SCIENTIFIC FILE

The Skin

BIOLOGIQUE RECHERCHE
PARIS

CONTENT

INTRODUCTION

The skin is a complex, multi-faceted organ made up of several layers and covering the entire body. It consists of all the cells grouped together in the form of heavy-duty and flexible tissue. In humans, it is the vastest and heaviest body organ in terms of surface area and weight.

This barrier organ is essential for protecting the body against environmental attack, while promoting sensory contact and heat and water exchanges, which are key in maintaining homeostasis. It participates in social communication; it is a mirror organ where most internal diseases manifest themselves as do all our emotions and reactions.

- It occupies a surface area of nearly 2m² and weighs approximately 3kg
- Its thickness varies a lot : from 0.5 millimeter for the eyelids to 4 or 5 millimeters on the upper back
- The skin's architecture consists of 3 different superimposed tissues: the epidermis, the outermost tissue, the dermis and the hypoderme, i.e. the deepest
- The skin's pH ranges from 4.7 to 6.5

1. THE SKIN: DEFINITION, ROLE, STRUCTURE

A. THE ROLE OF THE SKIN

The skin is on the front line as it has a defense function while interfacing with the external world. There is a social dimension to the skin: as the living envelope for our body, the skin reflects all the pressure exerted on the individual: happiness, sadness, stress, fear, etc. Everything felt by human beings is reflected in the skin's reactions and emotions. It therefore contributes to the life and balance of the body, which is why skin care is essential.

- **Protective Function**

The skin is the human body's first line of defense against external attack. It protects us from ultraviolet rays, chemical agents, microorganisms and cushions shocks.

- **Thermoregulatory Function**

The skin is sensitive to internal and external temperature fluctuations. In direct contact with the brain, it maintains a constant body temperature through sweating, dilation or vessel contraction.

- **Sensory Function**

Rich in sensory fibers, the skin informs the brain of different perceptions such as pain, temperature and pressure.

- **Exchange Function**

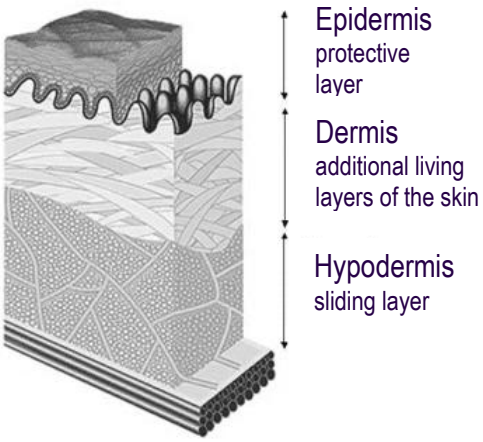
With its vast surface area, the skin is the body's means of communication with its environment. It enables the exchange and transport of different molecules such as water, thereby helping maintain the balance of the body.

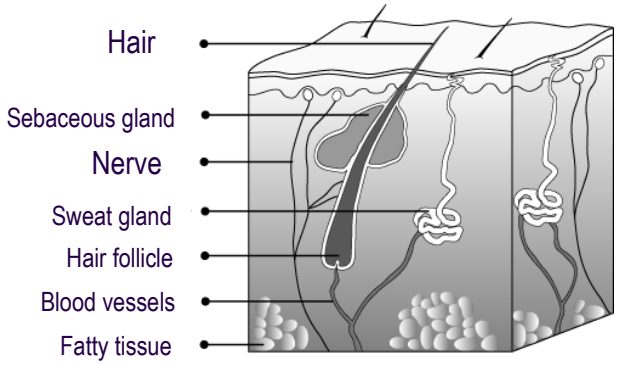
- **Metabolic Function**

The skin produces substances for itself and other organs. For example, melanin and keratin are produced to protect the skin. The skin also produces vitamin D, which is essential for fixing calcium to the bones, drawing its energy from the sun.

B. STRUCTURE OF THE SKIN

From its surface to its depth, the skin consists of three superimposed layers: **the epidermis, the dermis and the hypoderme.**





– **THE EPIDERMIS**

The epidermis is the superficial layer of the skin. Non vascularized, it draws the nutrients it needs from the dermis and compensates for any deficiencies thanks to external additions (cosmetic products). The skin's brightness and beauty are determined by the vitality of the epidermis. Its primary function is to protect the skin against external attack.

It is made up of 5 layers of constantly renewed cells:

