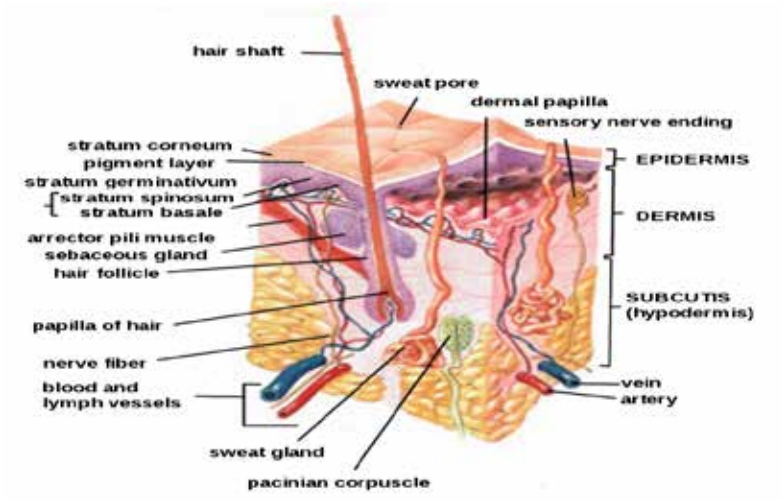
1- SKIN BIOLOGY

- *The epidermis*
- *The dermis*
- *Subcutaneous tissue*



The skin is the largest organ in the body, comprising about 15% of the body weight.
The total skin surface of an adult ranges from 0,9-2 square meters.
In terms of chemical composition, the skin is about 70% water, 25% protein and 2% lipids.
The skin consists of three main layers: epidermis, dermis and subcutaneous tissue

The epidermis

The epidermis is the topmost layer of the skin. It is the first barrier between you and the outside world.
The epidermis consists of three types of cells keratinocytes, melanocytes and Langerhans cells.
Keratinocytes, the cells that make the protein keratin, are the predominant type of cells in the epidermis. The total thikness of the epidermis is usually about 0.5 - 1 mm.
At the lowermost portion of the epidermis are immature, rapidly dividing keratinocytes. As they mature, keratinocytes lose water, flatten out and move upward. Eventually, at the end of their life cycle, they reach the uppermost layer of the epidermis called stratum corneum.
Stratum corneum consists mainly of dead keratinocytes, hardened proteins (keratins) and lipids, forming a protective crust. Dead cells from stratum corneum continuously slough off and are replaced by new ones coming from below. The skin completely renews itself every 3 - 5 weeks.
Another significant group of cell in the epidermis are melanocytes, the cells producing melanin, the pigment responsible for skin tone and color.
Finally, Langerhans cells are essentially a forepost of the immune system in the epidermis. They prevent unwanted foreing substances from penetrating the skin.
The condition of epidermis determines how "fresh" your skin looks and also how well your skin absorbs and holds moisture. Wrinkles, however, are formed in lower layers.

The dermis

The dermis is the middle layer of the skin located between the epidermis and subcutaneous tissue.
It is the thickest of the skin layers and comprises a tight, sturdy mesh of collagen and elastin fibers. Both collagen and elastin are critically important skin proteins: collagen is responsible for the structural support and elastin for the resilience of the skin.
The key type of cells in the dermis is fibroblasts, which synthesize collagen, elastin and other structural molecules. The proper function of fibroblasts is highly important for overall skin health. The dermis also contains capillaries and lymph nodes.
Finally, the dermis contains sebaceous glands, sweat glands, hair follicles as well as a relatively small number of nerve and muscle cells.
Sebaceous glands, located around hair follicles, are of particular importance for skin health as they produce sebum, an oily protective substance that lubricates and waterproofs the skin and hair. When sebaceous gland produce too little sebum, as is common in older people, the skin becomes excessively dry and more prone to wrinkling. Conversely, overproduction or improper composition of sebum, as is common in adolescents, often leads to acne.
The dermis is the layer responsible for the skin's structural integrity, elasticity and resilience. Wrinkles arise and develop in the dermis.
Therefore, an anti-wrinkle treatment has a chance to succeed only if it can reach as deep as the dermis.
Typical collagen and elastin creams, for example, never reach the dermis because collagen and elastin molecules are too large to penetrate

Subcutaneous tissue (HYPODERMIS)

Subcutaneous tissue is the innermost layer of the skin located under the dermis and consisting mainly of fat. The predominant type of cells in the subcutaneous tissue is adipocytes or fat cells.
Subcutaneous fat acts as a shock absorber and heat insulator. Interestingly, most mammals lack subcutaneous tissue because their fur serves as a shock absorber and heat insulator.
Sweat glands and minute muscles attached to hair follicles originate in subcutaneous tissue.
The loss of subcutaneous tissue, often occuring with age, leads to facial sag and accentuates wrinkles.

Basic rules for optimal skin care

A number of basic practices are essential for optimal skin care at any age. Skipping them is likely to undermine the rest of your routine.
Make sure you protect your skin from avoidable damage, particularly sun damage.
Establish a sensible basic daily routine matching your skin type.
Then determine whether you need any age-specific step

Every thing has its beauty, but not everyone can see it.
Confucius (551 BC-478 BC)