



HISTOLOGICAL STRUCTURE OF THE SKIN

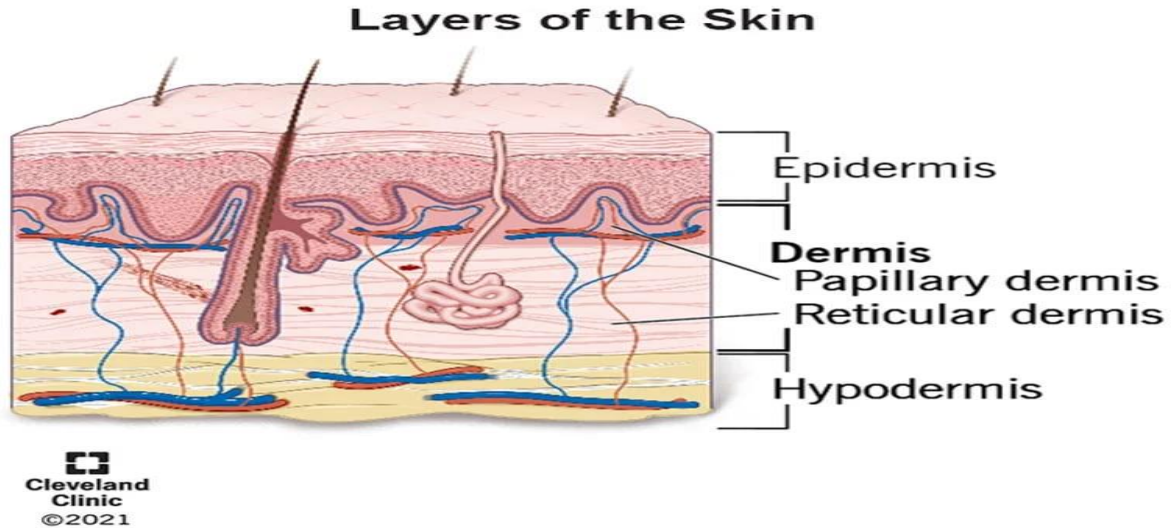
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Annotation

The skin and its appendages that derive from the epidermis (hair follicles, sweat glands, sebaceous glands, nails, and mammary glands) establish the integumentary system. Histologically, skin has two main layers—the epidermis and the dermis—with a subcutaneous fascia called the hypodermis, which lies deep in the dermis. The epidermis is formed of four to five layers of cells made mostly out of keratinocytes, along with three other different and less abundant cells. The dermis underlies the epidermis.

Key words: Epidermis, skin, dermis, hair, keratinocytes.

Epidermis , Four evident cells make the stratified squamous keratinized epithelium of the epidermis. Keratinocytes are the most frequent ones.³ Other less-abundant and nonepithelial cells are interspersed among the keratinocytes in specific locations. These cells are the melanin-producing melanocytes, tactile Merkel cells, and antigen-presenting Langerhans cells⁵ (Figure 6).



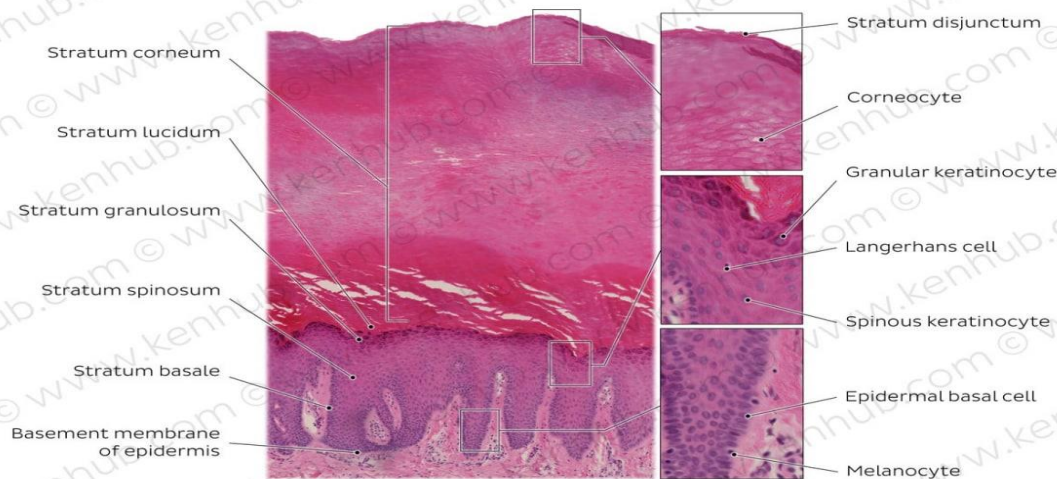
Dermis , The dermis derives from three different mesenchymal sources. The dermis of the face and neck derives from the neural crest, limbs and the body wall derive from the lateral plate mesoderm, and the back derives from the paraxial mesoderm.^{1., 7., 10.}

