



**THE SCIENTIFIC STUDY
OF THE SECOND PHASE OF THE METHOD**



DISCOVER THE ART OF MOISTURIZING THE SKIN

The beauty of the skin passes through its health.

For this reason it is essential to **RESTORE** and **REBALANCE** the complex structure of the skin in order to provide the elements necessary for its protection and integrity: in this process **WATER** plays a fundamental role.



SKIN HYDRATION

WHAT IT DEPENDS ON AND HOW TO IMPROVE IT

Water is a vital element both for the skin and the entire body: **maintaining the right degree of skin hydration ensures optimal skin health and improves its appearance.**

It is thought that moisturizers "add water to the skin"; actually, in most cases, these products work by reducing the evaporation of water from the skin.

CURIOSITY

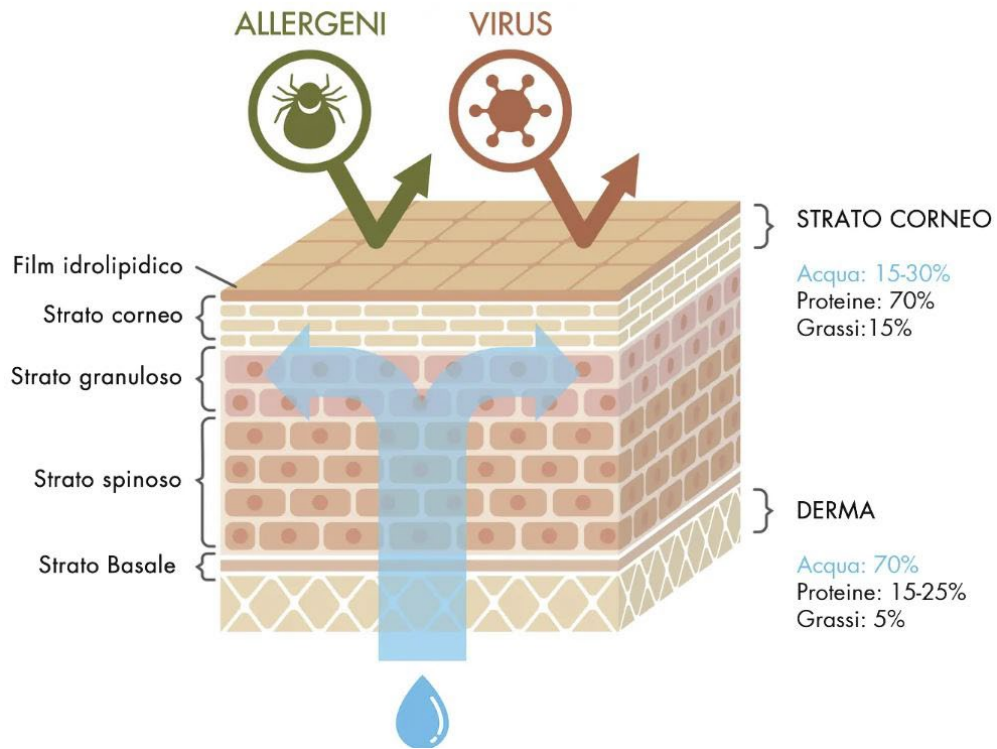
THE ROLE OF THE SKIN

Did you know that one of the most important functions of the skin is to oppose the loss of water from the body?

The **stratum corneum** is the primary physiological barrier of the skin and is of fundamental importance for **maintaining water balance**.

Approximately 50-60% of an adult's body weight is water.

A hydrated and healthy skin reaches about 70% water content in the deep layers (dermis) and 30% in the superficial layers (stratum corneum).





FUNCTIONS

WHY HYDRATE IS IMPORTANT

Moving from the dermis to the surface, the water content decreases. In fact, one of the main functions of the epidermis is to prevent excessive loss of water.

The hydration of the stratum corneum, even if reduced, is still essential for maintaining the normal integrity and turnover of the skin.

In fact, water allows greater flexibility of the stratum corneum, and in addition it is also a crucial component of the enzymatic reactions responsible for the flaking of aged cells during the desquamation process.

