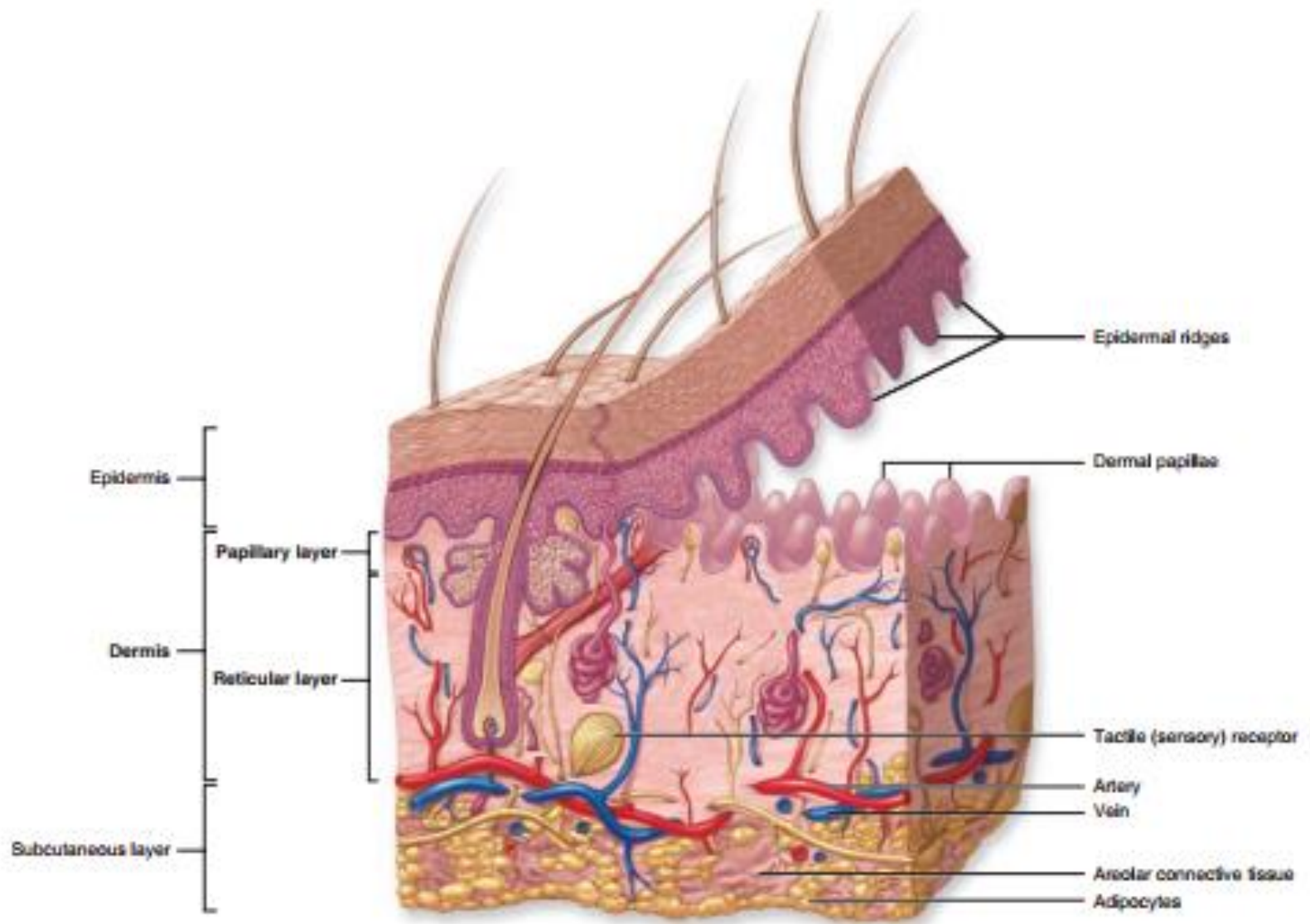


# The Skin

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Diagrammatic overview of skin, showing the major layers and epidermal appendages (hair follicles, sweat, and

sebaceous glands), the vasculature, and the major sensory receptors.



The skin is the largest organ of the human body

Typically accounting for 15%-20% of total body weight and, in adults, presenting 1.5-2 m<sup>2</sup> of body surface.