The dermis is the layer that supports, nourishes, and binds the epidermis to the hypodermis. It has a tough supporting fibroelastic tissue. The collagen bundles and other connective tissue elements of the dermis blend with those of the hypodermis,



Subcutaneous tissue, superficial fascia, hypodermis , Subcutaneous tissue is located beneath the reticular layer of the dermis and made up of a looser connective tissue. Generally, it transforms into subcutaneous adipose tissue. The adipose cells form a layer varying in thickness, which depends on its location in the body, sex, and the state of nutrition. Adipose tissue contributes to thermal insulation and storage of energy, and it acts as a shock absorber.

Glands , The skin glands are the sweat glands (eccrine, apocrine), sebaceous glands, and mammary glands.²⁴ Mammary glands are a specialized type of sweat glands. Sweat glands originate from the epidermis. They fold within themselves and invaginate towards the underlying dermis. The ducts of the eccrine sweat glands keep their communication with the surface of the skin, and apocrine sweat glands discharge into hair follicles where they originate. The eccrine and apocrine sweat glands show different Sebaceous glands , Sebaceous glands are absent in the hairless thick skin of the palms, soles, and the sides of the feet inferior to the hairline. They derive from hair follicles. They occur more frequently in the dermis of the face, forehead, and scalp. They are outgrowths of the external sheath of the hair follicle above the insertion point of the arrector pili muscle of the follicle. Usually more than one gland opens to one third of the upper portion of the hair follicles' canal. Secretory ducts open directly.



Skin receives an extensive amount of stimuli from the environment as touch, stretch, vibrations, pressure, heat, cold, and pain and has appropriately responding receptors located in its layers. These receptors are classified into three groups, according to the type of response: (1) mechanoreceptors for stretch, vibration, pressure and touch; (2) thermoreceptors for heat and cold; and (3) nociceptors for pain. Receptors are either capsulated or unencapsulated. They are located in various levels

Hair follicles derive from the epidermis, invaginate deeply into the dermis, and give rise to hairs. The three types of human hair are vellus hair, terminal hair and lanugo hair.^{1, 7., 10.} Vellus hair is short, fine, soft, and pale, as in the cover of the eyelids, and it is barely noticeable. It has no connection with



the sebaceous glands. Terminal hair is long, large, coarse, hard, and dark, as the ones of the scalp and eyebrow. Lanugo hair is extremely fine and found on the surface of a

When we consider the multiple functional demands of skin, it is natural to expect an extensive amount of plasma, lymph, and tissue fluid exchange in the connective tissue matrix of the skin. Due to this, skin has a rich network of blood and lymph vessels in the dermis and hypodermis. Two major blood plexuses nourish the skin. The deeper one is between the hypodermis and dermis, and the superficial one is between the papillary and reticular layers of the dermis. The superficial one supplies

Besides the well-known functions of our skin, the main function of facial skin is undoubtedly to reflect our identity and mood. With the unique features of our facial skin, our faces announce to the world who we are and what we are feeling. Sometimes a scar, the result of the physiological healing process of a deep wound, tells our story to others more than our name, as on Al Pacino's face in the unforgettable cult movie of Brian De Palma, *Scarface* (1983).

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