

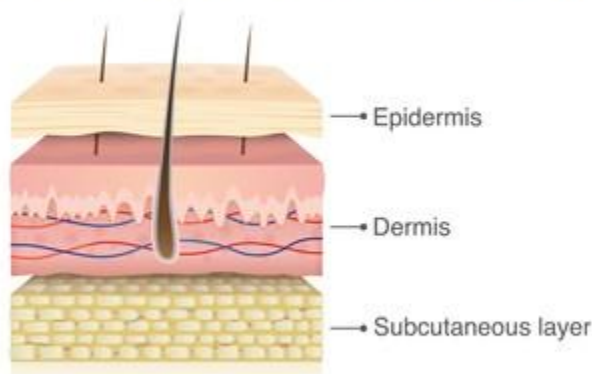
# The Skin

The skin is the largest single organ of the body, typically accounting for 15–20% of total body weight and, in adults, presenting 1.5–2 m<sup>2</sup> of surface to the external environment. Also known as the **integument** or **cutaneous layer**.

Skin has three layers:

- **The epidermis**, the outermost layer of skin, an epithelial layer of ectodermal origin.
- **The dermis**, beneath the epidermis, contains tough connective tissue, hair follicles, and sweat glands.
- The deeper subcutaneous tissue (**hypodermis**) is made of fat and loose connective tissue.

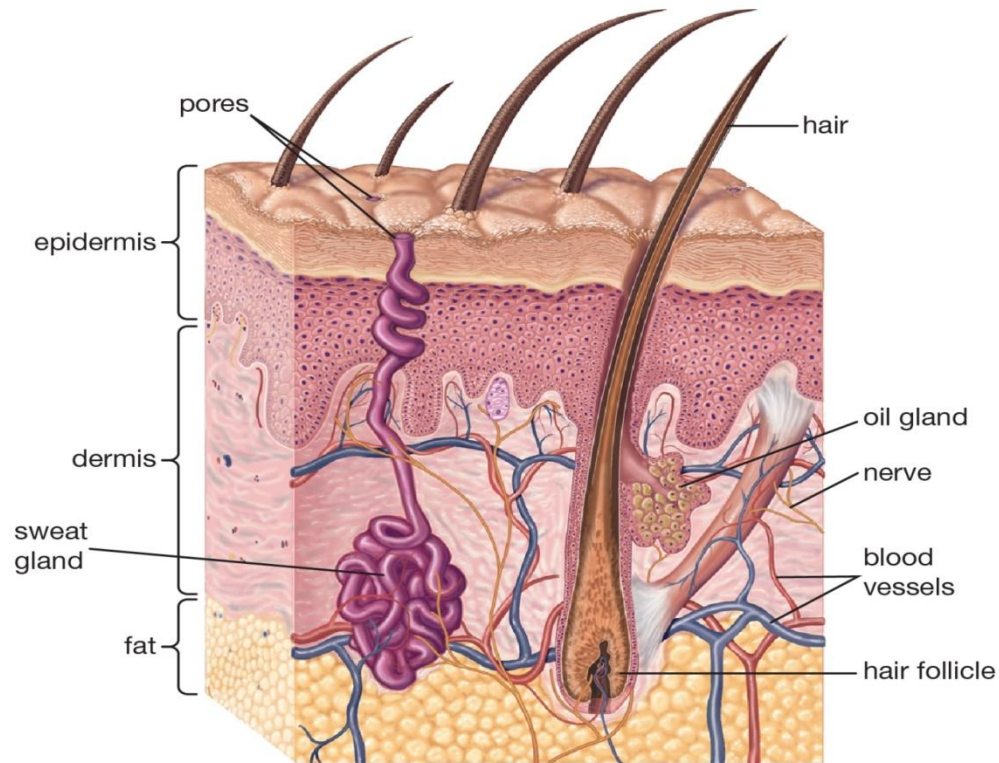
## Three Main Layers of The Skin



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### Epidermal derivatives include:

- Hairs
- Nails
- Sebaceous
- Sweat glands.



