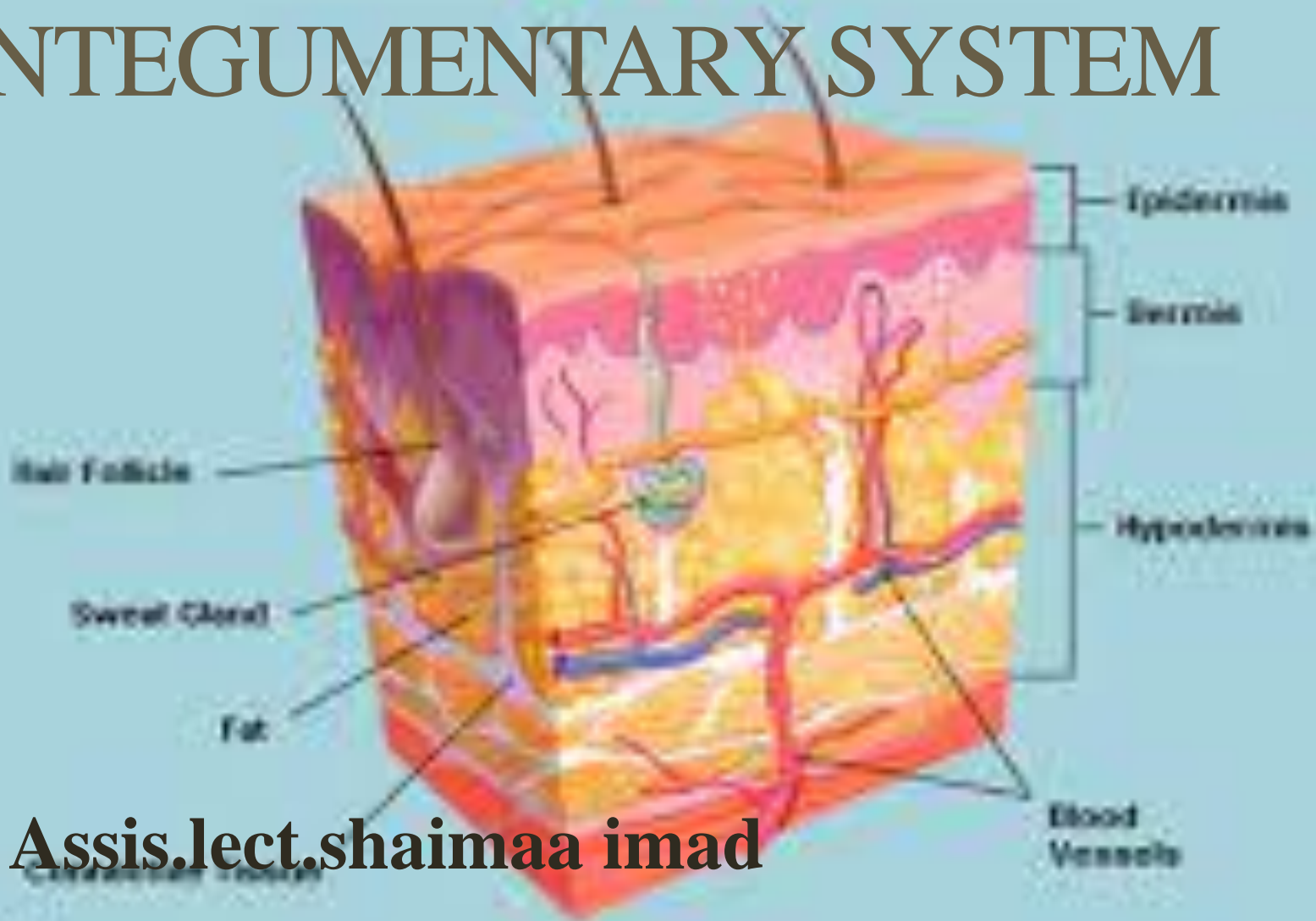


Skin

INTEGUMENTARY SYSTEM



- Assis.lect.shaimaa imad

The skin

- The skin or integument is the largest organ in the mammalian body and is comprised of an epithelial covering, its derivatives (including hair, nails, and several types of sweat and sebaceous glands) and its associated connective tissue.
- the surface of body are covered either by thin skin or thick skin