Skin is composed of two main parts:

**A- Epidermis:** consists of a stratified squamous keratinized epithelium tissues and three epidermal cell types.

1- Melanocytes: (Pigment Producing Cells) such as

Eumelanin: Brownish color

Pheomelanin: dusky color

Carotene: yellowish color



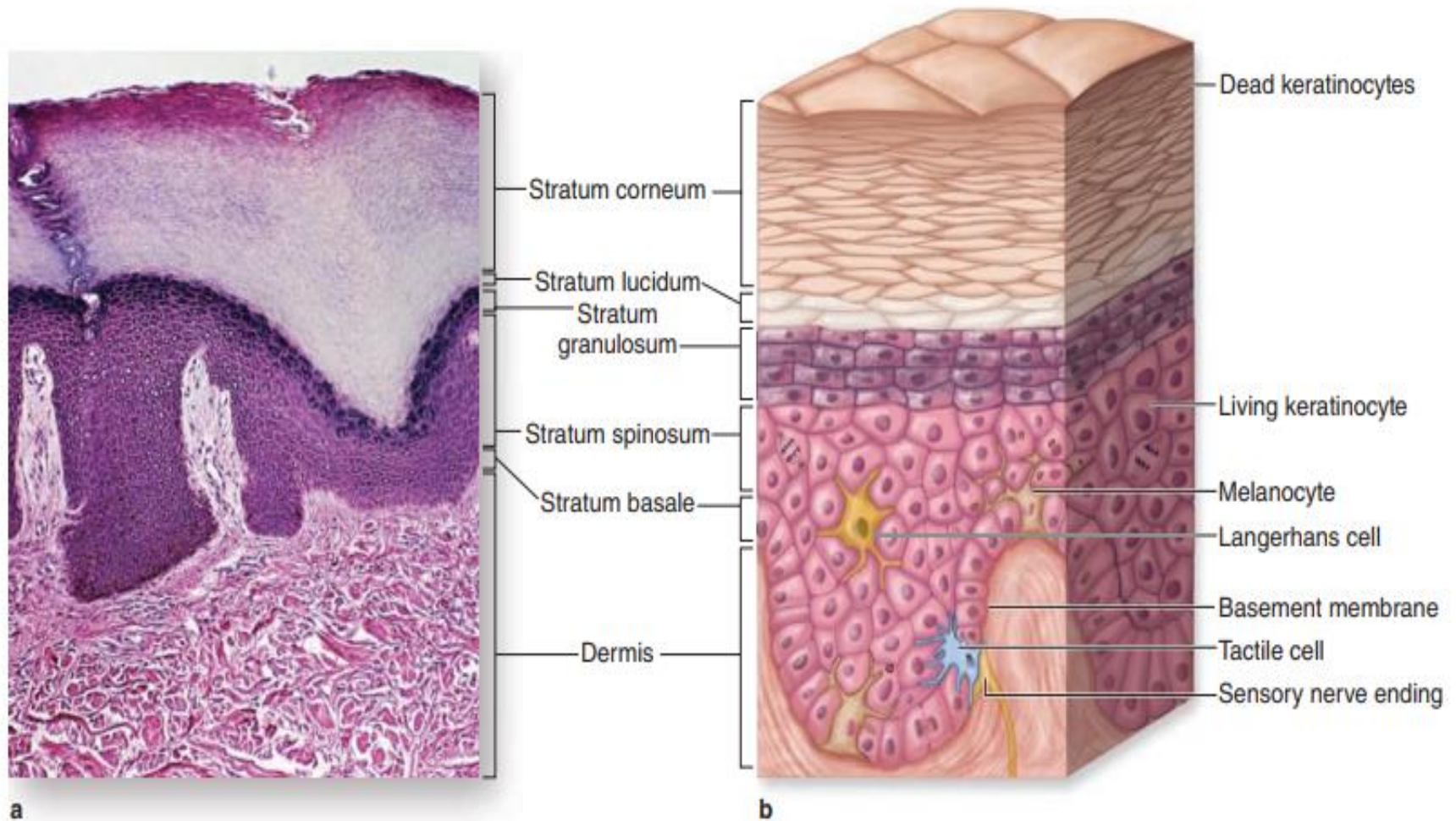
2- Langerhans cells (Dendritic cells): it is the antigen-presenting cells produced by bone marrow

3- Merkel cells (Tactile cells) are mechanoreceptors

- With keratin filaments in their cytoplasm.
- Located in the basal epidermal layer and at the bases of hair follicles for the sense of touch functions



**FIGURE 18-2** Layers (strata) of epidermis in thick skin.





**B- Dermis:** represents the connective tissue that supports the epidermis and binds it to the subcutaneous tissue.

- Dermis is irregular and has many projections that are more dense in skin that is subjected to pressure
- Subcutaneous tissue consists of loose connective tissue that bind skin to slide over them. The rich vascular supply in this part helps rapid uptake of insulin and other drugs injected in this region.



