

General Histology Practical for second stage students

Integument system

Integument system

- The largest organ, includes **skin** and **appendages** (sweat glands, sebaceous glands, hair, and nails).
- Skin layers **outer epidermis, inner dermis.**
- Epidermis composed of **stratified squamous keratinized epithelium.**
- Dermis composed of **dense irregular collagenous connective tissue.**

- **The hypodermis is a loose connective tissue beneath the skin, containing variable amounts of fat.**
- **It is not part of the skin but acts as the superficial fascia, covering the body just below the skin.**

Thick skin

- Thick skin is found on palms and soles.
- Does not have hair follicles, arrector pili muscles, or sebaceous glands.
- Contain sweat glands.
- The epidermis of the thick skin is characterized by the presence of five layers

The layers of the epidermis in the thick skin

1. **Stratum Basale:** deepest epidermal layer, single layer of mitotically active cells, cuboidal to low columnar in shape, with basophilic cytoplasm and large nuclei.
2. **Stratum Spinosum:** thickest epidermal layer, made of polyhedral to flattened cells. Together with stratum basale, it's referred to as the Malpighian layer.

The layers of the epidermis in the thick skin

3. Stratum Granulosum: The outermost layer of the epidermis with nuclei, 3–5 layers of flattened keratinocytes, containing coarse, basophilic keratohyalin granules.

4. Stratum Lucidum: A clear, thin layer above the stratum granulosum, **found only in thick skin, with flattened cells lacking organelles and nuclei.**