Layers Of The Skin

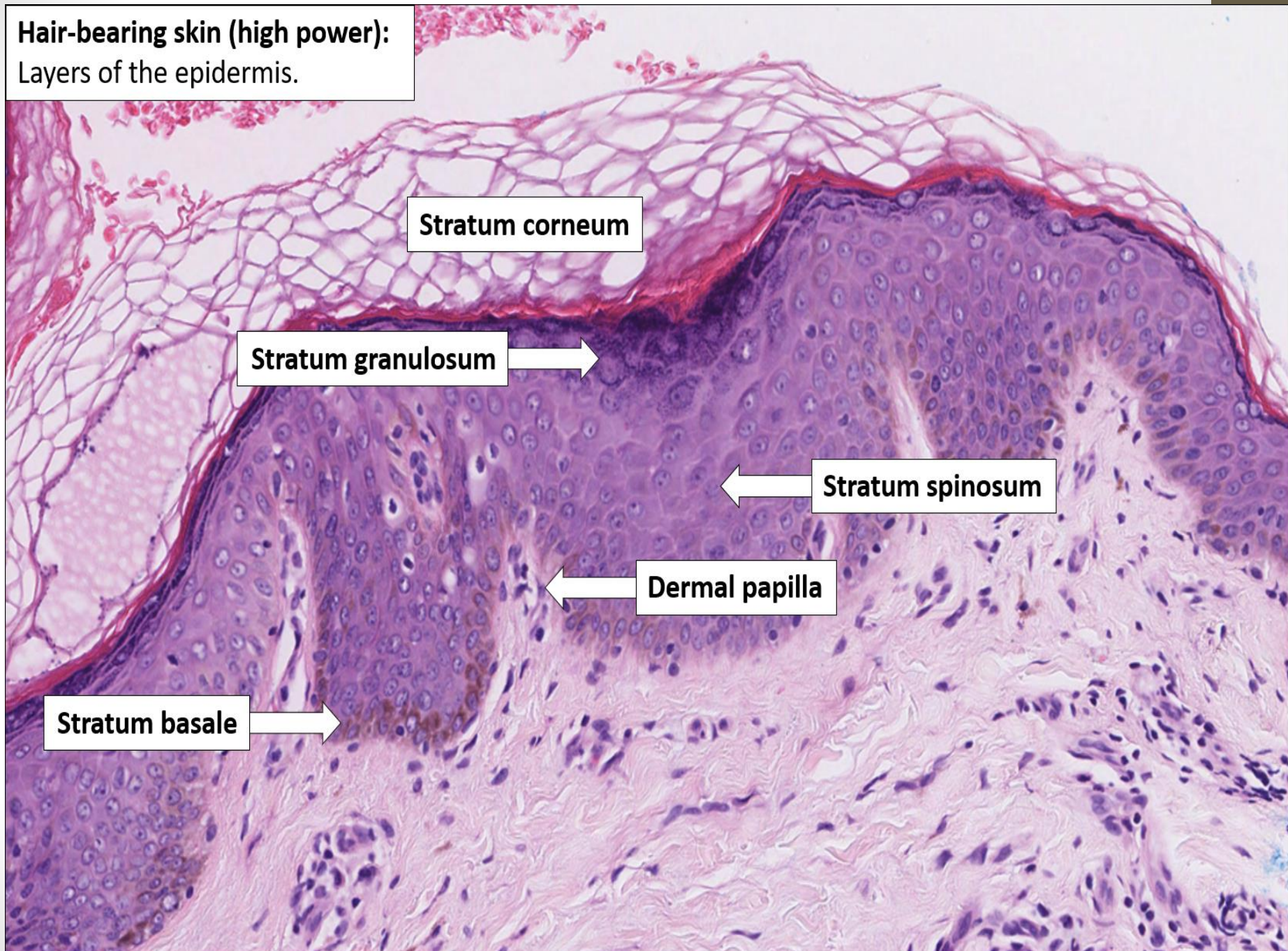
- Skin consist of two distinct regions
- 1.Epidermis –outer
- Is non vascular and is lined by keratinized stratified squamous epithelium
- 2.Dermis –inner