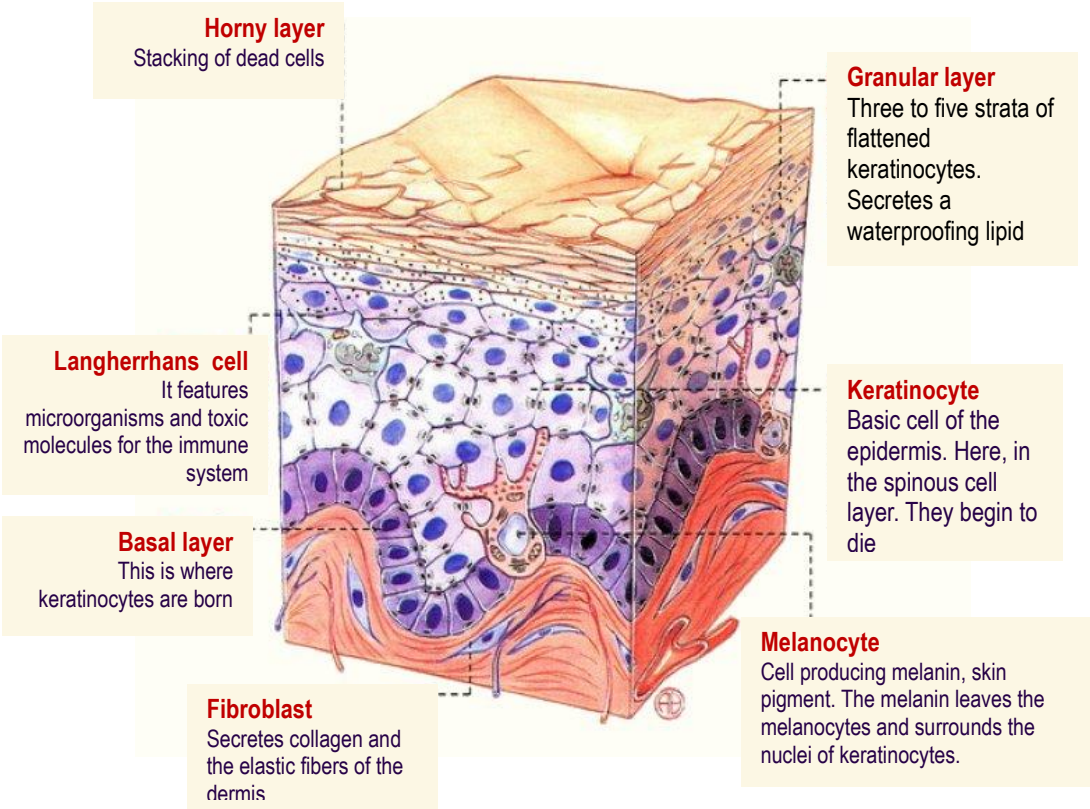
- The **basal layer**, *stratum germinativum*, where the keratinocytes form a single cell base, held together by desmosomes; this is where the cells split in half: one (stem cell) remains in the basal layer while the other migrates towards the suprabasal layers. The melanocytes (cells producing the melanin responsible for skin pigmentation) are also anchored in this basal layer.

- The **Malphigian layer** or spinous layer (*stratum spinosum*): contains keratinocytes (cells producing keratin which gives the skin its hardness); nerve endings (sensation of touch) and Langerhans cells (macrophages which consume impurities and are involved in contact dermatitis and inflammatory phenomena).

- The **granular layer** (*stratum granulosum*): darkest layer containing three or four cell bases which contain keratohyalin granules, involved in the maturing process (keratinization) or terminal differentiation of the epidermis.

- The **clear layer**, *stratum lucidum*: the cells are contiguous and clear as their nucleus disappears and is replaced by a vacuole. In these cells, profilaggrin or keratohyalin is transformed into filaggrin.

- The **horny layer** (final stage of the keratinization process): flat and dead cells filled with keratins called **"corneocytes"**. The horny layer has protective barrier properties between the internal and external environment. It is also involved in the removal of impurities and adhesive bacteria during the desquamation of the corneocytes on the surface. It is reinforced by the presence, on the skin surface, of an invisible film consisting of a mixture of water, sweat and sebum called **the hydrolipidic film**. This film covers the entire skin surface and helps maintain its moisture by preventing water from evaporating.



The epidermal cell renewal time taken to migrate from the basal layer to the surface is approximately 4 weeks. There is perfect balance between the division of the basal layer cells and the removal of surface cells.

Inside these 5 layers are 4 types of cell involved in the epidermis, each playing a specific role**: keratinocytes, melanocytes, Langerhans cells and Merkel cells.**

- **Keratinocytes** are cells born in the deep layer of the epidermis (basal layer) which gradually migrate towards the surface while undergoing changes and producing keratin. This "keratinization" process results, in the upper section of the epidermis, in the formation of the **horny layer.** Keratinocytes are major contributors to epidermal regeneration; they hold the key to cellular renewal, which is essential for maintaining good skin quality.

- **"Melanocytes"** are cells which produce a pigment, melanin, responsible for skin color and sun protection. Under the effect of the sun, the cells accelerate their production of melanin, known for its ability to absorb solar radiation. As a result, a natural screen is created, preventing the skin from burning while giving it a darker color. This defense reaction is known as tanning. With age, the activity of the melanocytes changes, which can lead to the accumulation of melanin, giving pigmentation marks and a less homogeneous complexion.

- **"Langerhans cells"** are part of the immune system. Their purpose is to defend the body against external attack. These immune sentinel cells are crucial for the skin's vitality. They are responsible for the immune defense reaction and therefore for contact allergies.

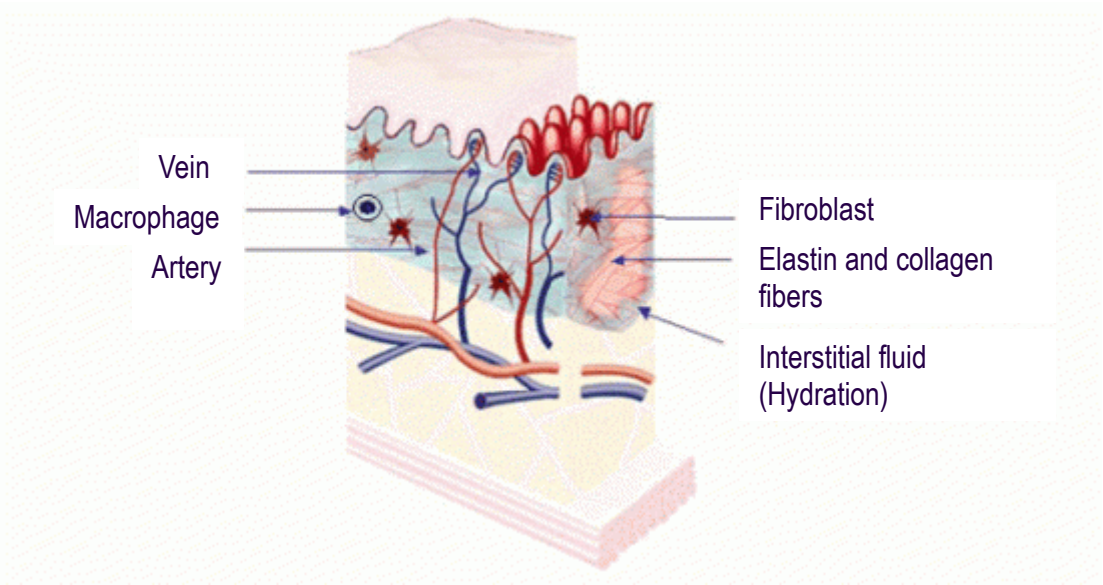
- **Merkel cells** are cells of nervous origin which act as a sensory receptor of touch.