The layers of the epidermis in the thick skin

5. Stratum Corneum: The outermost skin layer, with many keratin filaments within an amorphous matrix.

epidermis

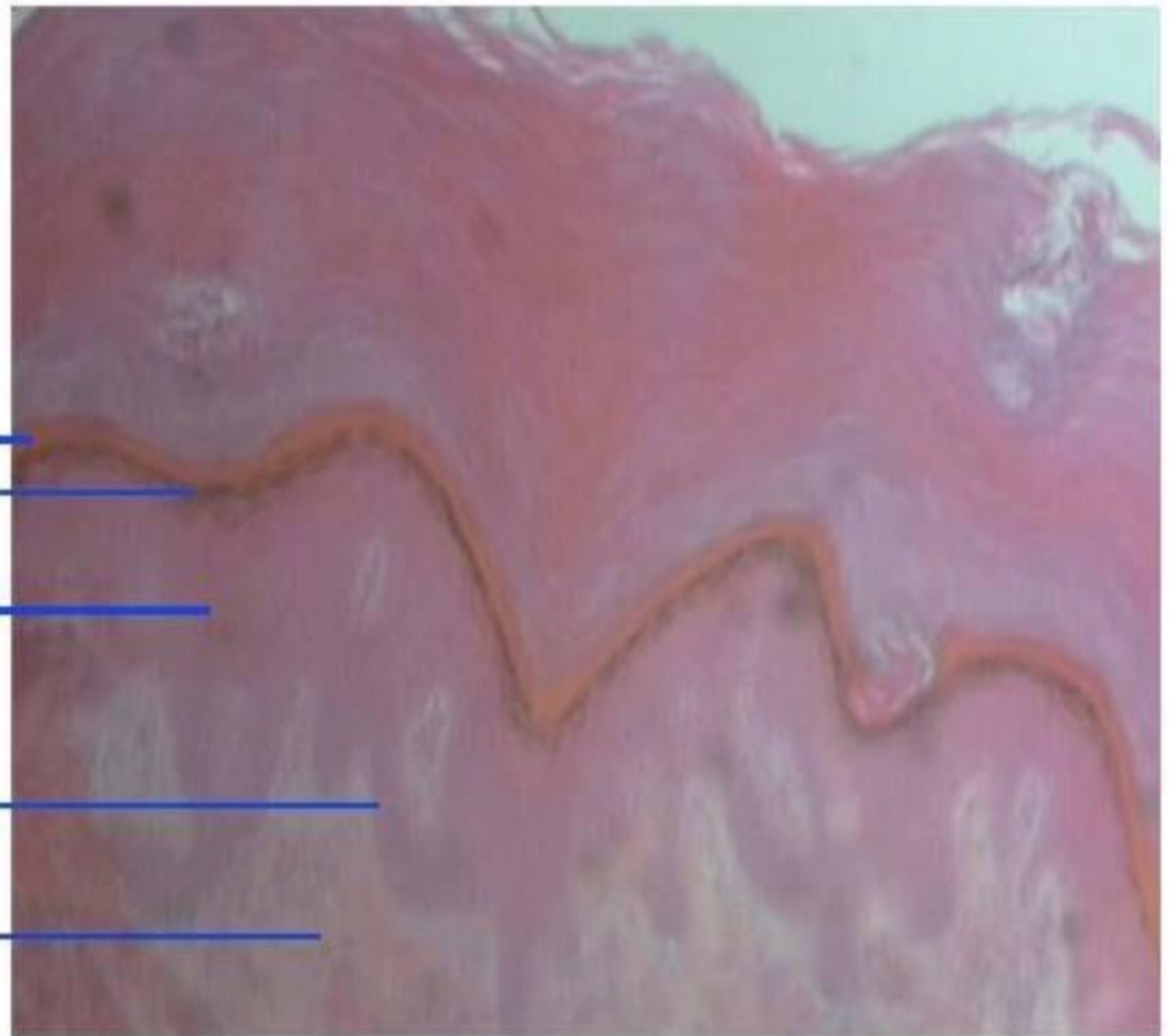
stratum
corneum

stratum lucidum
stratum Granulosum

stratum spinosum

stratum basale

Dermis

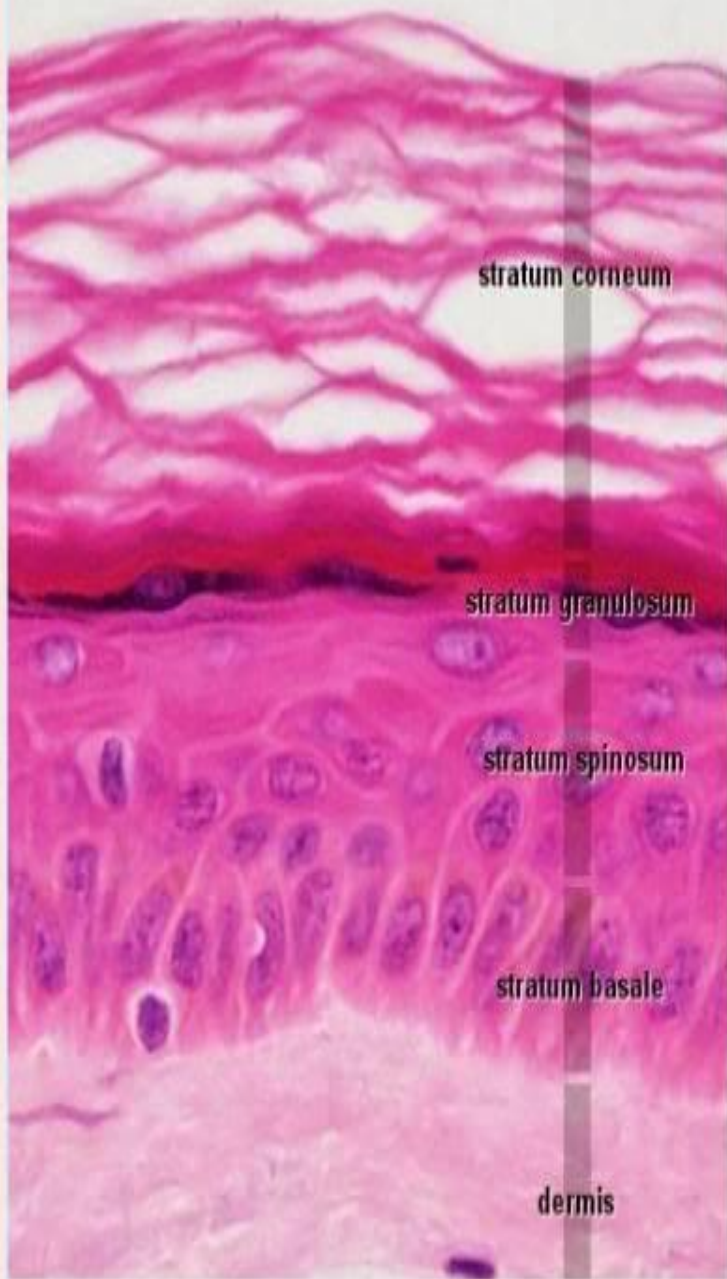


perpendicular section in thick skin 4x

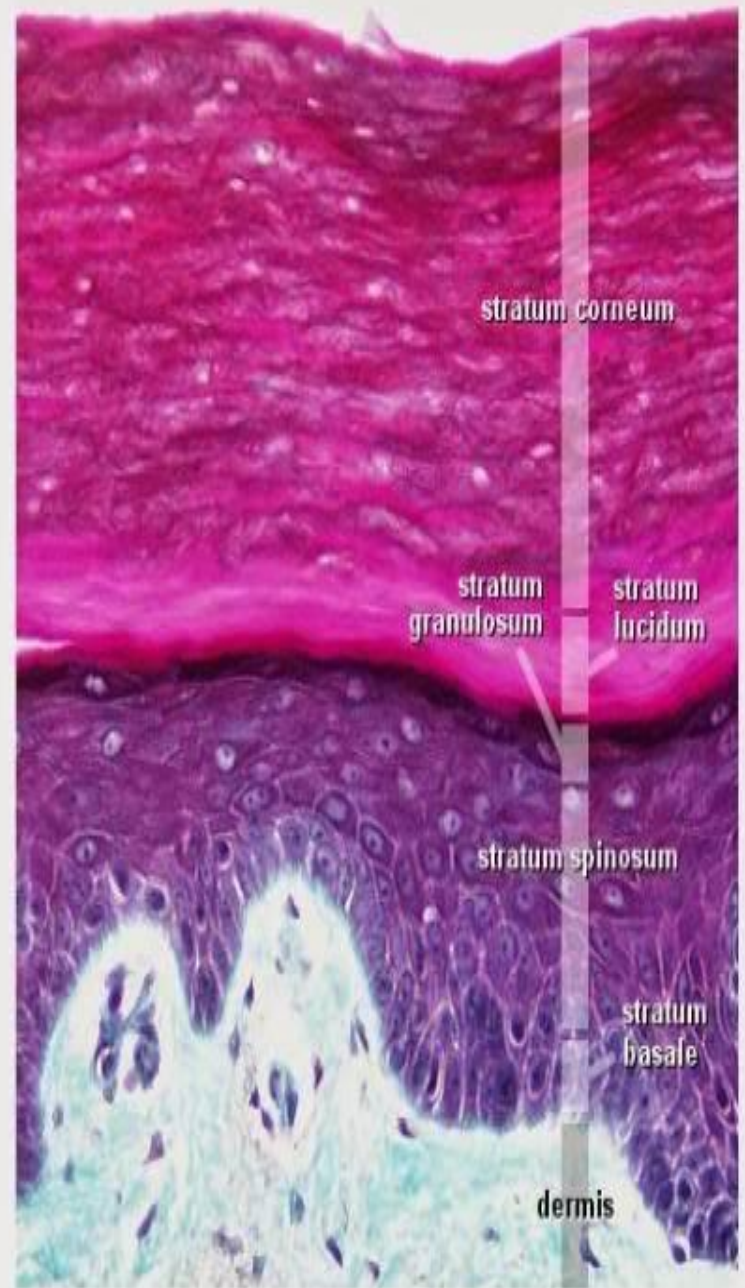
Thin skin

- ▶ Found on most of the body, characterized by a thin stratum corneum. It lacks a distinct stratum lucidum and stratum granulosum. Contains hair follicles, arrector pili muscles, sebaceous glands, and sweat glands.

Skin, thin H&E



Skin, thick trichrome



Dermis

- ▶ Dermis Located under the epidermis, consisting of two layers :
 1. Papillary layer (the superficial)
 2. Denser reticular layer (the deeper) .

Skin appendages

- ▶ Includes sweat glands ,sebaceous glands , hairs and nails.