- Characterized by dense irregular connective tissue,bloodvessels,nerves,anddifferent gland
- Beneath the dermis is the hypodermis or subcutaneous layer of connective tissue and adipose tissue.

Epidermis

- **Composed** of stratified squamous epithelium
- Avascular as it has no blood supply of its own
- Oxygen and nutrients diffuse from the underlying dermis
- The most abundant epithelial cells, the keratinocytes form different layers.
- Thick skin (5) and thin skin (4)-refer only to the epidermis.
- Five structurally different layers can be identified

Hair-bearing skin (high power):
Layers of the epidermis.



Stratum corneum

Stratum granulosum

Stratum spinosum

Dermal papilla

Stratum basale

EPIDERMAL LAYERS

- Stratum basale .
- Stratum Spinosum
- Stratum Granulosum
- Stratum Lucidum
- Stratum Corneum

The stratum basale(First Layer)

- is the deepest layer of the epidermis .It consists of a single layer of columnar or cuboidal cells which rest on the basement membrane

Stratum Spinosum(second layer)

- This consists of 4-6 rows of cells
- Cells synthesize keratin filaments

The stratum granulosum(Third Layer)

- Consists of 3-5 cell layers of flattened cells.
- Cells filled with dense keratohyaline granules
- Nuclei already begin to degenerate in the outer part of the stratum granulosum

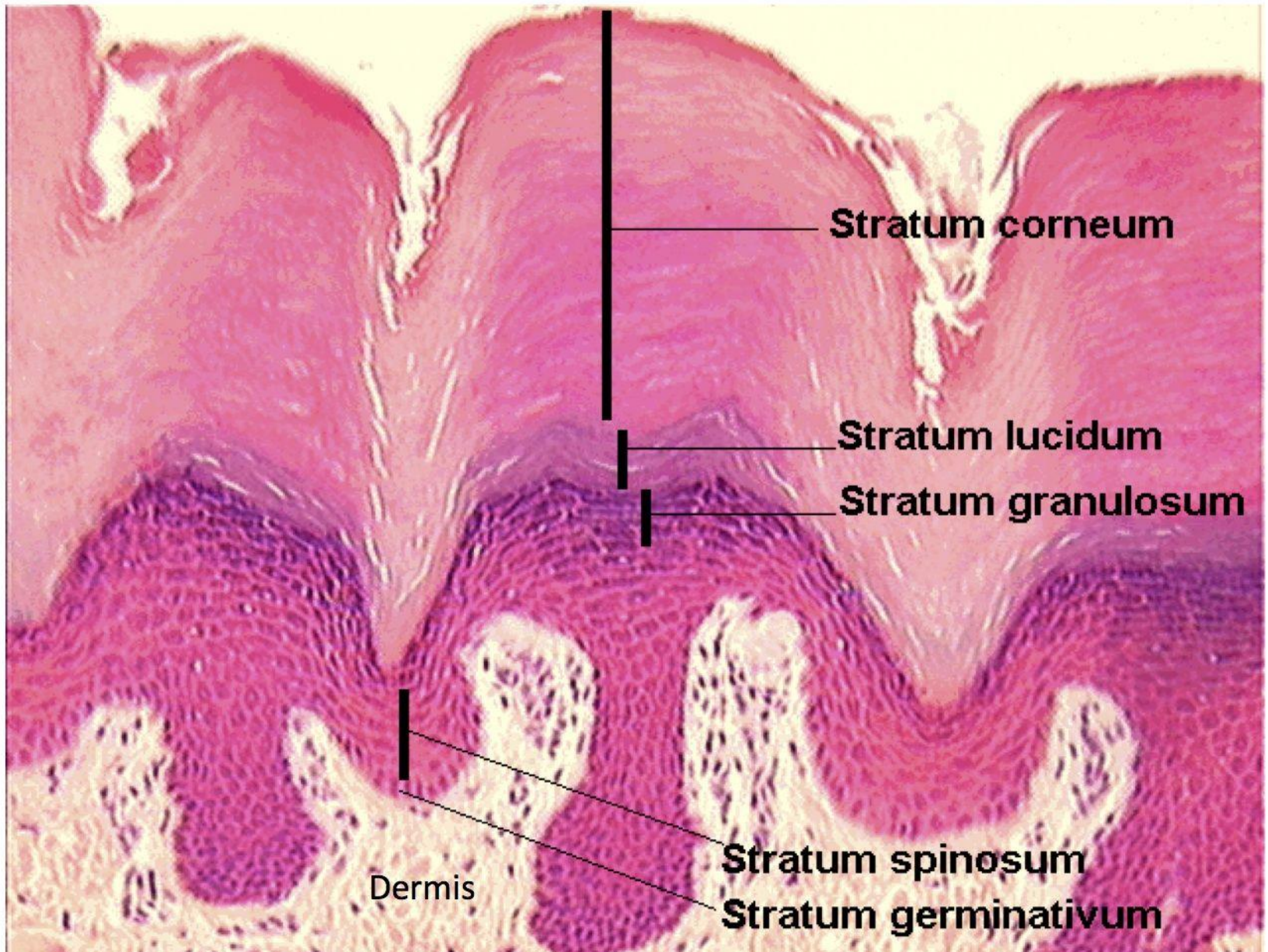
stratum lucidum(fourth Layer)