– THE DERMIS

The dermis is a supporting tissue located between the epidermis and the hypoderme. The dermis is the "provider" of the epidermis in that it nourishes and protects it. As the genuine backbone of the skin, the dermis gives it firmness, tone and contributes to its hydration.
The dermis is made up of **cells (fibroblasts), support fibers, ground substance, blood capillaries, lymph node endings, nerve endings and sensory receptors**.

- **Support fibers and ground substance**

1. The **fibroblasts** produce fibrous components of **collagen and elastin**. These intersecting fibers give the skin its elasticity and firmness.
2. **Elastin fibers**: give the skin elasticity and tone.
3. **Collagen fibers**: give the skin solidity and mechanical strength.
4. **Ground substance:** The fibroblasts also produce a "ground substance", highly moisturized, it is a flexible gel composed of glycosaminoglycan. It fills the intercellular spaces of the dermis to improve its resistance to compressive forces.



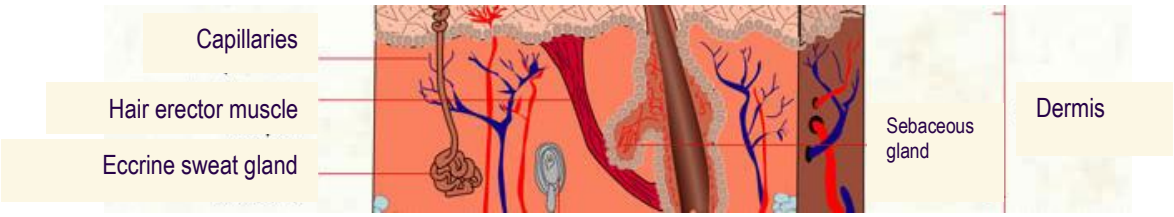
- **Blood capillaries and lymph node endings of the skin**

The vascular and lymphatic system of the skin is located in the dermis and the hypoderme, providing the skin with nutrition, oxygenation and detoxification.

1. **Lymph node endings**: eliminate toxins and are involved in the immune defense process.
2. **Blood capillaries**: guarantee venous return to the heart, carry the nutrients and oxygen required by the cells.

- **Nerve endings and sensory receptors**

The skin has an extremely dense network of nerve endings, which explains the sensitivity of the skin's surface. The epidermis and the dermis contain very thin nerve endings in constant communication with the brain. They transmit tactile and thermal messages to the brain. They play a major role in the sweating process and hair movement (e.g. goosebumps).

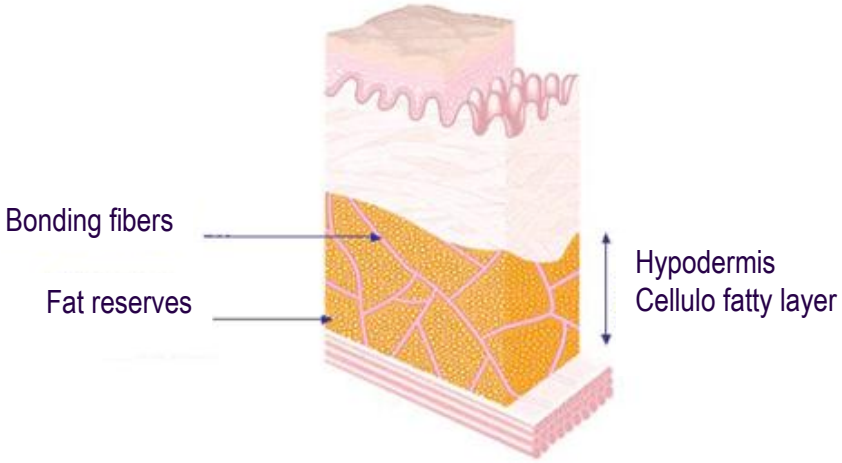


– THE HYPODERME

The hypoderme is the skin's deepest and thickest compartment. It invaginates into the dermis and is attached to the underlying dermis via collagen and elastin fibers. It is essentially made up of cells which stockpile and store fat: adipocytes. The adipocytes which constitute the hypoderme are cells merged into lobules and separated by connective tissue.

This layer provides energy reserves. The fat contained in the adipocytes can be recirculated, via venous flow, during heavy exertion or in case of a deficiency in energy intake, and is transformed into energy. "Burning calories" primarily means burning fat. The hypoderme contributes, at least passively, to thermoregulation as fat is a heat insulator.
The anatomical location of the hypoderme varies depending on the gender. While the hypoderme is distributed throughout the body, it tends to build up above the waist, around the stomach and shoulders in men, and below the waist around the thighs, hips and bottom in women.

It is also an endocrine organ capable of synthesizing and secreting adipokines, which can provide local (via autocrine or paracrine route) or systemic action and influence all the other organs involved in the physiology.