1.Sweat glands

- ▶ Simple coiled tubular structure.
- ▶ Secretory units with simple cuboidal to columnar epithelium.
- ▶ Located deep in dermis or hypodermis.
- ▶ Ducts lined by stratified cuboidal epithelium.
- ▶ Passes through dermis and epidermis.
- ▶ Opens at skin surface through sweat pores.

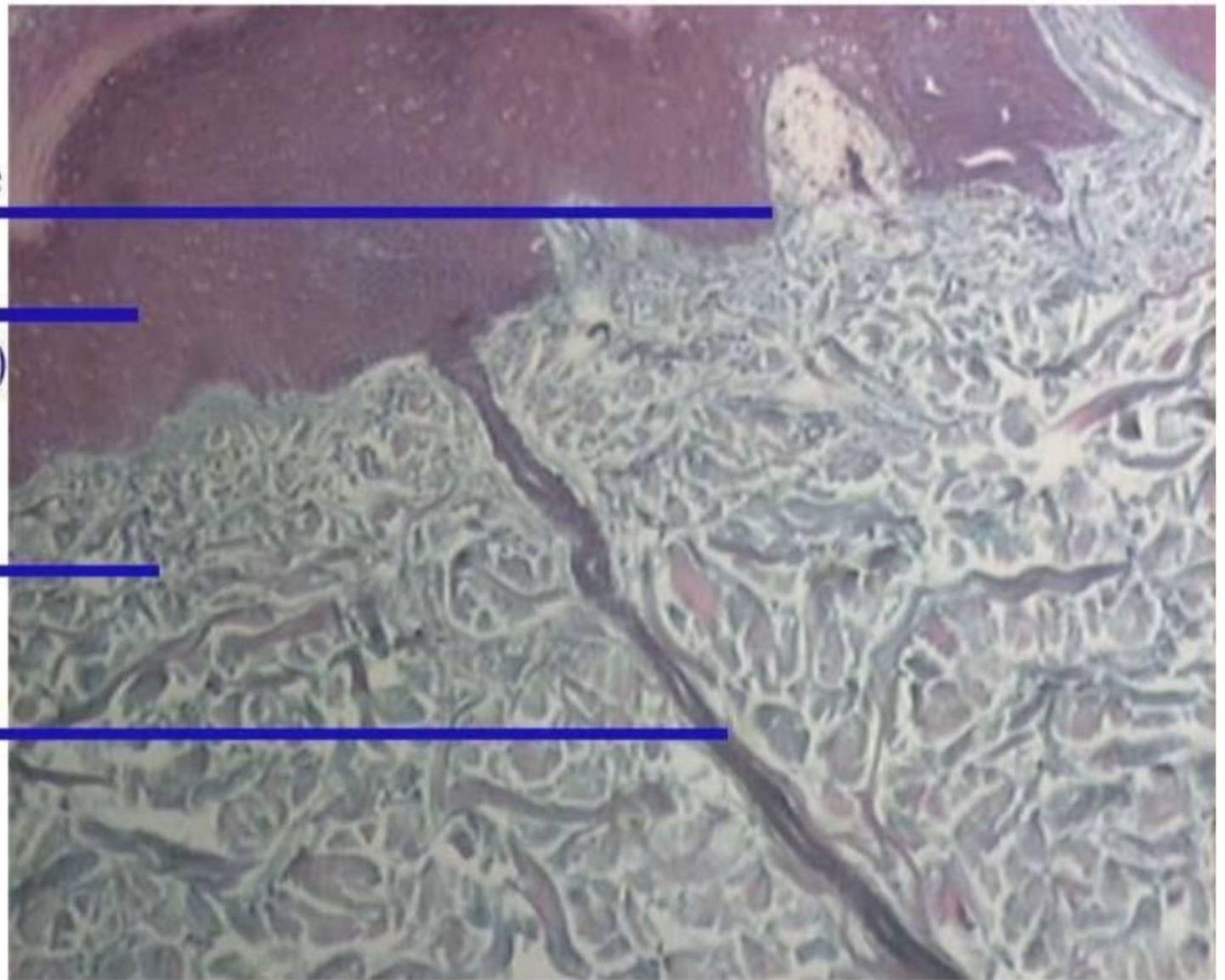
stratum basale

epidermis

(stratum spinosum)