- Lucidum can usually not be identified in thin skin
- is translucent and barely visible (in thick skin of the palms and soles.)

Stratum corneum (the fifth layer)

- All nuclei and organelles have disappeared from the cells
- Consist of flatted , dead cells filled with soft keratin filaments
- The protection of the body by the epidermis is due to the functional features of the stratum corneum

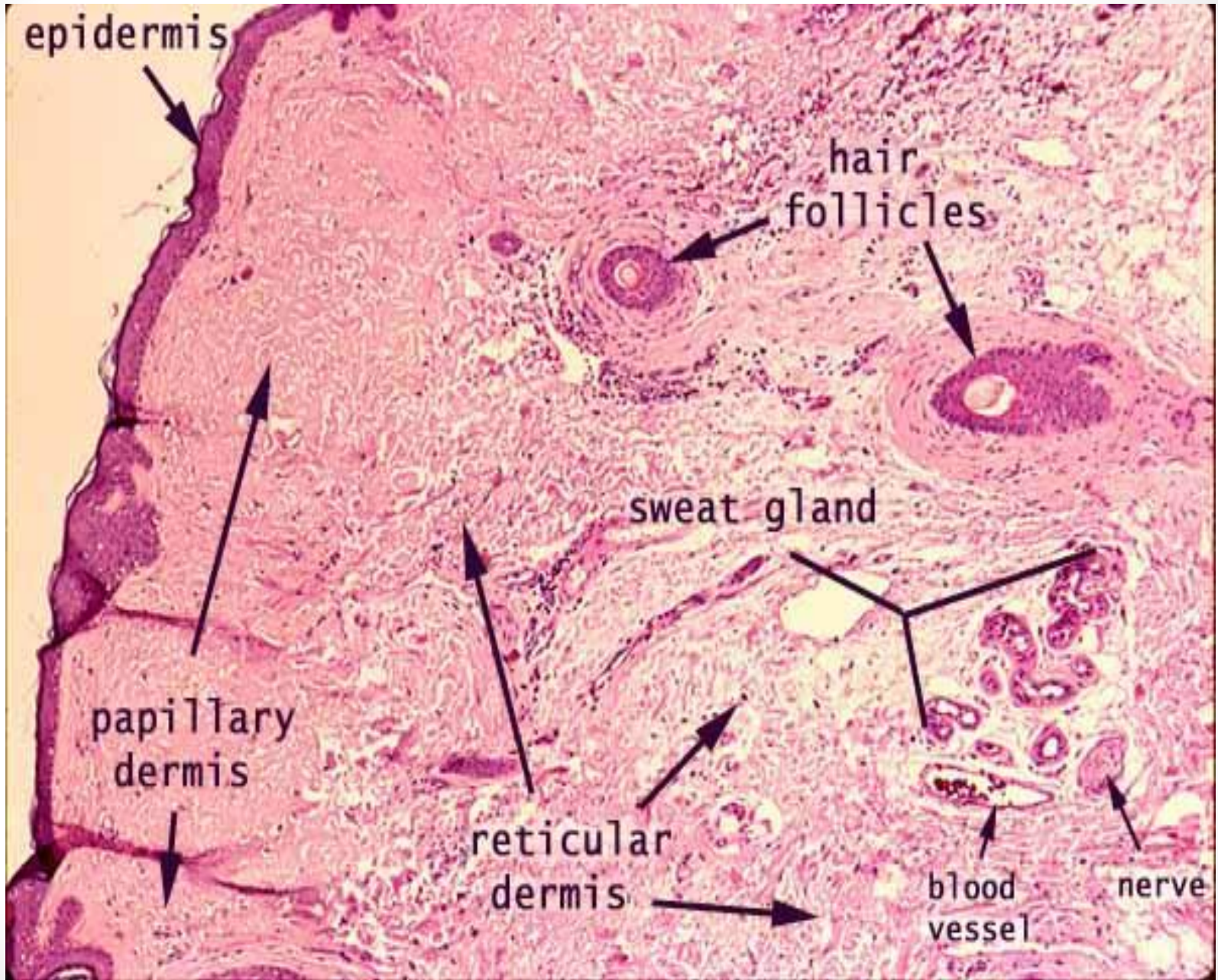
Thick Skin

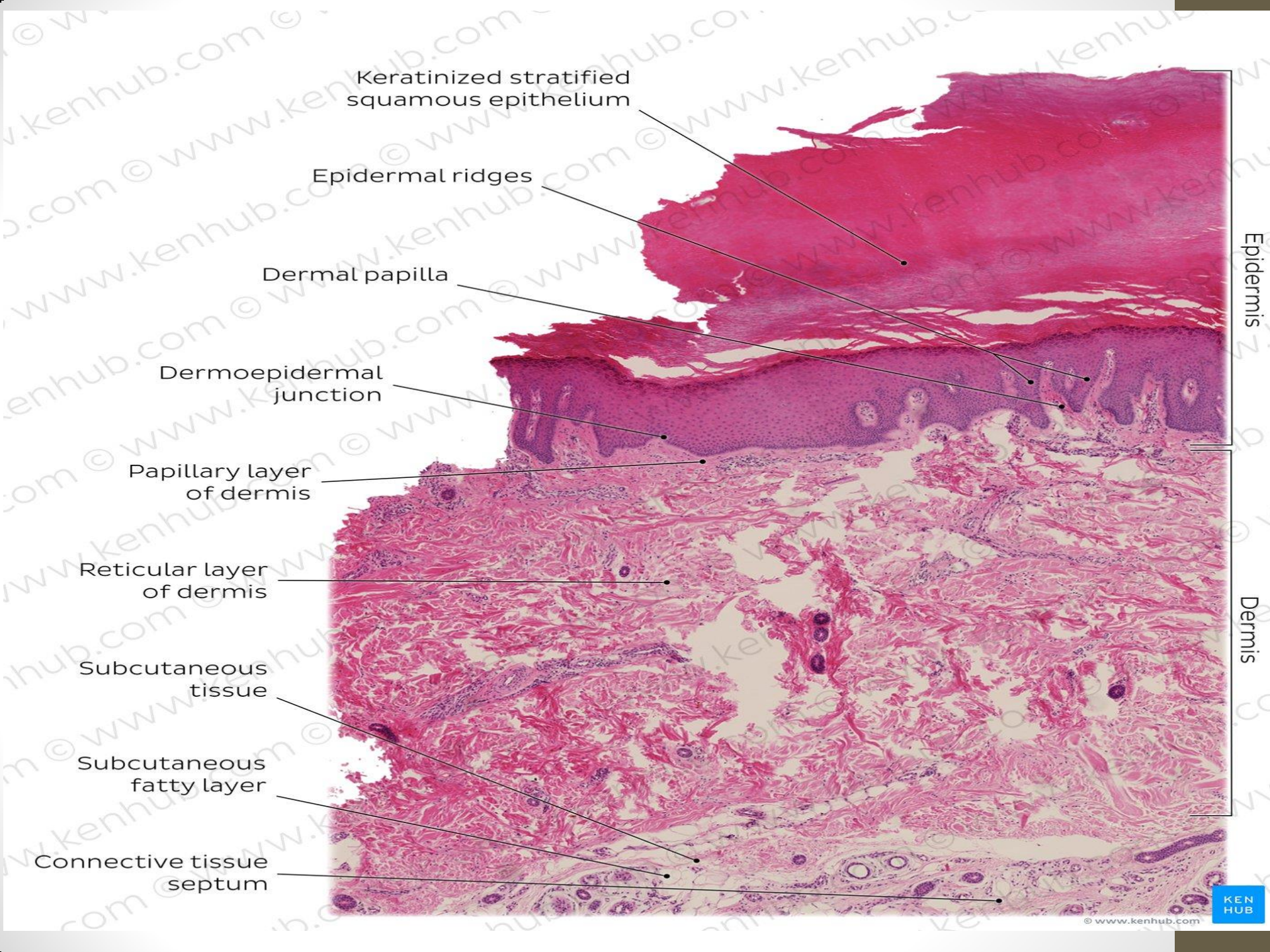


Dermis

- - can recognize a division into two structurally distinct layers:
 - **The papillary layer:**
 - dermal papillae, that project into the under surface of the epidermis .When it contain a blood vessel then called vascular papillae, but when it contain a nerve ending (Meissner corpuscle) .

- **The reticular layer**
- Accessory organs of epidermal origin, such as hair follicles and sweat glands extend into the dermis.
- contain Sensory receptors_ Meissner's and Pacinian corpuscles
- The hypodermis contains variable amounts of adipose tissue. It is well supplied with motor nerve endings to the blood vessels, arrector pili muscles, and sweat glands.