– THE SKIN FLORA

Present on the surface of the stratum corneum, the skin flora is a microbiological niche. It can take two different forms: resident or transient skin flora. The skin of an adult hosts, on average, one thousand billion bacteria of more than 200 different species.

a. Resident flora

The skin surface is anything but sterile. The different surface environments of the stratum corneum feature a diversity of "micro-biotopes" which select resident microbial species likely to develop, essentially Gram-positive. These species establish themselves soon after birth and are relatively stable throughout their life. The colonized density on the surface varies a great deal, from 102/cm2 to 107/cm2. Oily regions (face, back, scalp) are therefore host to a particularly lipophilic flora (substance soluble in fat). Sebum and derivatives are the core nutrients of their enzymatic resources (lipases, oxidases, etc.), thereby releasing glycerol, the moistening agent of stratum corneum. Dry regions (lower legs, etc.), where the lack of free water is by definition hostile to microbial development, are low-colonization sites.

b. Transient flora

Established by simple contact, transient flora (essentially Gram-negative) is characterized by low-colonization levels. It generally survives for a short period of time only, as the dry surface of the stratum corneum is hostile to its development and is rapidly destroyed under the effect of epidermal biocides or bacteriostatic peptides emitted by resident flora. However, the slightest "gateway" (cut, burn, etc.), by rupturing the stratum corneum, can be the initial source of skin infection, in which case these strains find an environment more conducive to their survival and development. Experimental attempts to trigger an infection have clearly shown that healthy stratum corneum cannot be infected.

All these balances, in the form of cutaneous "micro-ecology", are at the heart of the propagation mechanisms of the numerous nosocomial diseases. It has been demonstrated that increasing hand washing frequency (or application of anti-bacterial gels) is sufficient to result in a sharp drop in the prevalence of these infections in hospitals.
These microbiological aspects are therefore at the center of the hygiene-moisturizing duality: a properly moisturized, i.e. perfectly organized stratum corneum, is the very first line of hygienic defense.

c. Functions of the skin biofilm

The microorganisms living on and in human skin, and their diversity, help control the balance which characterizes "healthy" skin. This biofilm protects the body against infections. In its normal condition, it causes no infection whatsoever in healthy individuals. This is due to the presence of genuine bacterial homeostasis.
In the event of imbalance or injury, the biofilm can evolve into a pathological situation.
It is positive for the healing and homeostasis of the skin. These bacteria indirectly maintain our immune system, stimulate phagocytosis and the production of antibodies as well as cytokines. In addition, symbiotic microflora produces bacteriocins, i.e. bacterial polypeptides with bactericidal properties which prevent other, often pathogenic bacteria (Gram-positive) from colonizing the skin. The bacterial activity can however, when deregulated, help prevent healing (chronic wound) or prevent the appearance or perpetuation of various forms of dermatosis or abscesses.
The bacteria of the skin biofilm only become pathogenic in immunocompromised individuals (AIDS/HIV, drug addicts, immunosuppressive therapy, newborns, etc.) or sometimes in healthy patients, in case of a ruptured skin barrier or mucous membranes: injuries, burns, etc. It is often skin bacteria, naturally fairly resilient, which can cause nosocomial diseases by penetrating the body via catheters, or by colonizing vulnerable areas, including the eye.
While the human skin biofilm is still being studied, resident skin flora, organized in the form of biofilms, is beneficial to the host as it protects them against the invasion and colonization of pathogenic bacteria. Any modification in the balance of bacterial flora, in other words any rupture in bacterial homeostasis, results in skin disorders and causes dermatosis.

2. FOCUS ON THE EPIDERMIS

If the epidermis is not healthy, acting on the skin's deeper layers is pointless.
In simple terms, the skin can be compared with a house: if the roof is poorly constructed and provides no protection against external attack, all the elements inside will be subject to stressful situations and will become vulnerable.
To achieve genuine results, we must start by taking a look at the epidermis. We know that by creating an ideal surface environment, we can help the skin develop in a healthy and harmonious manner.
The epidermis acts as the interface between the outside world and our inner environment. It protects our body against environmental damage on a daily basis. It is not just a layer of dead or dying cells but a dynamic structure which plays a prominent role in the overall body defense system.

d. Role of exfoliation

Most in-depth desquamations must be considered as medical procedures subject to rigorous restrictions. In-depth exfoliation results in the destruction, elimination and regeneration of the skin cells. Theoretically, the quality of these new cells should be better than that of the destroyed cells. However, when we perform aggressive desquamations and micro-dermabrasions, we damage our epidermis. These excessively irritating treatments fail to protect the skin and can cause burns and hyperpigmentation. Although desquamations and micro-dermabrasions can be instrumental in certain overall rejuvenating programs, we should not always subject our skin to this type of aggression. Exfoliation is the cornerstone of an effective treatment.
Biologique Recherche encourages its clients to opt for a treatment based on a mild chemical peel to be applied twice a day to remove the superfluous keratin from the horny layer, rather than perform less frequent but more traumatic exfoliations. The skin can be exfoliated every day using fruit acid or lactic acid based products (P50 Lotion and MC110 Lotion). This is the best way to control exfoliation. Using low acid concentrations helps eliminate the bonds that retain the external cells and gives rise to new cells, perfectly capable of performing their protective function.

e. Appropriate pH

The first thing to consider when treating the epidermis is the pH balance. Preserving a balanced pH helps create an ideal environment on the skin surface.
The skin's ideal pH is slightly acid, at 4.7 to 6.5 on the pH scale (7 is a neutral pH).
This value varies depending on the Skin Instant, i.e.:

SKIN INSTANTS	PH	CONSEQUENCES
NORMAL SKIN	Around 6.5	This means that it is neither too acid nor not acid enough, and that normal products are suitable as they help maintain its balance.
DRY SKIN	Under 6.5	It is therefore slightly acid, which is why it must be nourished a lot.
OILY SKIN	Over 6.5	Therefore the acidity level of this skin may have to be increased.

