



## **Skin (integumentary system):**

### **Introduction**

- ❖ The integumentary system is the largest organ of the body that forms a physical barrier between the external environment and the internal environment that it serves to protect and maintain. The integumentary system includes the epidermis, dermis, hypodermis, associated glands, hair, and nails. Its functions include **temperature regulation and protection against ultraviolet (UV) light, trauma, pathogens, microorganisms, and toxins.**

- ✓ **Anatomy of the Integumentary System**

- ✓ **The integumentary system includes:**

- ✓ Skin
- ✓ Hair
- ✓ Nails
- ✓ Exocrine glands
- ✓ Sensory nerve

### **Layers of Skin:**

- ❖ The epidermis
- ❖ The dermis
- ❖ Hypodermis (subcutaneous tissue)



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- ✓ **The epidermis:** The epidermis is the thin, outer layer of the skin that is visible to the eye and works to provide protection for the body. This part of the skin does not contain any blood vessels and is, therefore, dependent on the dermis, which is the layer of the skin located directly underneath the epidermis, to provide access to nutrients and dispose of waste.
- ✓ **Cells in the epidermis:**
- ✓ **Keratinocytes:** Produce keratin for strength
- ✓ **Melanocyte cell:** skin color
- ✓ **Merkel's cells:** sensory function
- ✓ **Langerhans' cells :** skin first line defenders.
- ✓ **Layers of epidermis:**
- ✓ The epidermis consists of stratified squamous epithelial cells.  
There are four layers of the epidermis, according to the maturation of the cells:
  - ✓ **Stratum germinativum**
  - ✓ **Stratum spinosum**
  - ✓ **Stratum granulosum**
  - ✓ **Stratum corneum**
- ✓ **The dermis:** The dermis is the layer of skin that lies beneath the epidermis and above the subcutaneous layer. It is the thickest layer of the skin, and is made up of fibrous and elastic tissue. Thus it provides strength and flexibility to the skin.



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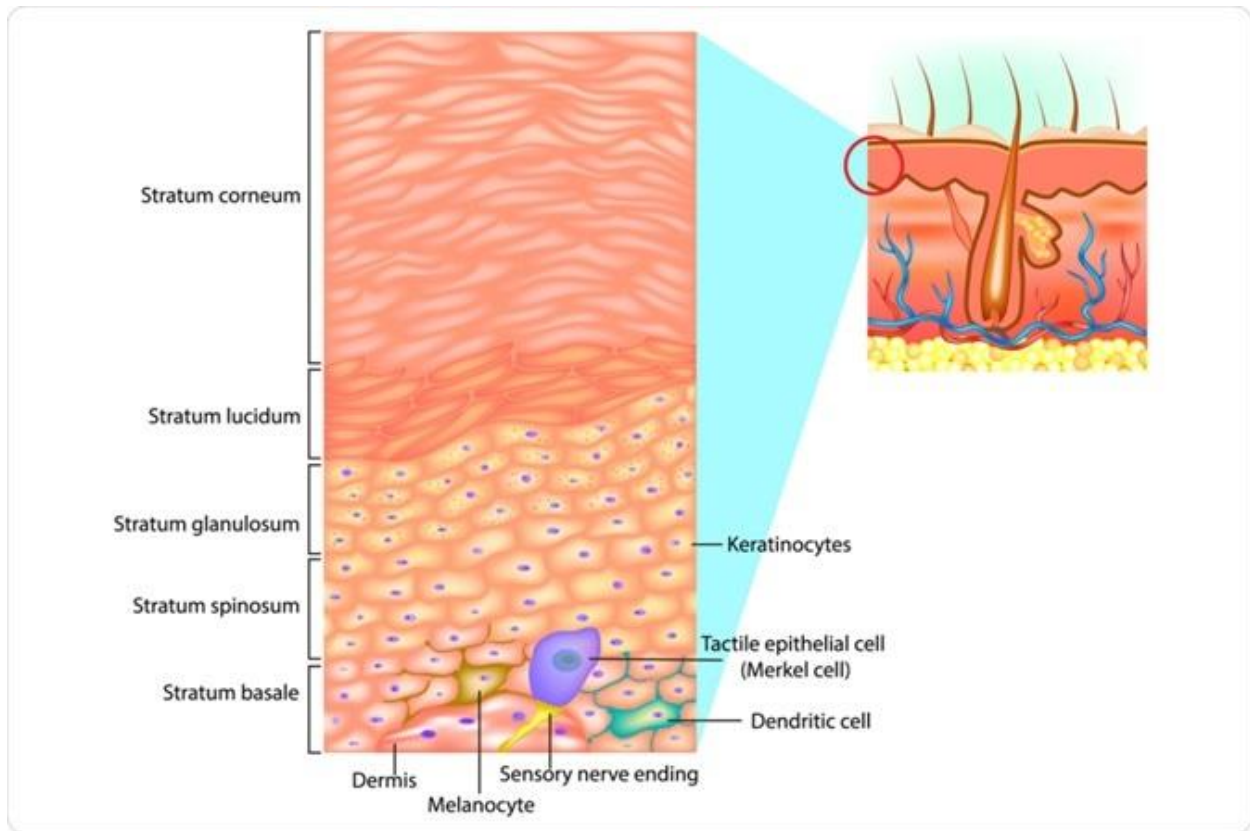
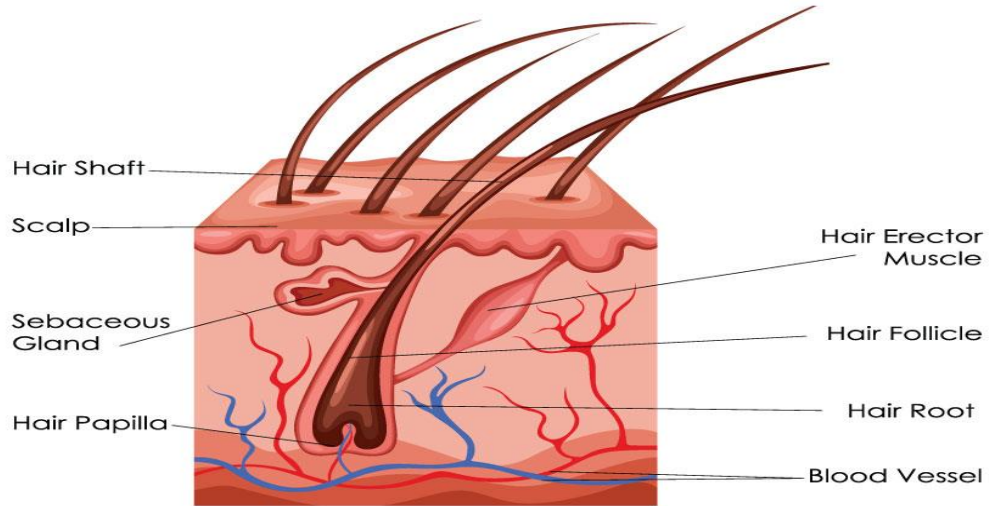
- ✓ **Type of layer**
- ✓ papillary layer (superficial)
- ✓ Reticular layer (deeper)
- ✓ **Type of cells in dermis are :**
- ✓ Fibroblasts
- ✓ Mast cell
- ✓ Vascular smooth muscle cells