Below a critical concentration of epidermal water, the connections between the superficial cells of the stratum corneum remain intact.

As a result, dead skin cells build up on the surface, resulting in the appearance of dry, flaky skin.



REGULATION OF SKIN HYDRATION

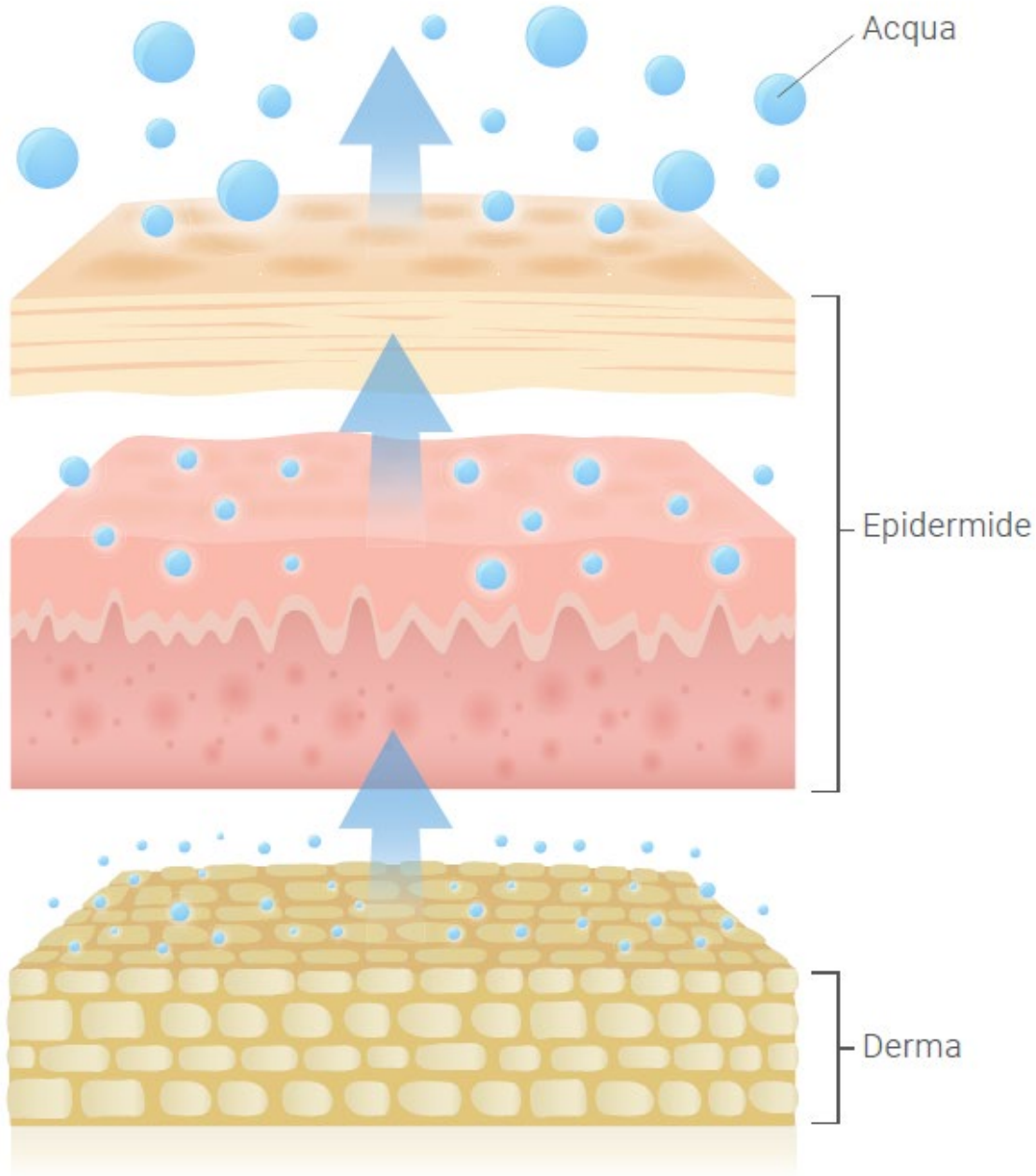
THE PATH OF WATER

Within certain limits, the loss of water from the skin is a physiological phenomenon: the water goes back from the bloodstream to the deeper layers of the skin (dermis) and from there to the more superficial ones (stratum corneum), evaporating into the environment.