Pathogenic bacteria develop in alkaline environments (basic). Acidity helps control their proliferation on the skin surface. Maintaining an acid pH in your clients with acne prone skin helps control the development of pathogenic bacteria and reduce irritation around the skin pores.
The skin can regain an acid pH after being exposed to an alkaline product. However, the older and more stressed the skin is, the longer it takes to return to its state of equilibrium.
Certain commercial soaps and cleansing products are very basic and unbalance the skin's pH. Furthermore, in some cases, they eliminate the hydrolipidic film on the surface and leave the epidermis unprotected, and therefore vulnerable.

The P50 Lotions are specifically formulated to help the skin achieve an ideal acid pH. They balance the pH on the skin surface without drying or attacking the skin. They also have exfoliating and moisturizing properties.

f. Focus on the horny layer

The horny layer is made up of dead, flat and uneven cells. It is important to create an optimal environment to guarantee their cohesion until they become mature.
The corneocytes are often fused to each other by a lipid junction system (intercellular cement) which constitutes a protective wall responsible for defending the body. In the absence of intercellular cement, the skin loses its water.
Recent research has shown to what extent lipids and their structure affect the skin's barrier function. All skin disorders, such as dry skin or irritation, can be attributed to a low concentration in these specific phospholipids.
The use of cosmetics containing elements similar to those contained in the intercellular cement helps preserve the optimal condition of the horny layer.
Biologique Recherche's creams are rich in amino acids, glycoproteins and essential fatty acids, and help reinforce the intercellular cement, rebuild the structure of the skin barrier and protect the skin against attack to limit water loss.

g. Natural Moisturizing Factors (NMF)

The skin is capable of maintaining its moisture level unaided: in the horny layer, the water is fixed to intracellular water-soluble and hygroscopic substances called Natural Moisturizing Factors or NMF, formed during the epidermal differentiation process.
NMFs are made up of water-soluble substances such as Amino Acids, Urea and Lactic Acid, Pyrrolidone Carboxylic Acid (PCA), as well as carbohydrates and mineral ions (chloride, sodium, potassium). They have strong osmotic properties, attracting and fixing water molecules. Exposure to UV rays, disease and old age can lead to a reduction in the amount of NMFs.
Adequate moisturizing of the horny layer serves 3 principal purposes: maintaining the skin's plasticity, contributing to the optimal functioning of the horny layer barrier and, more importantly, ensuring the proper functioning of hydrolytic enzymes in the desquamation process.

Most of Biologique Recherche's products contain NMFs, as well as exfoliating agents to provide a balance with purifying agents and avoid attacking the skin.

h. Structuring healthy skin

A well balanced and reinforced epidermis leads to healthy, radiant skin. Specific products must be selected for these "Skin instants", taking the epidermis into account to carefully preserve this delicate envelope. Any treatment which is subsequently followed will be more effective if the epidermis is functioning properly. If your client wishes to use invasive cosmetic or medical treatments, you can help them improve the condition of their epidermis before and after the procedures, and support them throughout their treatment to achieve maximum results.
It is important to respect the epidermis and understand how it works so as to reinforce it and ensure good skin quality.

3. THE SKIN DIAGNOSIS

Before recommending any product to a client, a skin diagnosis must be performed, by following a number of steps, always starting with the forehead and focusing on one side of the face, and then the other.

A. MANUAL DIAGNOSIS

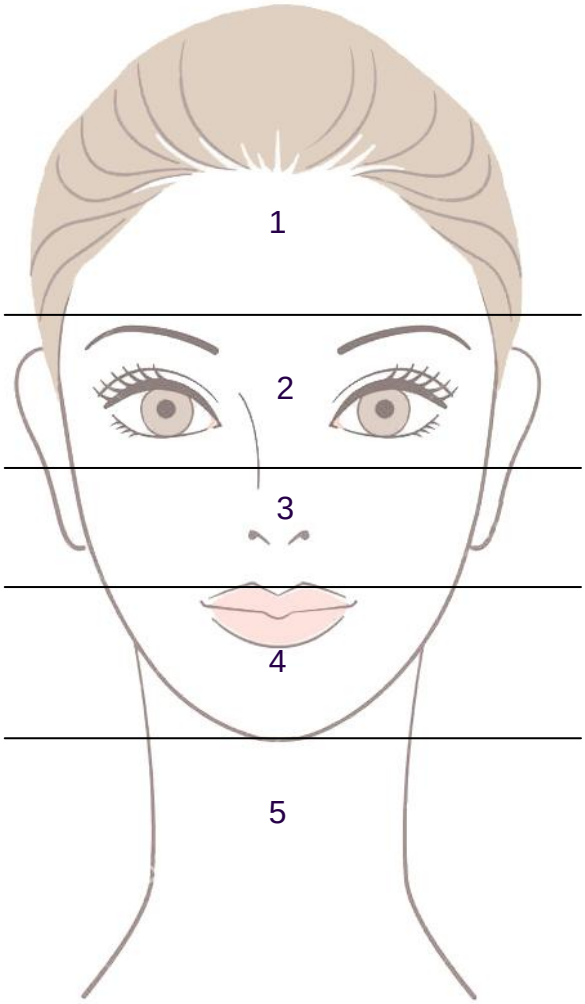
An accurate diagnosis involves the different steps mentioned below to analyze all parts of the face.
Always start with the forehead and go down, one area at a time, until you reach the neckline. This tactile and visual analysis will help you adapt and customize the treatments in the beauty salon as well as the products recommended.