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The skin's color is created by special cells called melanocytes, which produce the pigment melanin. Melanocytes are located in the epidermis.

### The specific functions of the skin

- 1- **Protective**
- 2- **Sensory**
- 3- **Thermoregulatory**

4- Metabolic

5- Sexual signaling

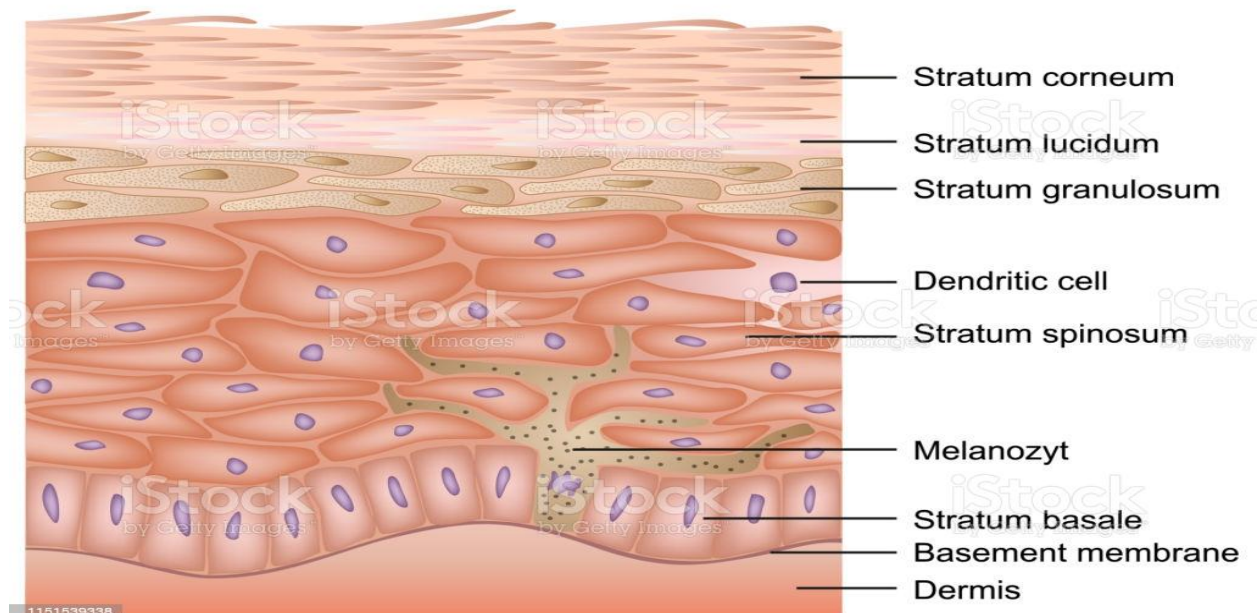
## Epidermis

The epidermis consists mainly of a stratified squamous keratinized epithelium composed of cells called **keratinocytes**.

There are also three much less abundant epidermal cell types:

- ❖ pigment-producing **melanocytes**
- ❖ antigen-presenting **Langerhans cells** and
- ❖ tactile epithelial cells called **Merkel cells**

## Structure of the Epidermis





## Dermis

The dermis is the layer of connective tissue that supports the epidermis and binds it to the subcutaneous tissue (hypodermis). The surface of the dermis is very irregular and has many projections (dermal papillae) that interdigitate with projections of the epidermis, especially in skin subject to frequent pressure, where they reinforce the dermal-epidermal junction.

The dermis contains two sub-layers

- The thin **papillary layer**, which includes the dermal papillae, consists of loose connective tissue, with types I and III collagen fibers, fibroblasts and scattered mast cells, dendritic cells, and leukocytes.

- The underlying **reticular layer** is much thicker, consists of dense irregular connective tissue (mainly bundles of type I collagen), with more fibers and fewer cells than the papillary layer. A network of elastic fibers is also present providing elasticity to the skin.