

Clinical Studies and Testing Methods Associated with Sensitive Skin

Sensitive skin is called "Dermatosis Invisible", "atopy", or "reactive skin". It is a recent phenomenon as it would have been described for the first time in the second half of the XX century. This is a common disorder that now affects more than one out of two French and is widespread throughout the world.

Today we know that 1 French in 2 is affected whereas in China and South Korea, 62% of women have sensitive skin. The causes of the higher prevalence in Asia compared to European countries would be due to overwork and stress, as well as to being exposed to pollution in large cities.

Clinical studies associated with bio-metrological assessments in vivo on human enables the observation of functional cutaneous signs that describes the healthy skin and the different signs of sensitive manifestations. The soothing effects are associated to respond to:

Environment (water, wind, sun, pollution, cold) specific skin physiological conditions

Internal factors (hormones..)

Lifestyle (alcohol, stress…)

Formulations for sensitive skins generally contain:

Few ingredients (only the necessary, no superfluous ingredients)

Limited preservatives

Adapted filters, and

Little or no fragrance

From these advances, some brands formulate skincare to avoid irritation or aggression from ingredients characterized by their low potential irritant or allergenic, coupled with moisturizing principles or constituents of the skin barrier.

Others will provide a more symptomatology response with specialties designed to correct unrest and disorders found such as inflammation, discrete vasodilation and where the sensations of tingling and warming.

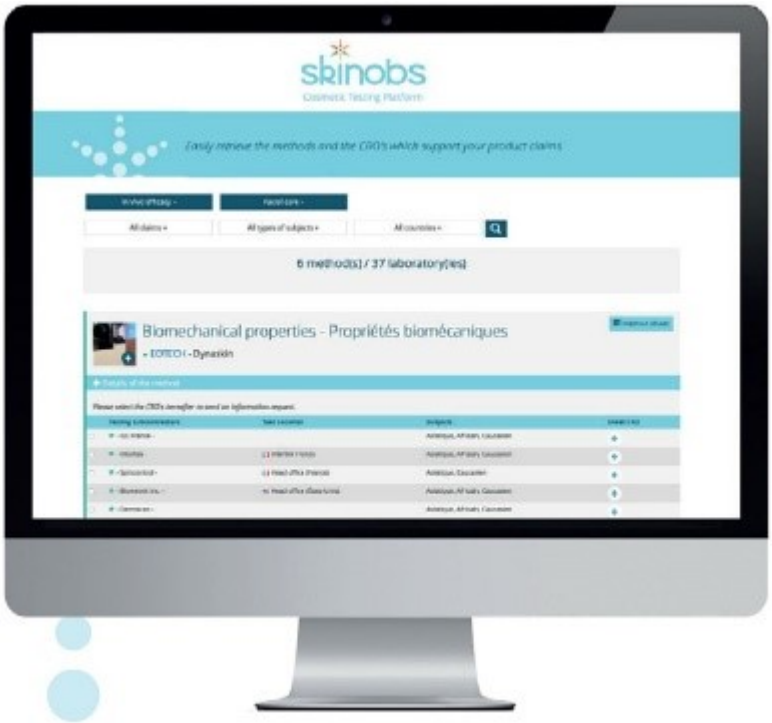
After the Dewy wave, a new emerging trend coming from South Korea, **the Skip Care, focusing on quality rather than the number of cosmetic products** used routinely. The goal is to return to a simpler beauty routine, identifying the essential ingredients in order to avoid any use of unnecessary products.

To do this, we find multifunctional products for adage: fewer products for the same profits. The idea is to focus on 2 steps: cleaning and hydration. However, this is linked to the problems of sensitive skins which only seek the strict necessary in formulas.

Thus, cosmetic products, first protect, then restore the barrier function, strengthen the extracellular matrix, repair, soothe pruritus and itch, regenerate or calm irritations and redness. They can also reduce the inflammation and help to treat both allergic contact dermatitis and atopic dermatitis, even if it is not cosmetically correct to say it under some regulation latitudes.

Types of Testing Methods

Skinobs platform lists more than 30 methods that meet this claim, in addition to other methods such as consumers testing, clinical scorages and sensory analysis.



Test Under Dermatological Control

Consumer testing including large sensitive skin panel answering questionnaire.

Stinging testing: Testing the sensory answer in the nose wings lactic acid, capsaicin or dimethylsulfoxide.

BoSS: Burden of Sensitive Skin questionnaire including 23 questions (L. Misery June 2017 JAAD)

Physiological Approach

Skin sensitivity measure: Neurometer

TEWL for the skin permeability: Aquaflux, Dermalab, Evapometer, Vapometer...

Micro-circulation: Laser Doppler, Tivi 700, Tivi 8000

Moisturizing: Corneometer, Epsilon, MoistureMeter, MoistureMap, MoistureMeterEpi…

Microbiome integrity: PCRs, rRNA, S16 rDNA, ITS Mass Spectrometry,Nano LC-MS/MS

At Surface Level

Temperature: FIR thermal camera, thermometer, Evatherm by Eotech

pH: Skin-pH-meter 905

Color: C-Cube, Chromameter, Spectro-colorimeter, Visioscan, Mexameter, SkinColorCatch, TiVi 70

Surface visualization: DermaTOP, Antera 3D, and all dermascopes

Cellular Level and Omics Approach

Lipids analysis with Shotgun mass spectrometry by Lipotype

Multi-omics mechanisms by Phylogene and Oxiproteomics

Skin structure: Optical Multiphoton Tomography [MPT Flex], confocal microscopy

Major innovations in the perception objectivation remain to come if it considers the latest research on sounds, taste, smell or vision receptors present in the keratinocytes as specified by **Mr. Briand (INRA)**, and **Mrs. Broussard (Shiseido)**, during the recent JP Marty days on the barrier function topic. In complementary ways, the testing innovations will be initiated with new active developments, without talking about the most promising role of cannabinoids in the treatment of itch.

The more the mechanisms behind the sensitive skin phenomenon will be understood, the more cosmetic industry will be able to offer effective and durable solutions to treat sensitive skins, through the elaboration of formulations targeted specifically for these mechanisms.

Commercially Available Soothing Agents Available

Sedaplant™ Richter
CLR Berlin

Water, Alcohol, Foeniculum Vulgare (Fennel) Fruit Extract, Humulus Lupulus (Hops) Extract, Melissa Officinalis Leaf Extract, Viscum Album (Mistletoe) Leaf Extract (and) Chamomilla Recutita... view more

---

SyriCalm™ CLR
CLR Berlin

Water, Phragmites Communis Extract and Poria Cocos Extract. SyriCalm™ CLR by CLR Berlin acts as an anti-inflammatory, repairing agent, soothing agent, anti-stress and anti-redness/ anti-couperose... view more

---

NIXALIN™
Terlys

NIXALIN™ is a sustainable and biofunctional active ingredient with restorative benefits. It is synthesized naturally to increase adaptogenic activity of botanicals. It helps in restoration and... view more

---

Pelavie® Lavande ISO 16128
The Innovation Company

Be the first to comment on "Soothing Effect Dedicated to Sensitive Skin"

Leave a comment

Comment *

Comment Text