dermis

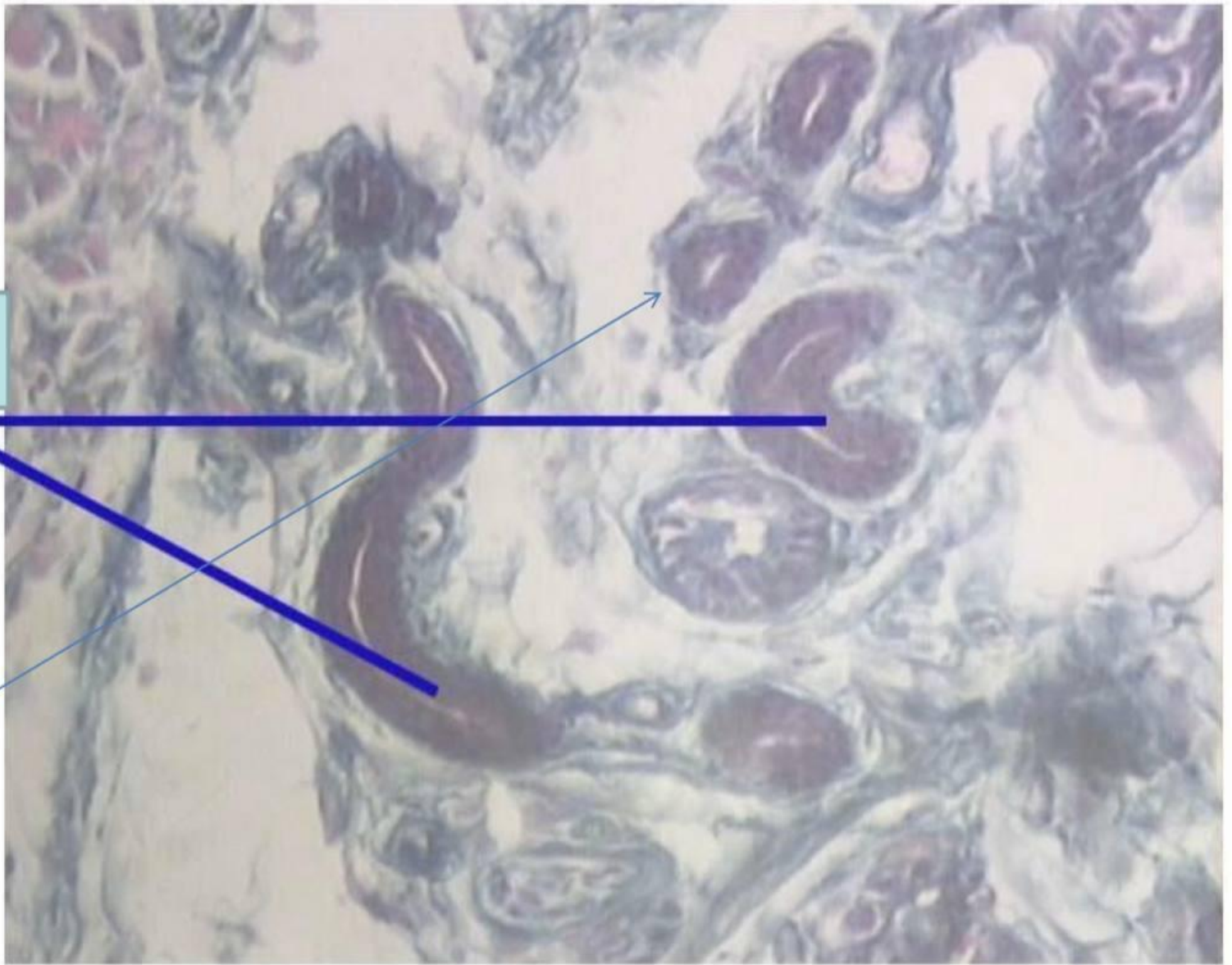
duct of sweat
gland



perpndicular section in thick skin 4x

**Blood
vessels**

**Sweat
glands**



perpendicular section in thick skin 4x



**THANK YOU
FOR
LISTENING**