# Vessels and sensory receptors in skin

- Connective tissue of skin contains a rich network of blood and lymphatic vessels.
- Dermal vascular has thermoregulatory function
- Skin has a variety of sensory receptors such as
  - 1- Tactile discs: receptors of light touch
  - 2-Free nerve ending: respond to high and low temperature, pain and itching.



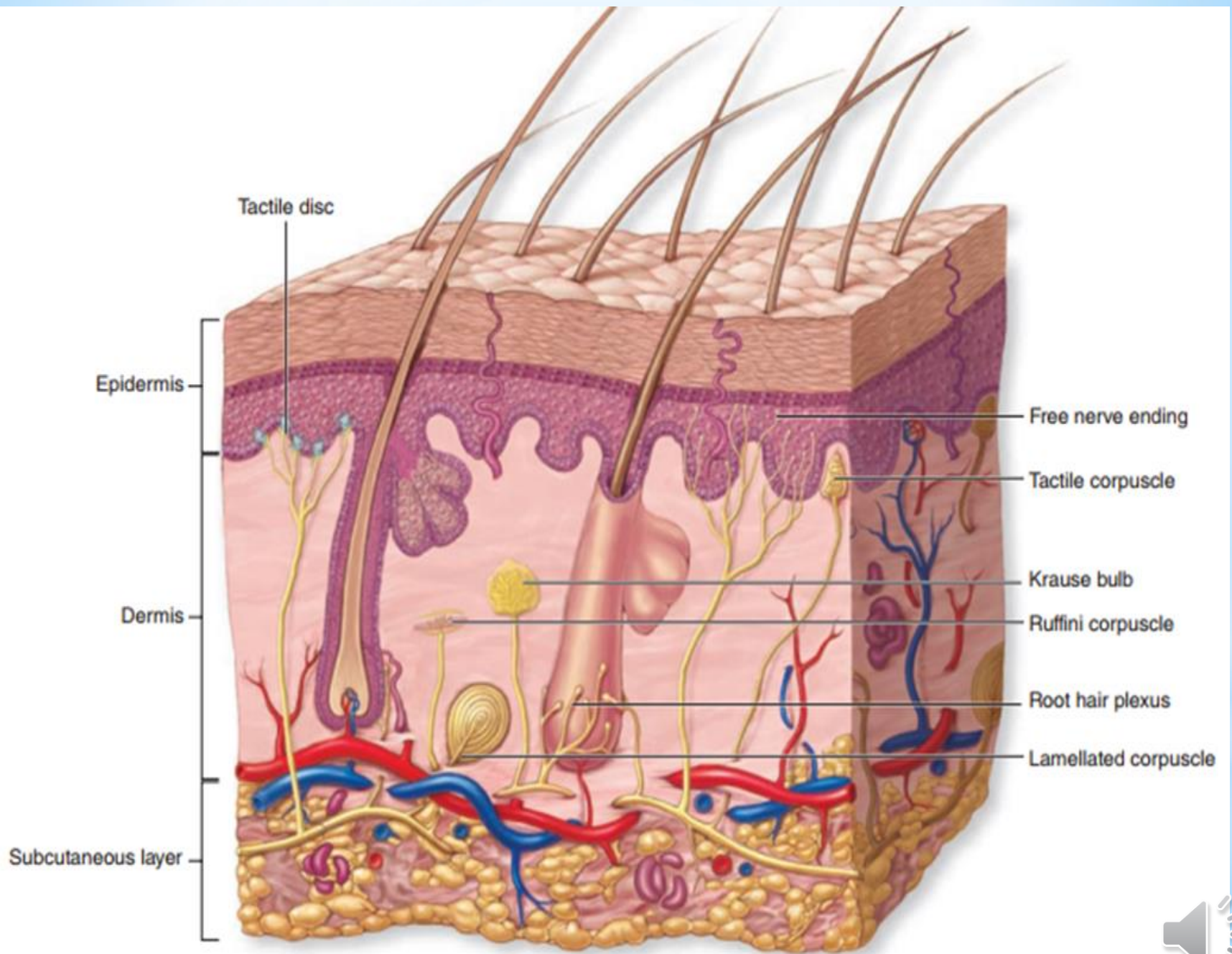
3- Root hair plexuses: detects the movement of hairs

4- Tactile corpuscles: detect light touch

5- Lamellated corpuscles: sensing coarse touch, pressure and vibrations







# Glands of skin

A- **sebaceous glands**: embedded in dermis over most of the body surface except palms and soles

- About 100 gland/cm<sup>2</sup>

B- **sweat glands**: epithelial derivatives in the dermis which open to the skin on hair follicles.