Step 1: introductory questions

- Is your skin sensitive to sudden changes in temperature?
- Are you regularly exposed to the sun?
- Do you live in a polluted environment?
- Do you play any sport?
- Do you feel stressed?
- Are you a smoker or do you live in a smoking environment?
- Do you sometimes suffer from sleep deprivation?
- Do you have any known allergies?
- Do you feel the need to change the texture of your daily skin care product according to the season?
- What products do you use at home?
- What areas of your face are you bothered by?

Step 2: divide the face into observation areas

1. Forehead area
2. Eye contour area
3. Nose and cheekbone area
4. Nasolabial folds and facial contour area
5. Neck and décolleté area



Step 3: visual and tactile diagnosis

	VISUAL DIAGNOSIS	TACTILE DIAGNOSIS
1. FOREHEAD AREA	▪ See if presence of lines and wrinkles ▪ See if presence of large pores ▪ See if glowing and presence of sebum, cysts or blemishes	▪ Touch to see if presence of sebum ▪ If yes, evaluate the asphyxiation of the skin and the extend of the acne on the T-zone (forehead, nose, chin), chest, behind the ears, shoulders, back and base of the hair => whether it will also act on the body and the hair to have a visible result on the face ▪ Touch is soft = skin well hydrated
2. CONTOUR OF THE EYES AREA	▪ Look at the color of dark circles ▪ See if pockets under the eye ▪ See if presence of wrinkles in the crow's feet ▪ See if presence of wrinkles at the frown line ▪ See if there is a sagging of the upper eyelid	▪ Perform a pressure in the middle of the dark circle : to see whether or not significant swelling + if they are white and accompanied by little swellings = lymphatic system disorder ▪ Perform a large pinching on the crow's feet to see if the skin will quickly fall into place = if not, it is deshydrated ▪ Hold the skin on the brow bone and release to analyze the skin tone ▪ Perform Jacquet pinching on the ouside of the eye to study the skin tone

	VISUAL DIAGNOSIS	TACTILE DIAGNOSIS
3. NOSE AND CHEEKS AREA	▪ Look at the nose if presence of sebum, vessels or dryness ▪ Look if presence or not of redness / rosacea on the cheeks ▪ Look if presence of lack of structure at the cheekbones	▪ Touch the cheeks to feel the temperature of the skin : if warm rosacea skin, if cold no problem of rosacea ▪ Discard the cheekbones skin to observe the vessels capillaries and assess the serverity of rosacea : the more the red area becomes whiter the less the stage is advanced ▪ Conduct Jacquet pinching on both sides of the cheekbones to watch the skin tone
4. LOWER FACE AND NASOLABIAL FOLDS AREA	▪ See if furrows are marked ▪ See if the contour of the lips presents wrinkles ▪ See if presence of imperfections or cysts on the chin ▪ See if the skin of the lower face loses structure and volume ▪ See if the lips are in need of nutrition and present chapping	▪ Assess the skin tone by making big pressures with pulses ▪ Assess the firmness by making pinching on the lower cheeks on both sides of the face to the ears, under the chin, the neck and neckline

	VISUAL DIAGNOSIS	TACTILE DIAGNOSIS
5. NECK AND NECKLINE AREA	▪ See if presence of sagging on the lower jaw and double chin ▪ See if presence of a neck ring ▪ See if presence of spots and bust sagging	
WHOLE FACE: SPOTS	▪ See if presence of pigmentaries spots ▪ See if the complexion is uniform	▪ Evaluate the type or depth of thoses spots, beautician or doctors have to use a Wood lamp : if the spot becomes darker under the lamp, it is a pigmentary spot (70% of the cases). But if it stay identical, it is a dermical one and is therefore deeper

	VISUAL DIAGNOSIS	TACTILE DIAGNOSIS
WHOLE FACE: SENSIBLE SKIN		▪ If the skin is warm, with rednessess and obvious vessels = the skin is sensible
WHOLE FACE: THICK SKIN		▪ Do a pinching and see if their is consistency or not
WHOLE FACE : KERATINIZED SKIN	▪ See if the complexion is dull and extinguished	

B. SKIN INSTANT LAB DIAGNOSIS

The Skin Instant Lab can be used in addition to the manual diagnosis. A pillar of the Biologique Recherche Methodology, this unique analysis, diagnosis and prescription of products and treatments system also helps monitor the developments of the Skin Instant© over time for proactive assistance with the proposed treatments.
The Skin Instant© Lab consists of 5 measurement probes (Moisturizing, Transepidermal Water Loss, Elasticity, Pigmentation, Sebumetry) connected to a computer equipped with exclusive diagnosis and analysis software developed by Biologique Recherche. Based on our expert's dermo-cosmetic analysis and documented measurements, the Skin Instant ©Lab, connected to Biologique Recherche's database, will propose a selection of Biologique Recherche products and treatments perfectly suited to the Skin Instant©.
All client data (measurement results, questionnaire results and products and treatments recommended) are summarized in a dermocosmetic file that you can print and give to your client, and save with a view to assessing the development of your client's Skin Instant© over time.

4. THE DIFFERENT "SKIN INSTANTS" OF THE FACE

The skin's physiology, in particular that of the face, changes over time, sometimes very quickly. This is why Biologique Recherche uses the term "Skin Instant". No two individuals have the same skin. Everyone has their own unique genetic heritage, their own lifestyle, and reacts differently to the environment, stress and aging. The skin changes naturally with age but can also vary depending on many factors such as the weather, the temperature, air conditioning, tobacco, pollution, hormones, stress, etc.
Because of these variations, choosing cosmetic products is a complex process as all these features must be taken into account, and cosmetics cannot always be identical. This is why Biologique Recherche's techniques and professionals are there to analyze the different variables and recommend the most suitable personalized care treatment.