**Hypodermis:**

Subcutaneous tissue is the deepest skin layer that lies closest to the muscle. This layer has other names, including superficial fascia, hypodermis, sub cutis.

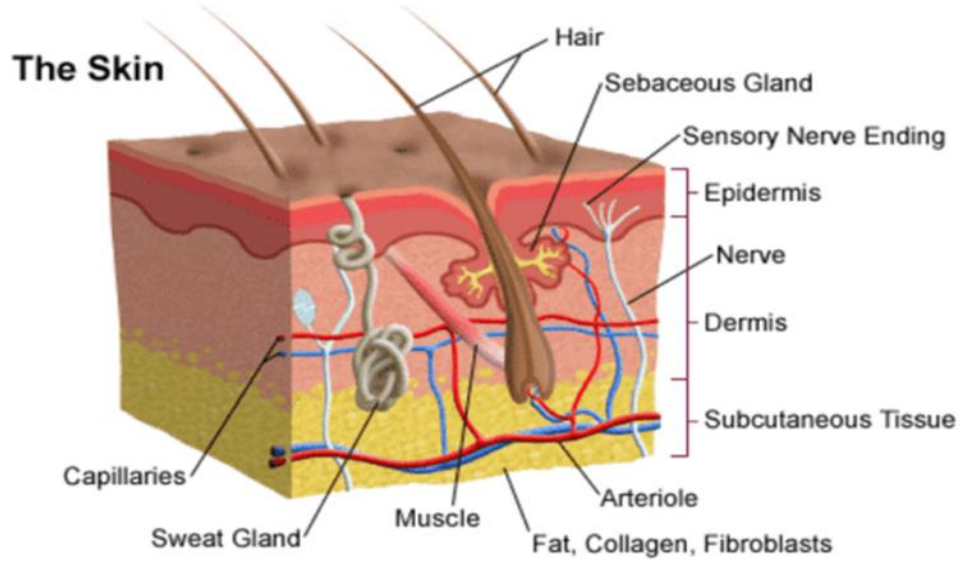
**The subcutaneous layer** consists mainly of fat. The fat forms a layer that insulates the body from cold and helps absorb shock and damage to the internal organs. It also provides structural support for the skin.

# Hair Follicle





## SKIN AND BODY MEMBRANES INTEGUMENTARY SYSTEM



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