Since we are unaware of this phenomenon, we commonly speak of "perspiratio insensibilis" or "imperceptible perspiration".

In technical terms we speak instead of **TEWL** - acronym of Trans Epidermal Water Loss - a parameter that quantifies the loss of trans-epidermal water.

The average TEWL is about 300-400 mL per day; however, it can be affected by environmental factors; for example, it is reduced in conditions of high humidity.



REGULATION OF SKIN HYDRATION THE PATH OF WATER

Various mechanisms oppose this loss of water and in this sense the stratum corneum plays a leading role. In particular, two are the most important "barriers" to mention:

- The characteristic "**mortar and brick**" structure
- The presence of the so-called **hydrolipidic skin film** (natural hydration factor)

In addition to the passive transport of water just described, there is also one of the "active type", mediated by special proteins called **aquaporins**. These proteins form channels to convey water and water-soluble ingredients, transporting them to the surface.



MORTAR AND BRICKS

THE STRUCTURE

The stratum corneum is organized in a "bricks and mortar" structure.

Its cells (**corneocytes**) are in fact flattened, closely leaning against each other like the tiles of a roof and cemented by a "mortar" made of fats.

At the same time the corneocytes are surrounded by a "lipid lamella", made up of **ceramides**, **cholesterol** and **free fatty acids** produced by the **keratinocytes** themselves.

These lipids create a kind of waterproof barrier that significantly reduces the loss of water from the skin.