A. NORMAL AND REGULATED SKIN INSTANTS

Definition
Ideal, supple and elastic skin, with a velvety and smooth appearance, a refined texture and tight pores with no sebaceous orifices. It resembles the skin of pre-pubescent children.

Treatment
- Cleanse the face in the morning and evening
- Moisturize the skin every day and protect it against pollution, the sun and harsh weather conditions
- Apply a light moisturizing cream

B. DRY SKIN INSTANTS

Definition
Thin, sometimes dull skin with a refined texture and tight pores. Skin prone to dryness lacks softness and suppleness; it is often a source of tightness and discomfort.
The skin suffers from a significant reduction in moisture level as well as a lack of lipids in the horny layer. Dry skin characteristics intensify with age.

Main causes
1. **Heredity:** due to certain diseases (atopic eczema, ichthyosis), the skin can become rough and coarse to the touch, and can peel in an abnormal manner.
2. **Age:** the reduced secretion of sebum and sweat increases water loss. This is common in 40 to 45 year-old

women

3. **External attack:** lack of water in the horny layer and the alteration of the hydrolipidic film on the surface can be caused by heat or dry cold, soaps which are too detergent, prolonged or repeated contact with water. Skin prone to dryness is essentially dehydrated

Actions

- Rebuild the hydrolipidic film
- Increase water concentration in the skin
- Reduce the skin's water loss
- Provide a durable well-being effect
- Protect, nourish and soften the epidermis
- Do not cleanse the skin with hard water or overly harsh soaps
- Do not use astringent lotions, even with low alcohol content

Treatment

- Cleanse the face with a cleansing milk
- Rinse off the cleansing milk with a moisturizing lotion
- Apply a moisturizing and nourishing day cream on a daily basis
- Use a moisturizing, soothing and regenerating night cream to repair the damage suffered and restore the skin
- Use a specific nourishing mask once to twice a week to smooth out fine lines and enhance the resilience of the epidermis against the harmful effects of the environment

C. SEBORRHEIC SKIN INSTANTS

Definition

Seborrheic Skin instants are characterized by their oily and shiny appearance, with a thick texture and dilated pores, due in particular to their elevated alkaline pH (up to 7.5). The skin suffers from permanent excess sebum, which ultimately causes the horny layer to thicken. This type of skin often has skin blemishes such as blackheads or whiteheads. In addition, it features an excessive number of dead cells, which normally peel off: excess sebum and dead cells obstruct the skin pores.

Skin prone to seborrhea also suffers from sensations of discomfort, frequently aggravated by the use of unsuitable cosmetics which irritate the epidermis. The build-up of bacteria results in the transformation of sebum into fatty acids which cause the skin's pH to drop. The low pH level creates irritation around the skin pores.

The use of abrasive products can, in some cases, increase the imbalance of the skin, resulting in the

abnormally high production of sebum. This phenomenon is known as reactive seborrhea.
Conversely, skin prone to seborrhea is more tolerant of the sun and tans easily. It ages less quickly and wrinkles appear at a later stage but are deeper.
Nevertheless, this type of skin needs water and therefore hydration.

Main causes

Endogenous factors

- **Hormonal factors:** the sebaceous glands, the activity of which depends on androgens, produce excess sebum. Sebaceous secretions increase during adolescence as well as during the day, peaking from 12.00pm to 3.00pm.
- **Heredity** determines the size and activity of the sebaceous glands.
- **The stress** of daily life, due to a frantic lifestyle.
- **Eating habits:** overly fatty, sweet or spicy food, alcohol or irregular meal times can alter the activity of the sebaceous glands.

Exogenous factors

- **Warm climates:** exposure to the sun, air conditioning and pollution.
- **Use of aggressive cosmetics:** exfoliating too much skin can cause reactive seborrhea. In this case, the more skin we exfoliate, the oiler it gets.

Actions

- Cleanse, purify and regularize the bacterial imbalance of the skin flora
- Balance sebaceous secretions
- Enhance the resilience and natural protection of the skin
- Tighten the pores
- Reduce inflammation, calm and soothe
- Reduce shine

Treatment

- Cleanse the skin using very mild products in the morning and evening
- Apply a specific lotion
- Apply a non-greasy, protective, matifying cream containing anti-inflammatory, antiseptic, purifying, moisturizing, sebo-regulating and non-comedogenic active ingredients
- Use a mask (once to twice a week) to lighten the complexion and soften the skin
- Do not cleanse the skin with overly aggressive detergent soaps which aggravate seborrhea
- Do not remove spots and blackheads as this could result in infection and scarring

D. COMBINATION SKIN INSTANTS

Definition
Combination skin has the characteristics of skin prone to seborrhea in the T zone (dilated pores, impurities, blackheads, shiny appearance) and skin prone to dehydration on the rest of the face (less shiny appearance, tight pores, occasional sensation of tightness and discomfort, pH higher than 4.7).

It should be pointed out that combination skin is easily dehydrated, especially during season changes.

Main causes
- The sebaceous glands of the T zone are more numerous and more active
- Use of aggressive cosmetics

Actions
- Cleanse the skin every day in a suitable manner
- Rebalance the skin by regulating the sebum flows
- Keep the skin moisturized and protected with moisturizing active ingredients

Treatment
- A mask on oily areas to cleanse and purify the skin by removing impurities. Once a week in winter and twice a week in summer
- A protective cream during exposure to inclement weather or the sun
- A non-greasy moisturizing cream with a fluid texture to rehydrate the epidermis
- Do not cleanse the skin with overly aggressive detergent soaps which aggravate seborrhea
- Do not remove spots and blackheads as this could result in infection and scarring

E. DEHYDRATED SKIN INSTANTS

Hydration is a phenomenon which can be described as a constant flow of water from the dermis to the epidermis.
Skin hydration is regulated in 3 ways:
- The hydrolipidic film on the surface limits water evaporation
- The intercellular lipidic cement helps retain water in the horny layer
- The NMF contained in the corneocytes ensures the capture of water by the cells of the horny layer

Therefore the skin's hydration level results from the balance between water intake, capture, retention and evaporation.
The sun, wind, cold, periods of fatigue or stress, and overly aggressive skin care products are factors likely to alter the water balance of the skin.
Dehydration is a genuine gateway for wrinkles, as the horny layer contracts, becomes sunken and more wrinkled and signs of cutaneous aging are visibly exacerbated. This is why the skin must be properly moisturized to help it cope with the passage of time.