Keratinized stratified squamous epithelium

Epidermal ridges

Dermal papilla

Dermoepidermal junction

Papillary layer of dermis

Reticular layer of dermis

Subcutaneous tissue

Subcutaneous fatty layer

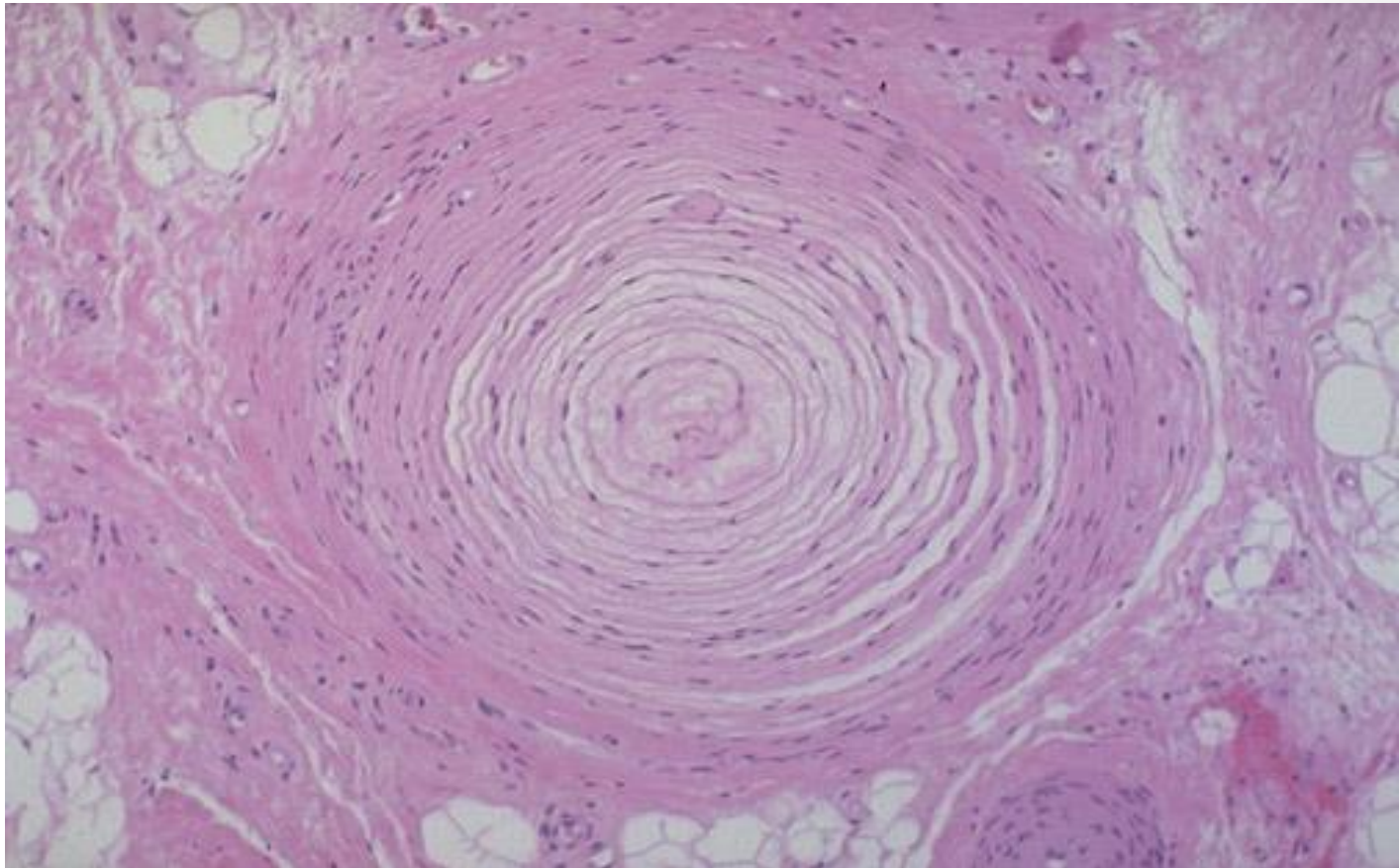
Connective tissue septum

Epidermis

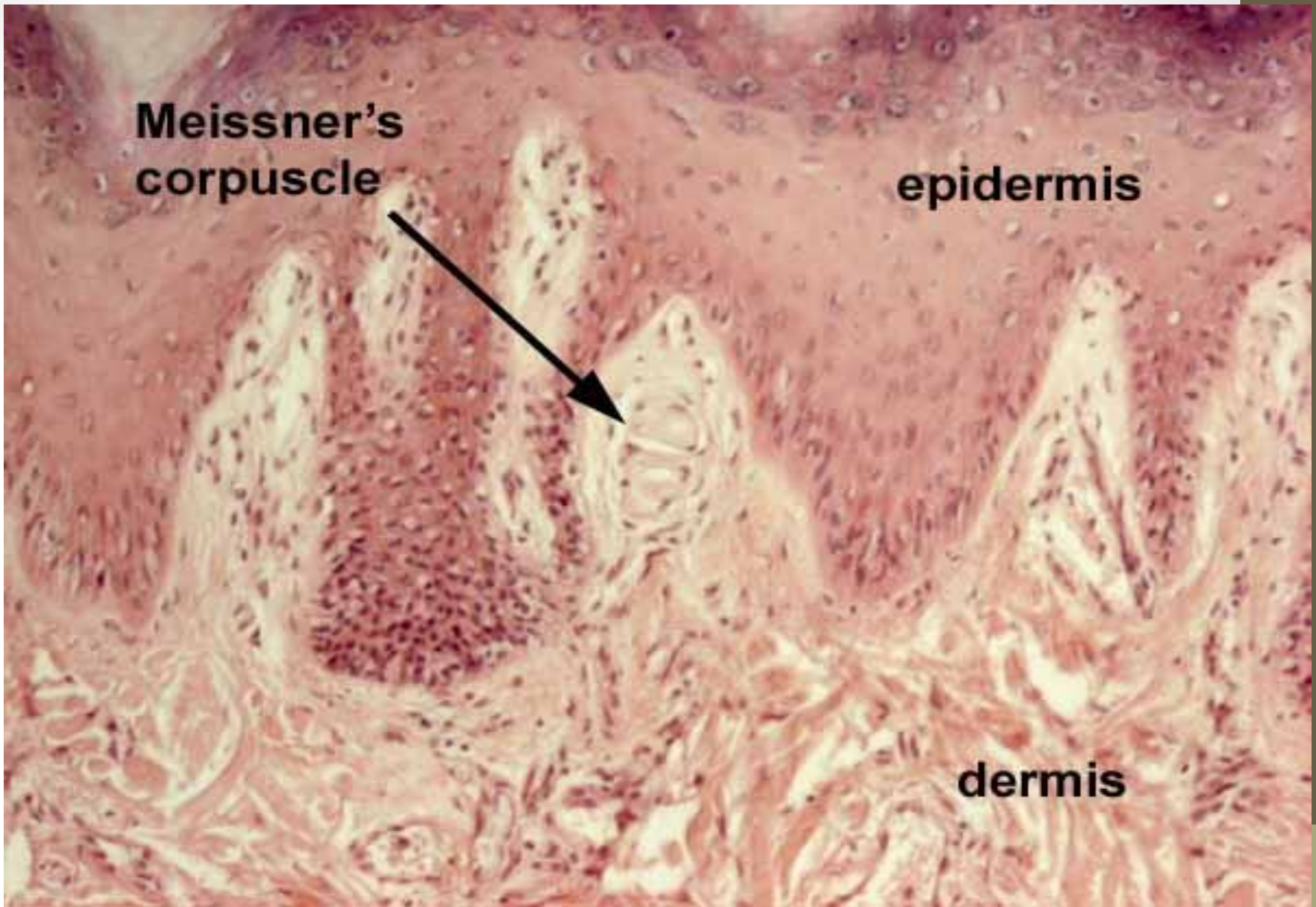
Dermis

nerve endings in the skin are

- Pacinian corpuscles : are large ovoid structures found in the deeper dermis and hypodermis
- Meissner's corpuscles are responsible for sensitivity to light touch in the papillary layer of hairless skin (e.g., the lips and the palmar , particularly those of the fingers and toes).



Pacinian corpuscles



Meissner's corpuscles

Skin derivatives

- Hair
- Developed from the epithelium of the epidermis and reside deep in the dermis
- Are hard cylindrical structure that arise from hair follicles
- Grow from the expanded hair bulb of the hair follicle .
- Hair bulb indented by connective tissue(dermis) papilla that is highly vascularized



epidermis

dermis

sebaceous gland

hair

internal
radicular sheath

external
radicular sheath

dermic sheath
of connective tissue

sweat glands

pilous bulb

Skin derivatives

- sebaceous glands
- Numerous sebaceous associated with each hair follicle
- Cells in sebaceous glands grow ,accumulate secretion ,die and become oily secretion sebum .
- Smooth muscles erector pili attach to the papillary layer of the dermis and to the sheath of the hair follicle
- Contraction of the erector pili muscle stands hair up and for forces sebum into the lumen of the hair follicle