CUTANEOUS HYDROLIPID FILM

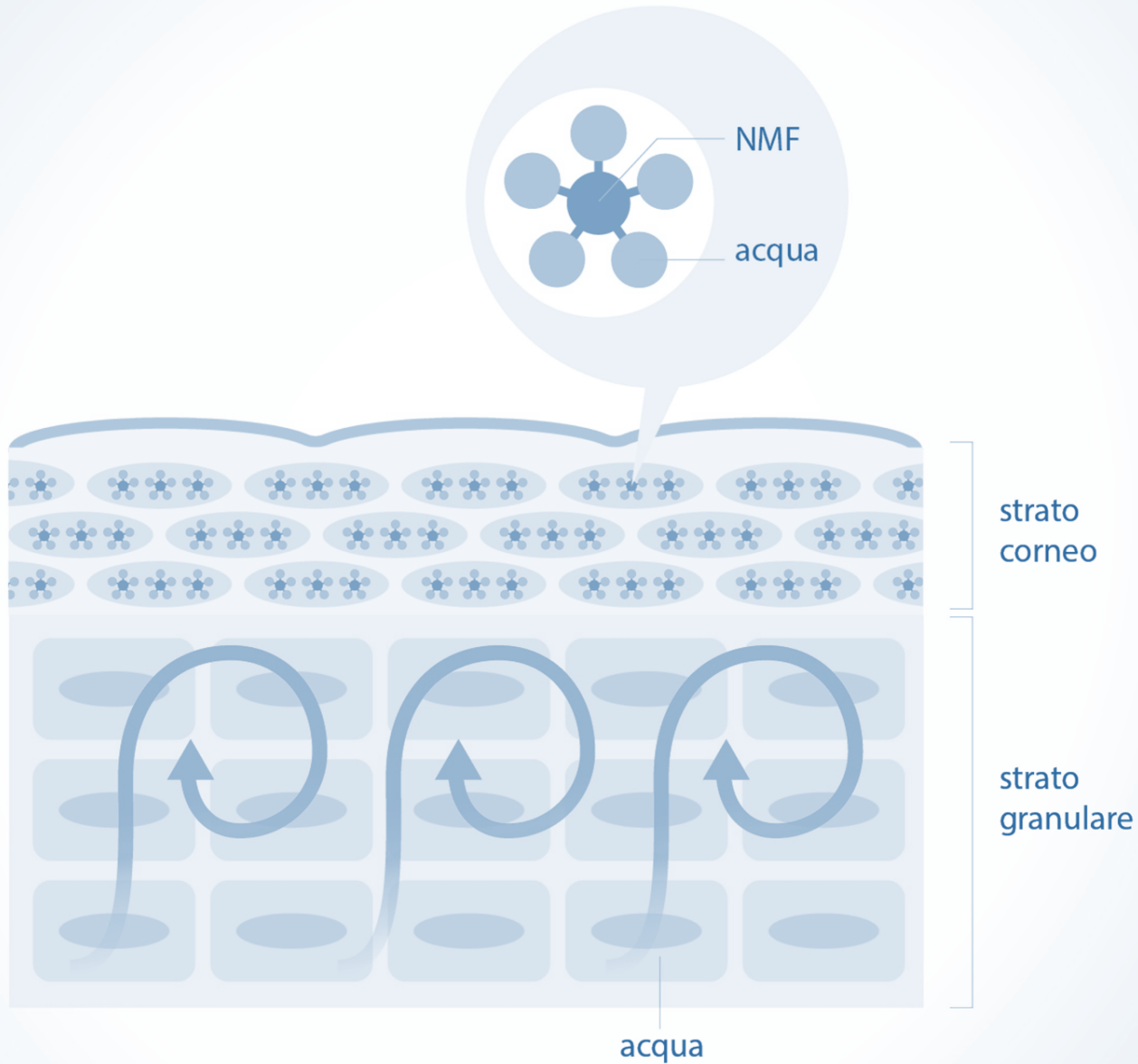
THE MANTLE OF SKIN

The so-called hydrolipidic film is a thin protective layer that covers the epidermis, also known as the hydrolipidic mantle or acid mantle (due to its slightly acidic pH - 5.5).

The integrity of the hydrolipidic mantle is essential for:

1. keep the skin soft and hydrated protect the body from external microorganisms
2. reduce the risk of developing infections
3. regulate the absorption and excretion of substances through the skin
4. lubricate the skin
5. confer body odor

The hydrolipidic film retains the water that is transferred to the skin surface with perspiration, "trapping" it in a sort of physiological emulsion, helping to reduce TEWL.



CUTANEOUS HYDROLIPID FILM

THE MANTLE OF SKIN

In the absence of the hydrolipidic film, the water losses through the TEWL would be much higher than the physiological ones. The hydrolipidic film is mainly composed of lipids (95%) and to a lesser extent of "water" (5%).

The **WATER phase** of the hydrolipidic film is defined as NMF (Natural Moisturizing Factor) and is composed of all the non-lipid substances present on the epidermal surface.

Responsible for maintaining the acidity level of the skin, its solutes have hygroscopic functions, capturing and retaining water, also fixing part of the environmental humidity in contact with the skin.

The **OIL phase** of the hydrolipidic film is made up of lipids, mostly of sebaceous origin and to a much lesser extent keratinocyte.



40 %

CERAMIDES

25%

CHOLESTEROL

25%

FREE FATTY
ACIDS

10%

OTHER LIPIDS

CUTANEOUS HYDROLIPID FILM THE MANTLE OF SKIN

Under optimal conditions, the **LIPID** composition is composed by :

- 40% CERAMIDES
- 25% CHOLESTEROL
- 25% FREE FATTY ACIDS
- 10% OTHER LIPIDS



CUTANEOUS HYDROLIPID FILM

THE MANTLE OF SKIN

Acid mantle lipids contribute to normal skin functions and the maintenance of healthy skin.

The alteration of the hydrolipidic film barrier is generally the most significant cause of moisture loss from the skin, resulting in the appearance of dry skin and associated signs (cracking, roughness, peeling, etc.).

The **hydro-lipid balance** of the skin barrier is challenged daily by internal factors (immunological alterations...) or external factors (pollution, sun exposure, physical and chemical agents, aggressive cleansing...).

This is why it is important to act to maintain a good **BALANCE** in the functionality of the skin barrier.

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