Definition
The skin can be dehydrated at any age, whether it is dry or prone to seborrhea. Dehydration is a physiological condition of the skin and is generally temporary.
Dehydrated skin results from the skin's inability to maintain an optimal water level.
A dehydrated skin instant is characterized by:

- Lack of moisture on the skin surface
- Appearance similar to crepe paper
- Fine horizontal wrinkles in fragile areas (such as the eye contour)
- Dull complexion, lacking radiance
- Sensations of tightness

Main causes
- Air conditioning
- Climate (sun, wind)
- Use of aggressive cosmetics
- Diuretics
- Limited water consumption
- Aging skin (deficiency of the skin's hydrolipidic film and loss of NMF)

Actions
- Rapidly rehydrate the skin using suitable products to rebuild the hydrolipidic film
- Help the skin maintain its level of hydration by enriching it with a hydroscopic substance such as the NMF (Natural Moisturizing Factor)
- Restructure the horny layer
- Facilitate water fixation and circulation

E. SENSITIVE OR REACTIVE SKIN INSTANTS

Definition
It should be pointed out that this skin instant is the most frequent worldwide, as 154 million women claim they suffer from sensitive skin, including:
- 55% of European women
- 50 to 60% of American women
- Approximately 65% of Japanese women

Sensitive or reactive skin is generally similar to other skin types in terms of structure and appearance, but reacts quickly to stress (climate, cosmetics, etc.) and is prone to redness. Every skin type can be affected by this hyperactivity, which is particularly difficult to treat as it is linked to multiple factors. While the cause is not hereditary (family suffering from allergy disorders), sensitive skin is often temporary and characterized by:

- Redness in the T zone, around the nose, forehead and chin
- Sensations of tingling, itching and tightness
- Skin type aggravation. Dry skin becomes drier and flakes off when it reacts, while oily skin becomes oiler and generates impurities

Factors
Sensitive skin can be considered hyper reactive and is exposed to 2 types of stress: internal and external.

- External factors (relating to the environment):
- **Pollution**: recognized by dermatologists as the no. 1 cause of sensitive skin. This is confirmed by the larger number of reactive skin cases in industrialized countries. Airborne pollution in the carbon monoxide released by cars is responsible for increasing skin instability as well as the greater sensitivity of allergic individuals
- **Inclement weather**: the sun, cold, wind and air conditioning
- **Lifestyle**: exposure to the sun, tobacco, alcohol, unhealthy diet, spices, general fatigue, stress
- **The use of certain cosmetics**, soaps or hygiene products unsuitable for the skin

These different factors cause minor damage. However, if their actions are repeated or combined, they can cause more significant and serious damage.
Recent findings have highlighted the key role of cell communication in the reaction phenomenon, and skin sensitization. When external stress factors emerge, such as irritating molecules caused by pollution, they bind to the receptors located on the membrane of the keratinocytes which pass on the message to the skin. These messengers immediately activate the cells responsible for the inflammation, which explains the sensation of tightness and burning of the skin.

- Internal stress factors:
- **Age**: the skin of children is more sensitive than that of adults, the reactivity of which often progressively decreases with age.
- **Type of skin**: Dry, thin and pale skin is often more reactive than other skin types; however, all skin types (combination, oily) can be intolerant to cosmetics. Statistically speaking, 40% of women suffering from sensitive skin have dry skin.
- **Hormonal factors**: women's skin tends to be more sensitive during the premenstrual period and their skin reactivity is modified during pregnancy.

These internal stress factors aggravate skin sensitivity and increase its reactivity. Major findings in the dermatological domain have highlighted the role of Merkel cells: Merkel cells are located in the basal layer of the epidermis. They form a bridge between the skin and the nervous system and are in contact with the nerve fibers. When an internal stress factor manifests itself, the nerve ending activates the Merkel cells, which transfer the message to the skin. These messengers create a chain reaction and activate the keratinocytes, which stimulate the cells responsible for the inflammation. The Merkel cells and nerve endings of the epidermis explain the redness and the sensation of discomfort.

Main causes

- Cleansing the skin with soap and water
- Repeated use of unsuitable cosmetics
- Excessive exposure to the sun, wind, cold, pollution
- Stress and fatigue
- Digestive problems
- Disease and medicinal products (in particular antibiotics)

Actions

- Create a sensation of comfort and refresh the skin
- Soften and desensitize
- Reinforce the skin's natural defenses and rebuild its structure

Treatment

- Apply a limited number of cosmetics
- Choose products with little or no fragrance
- Use non-rinse cleansing lotions. Don't forget to dry the skin by dabbing it with a paper tissue (not cotton)
- Opt for moisturizing creams with a light texture and which are easy to apply, or sometimes greasier creams such as cold creams. If you work in an air conditioned environment or in overheated areas, don't hesitate to apply these creams several times a day
- Protect the skin against temperature fluctuations, the sun and wind
- Avoid aggressive exfoliating agents
- If the application of a product triggers prolonged sensations of tingling and tightness, stop the application immediately