Sweat pore

Sweat gland duct

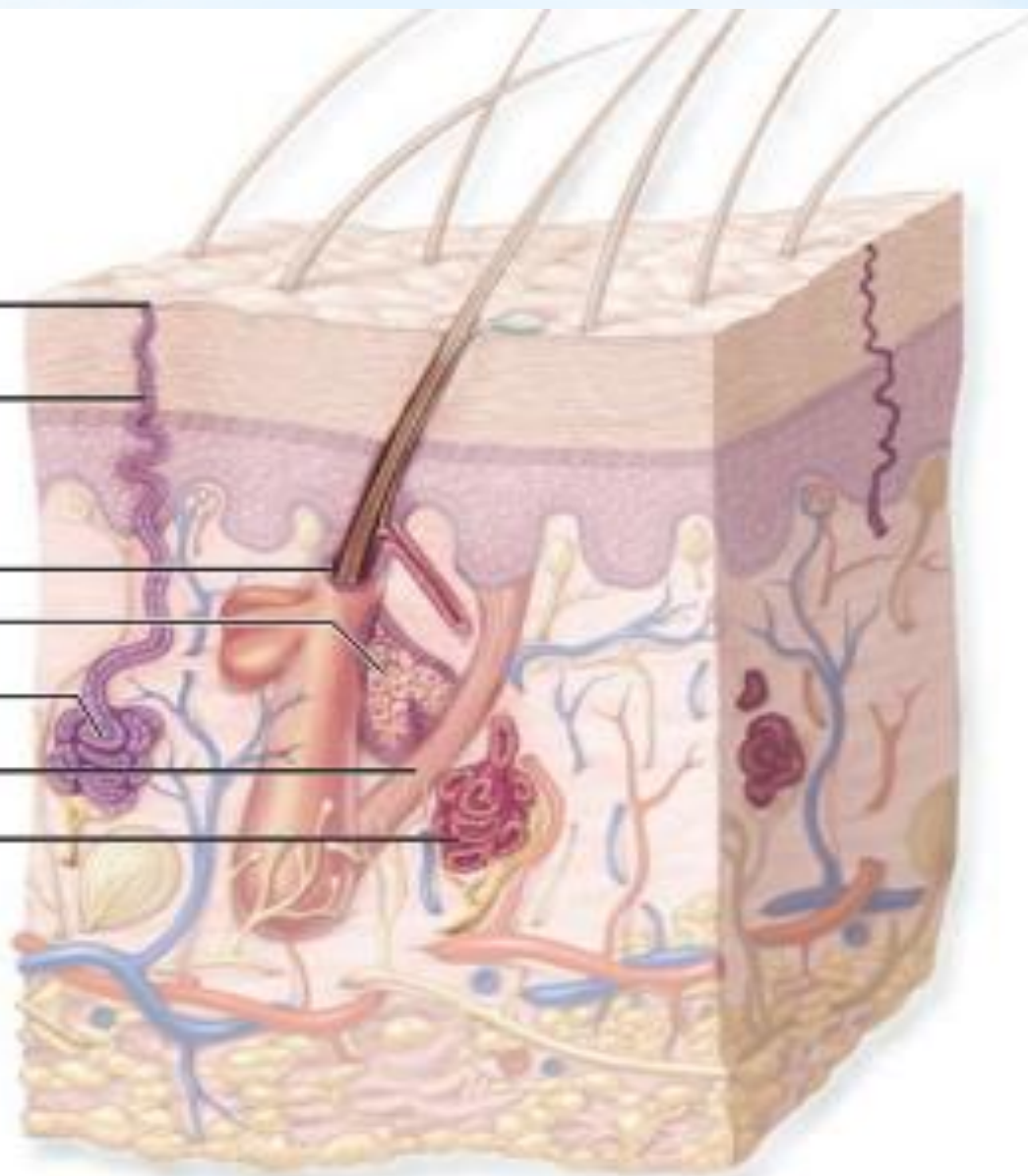
Hair follicle

Sebaceous gland

Merocrine sweat gland

Arrector pili muscle

Apocrine sweat gland



Thank you

