



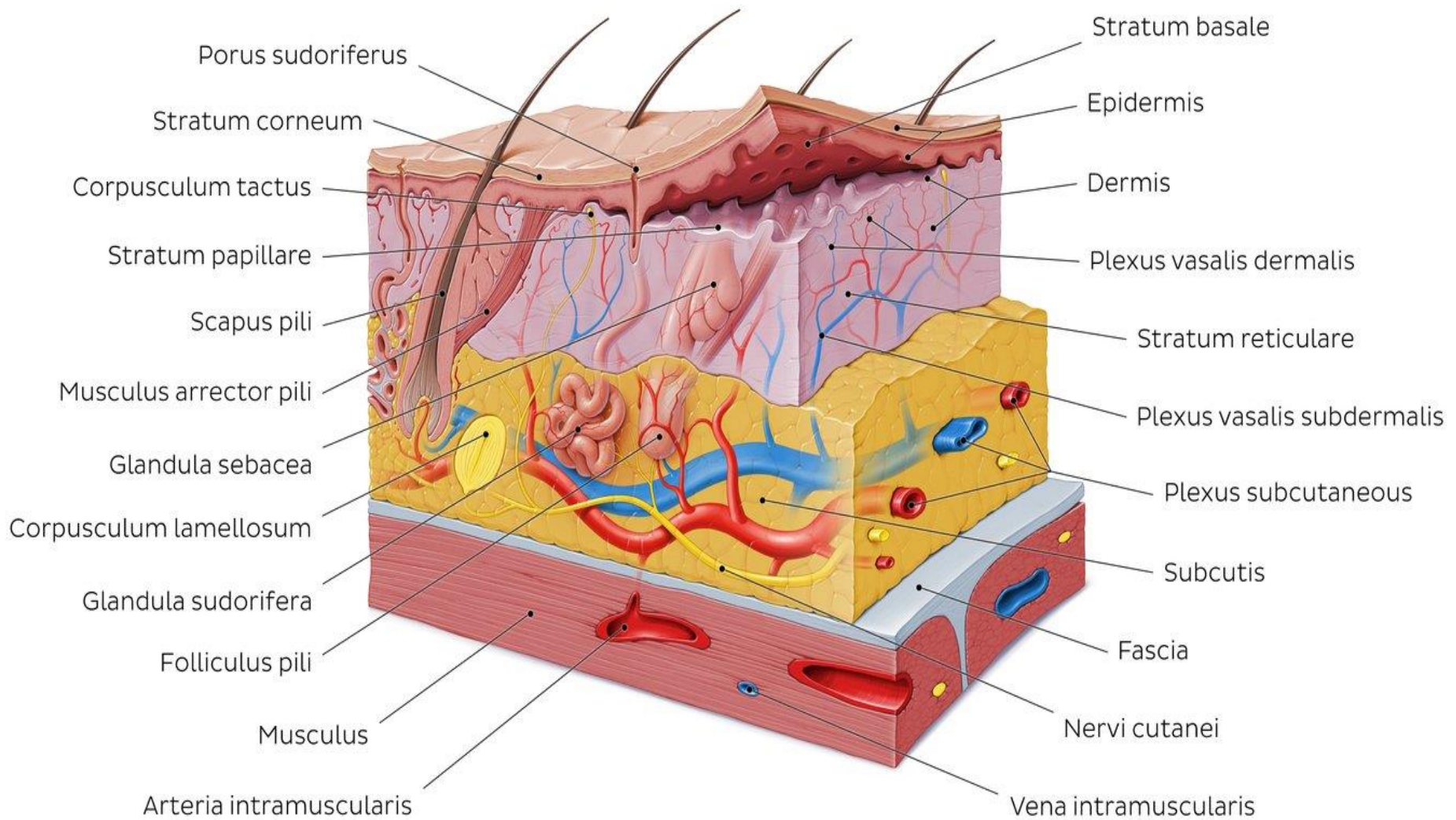
Skin

Practical part

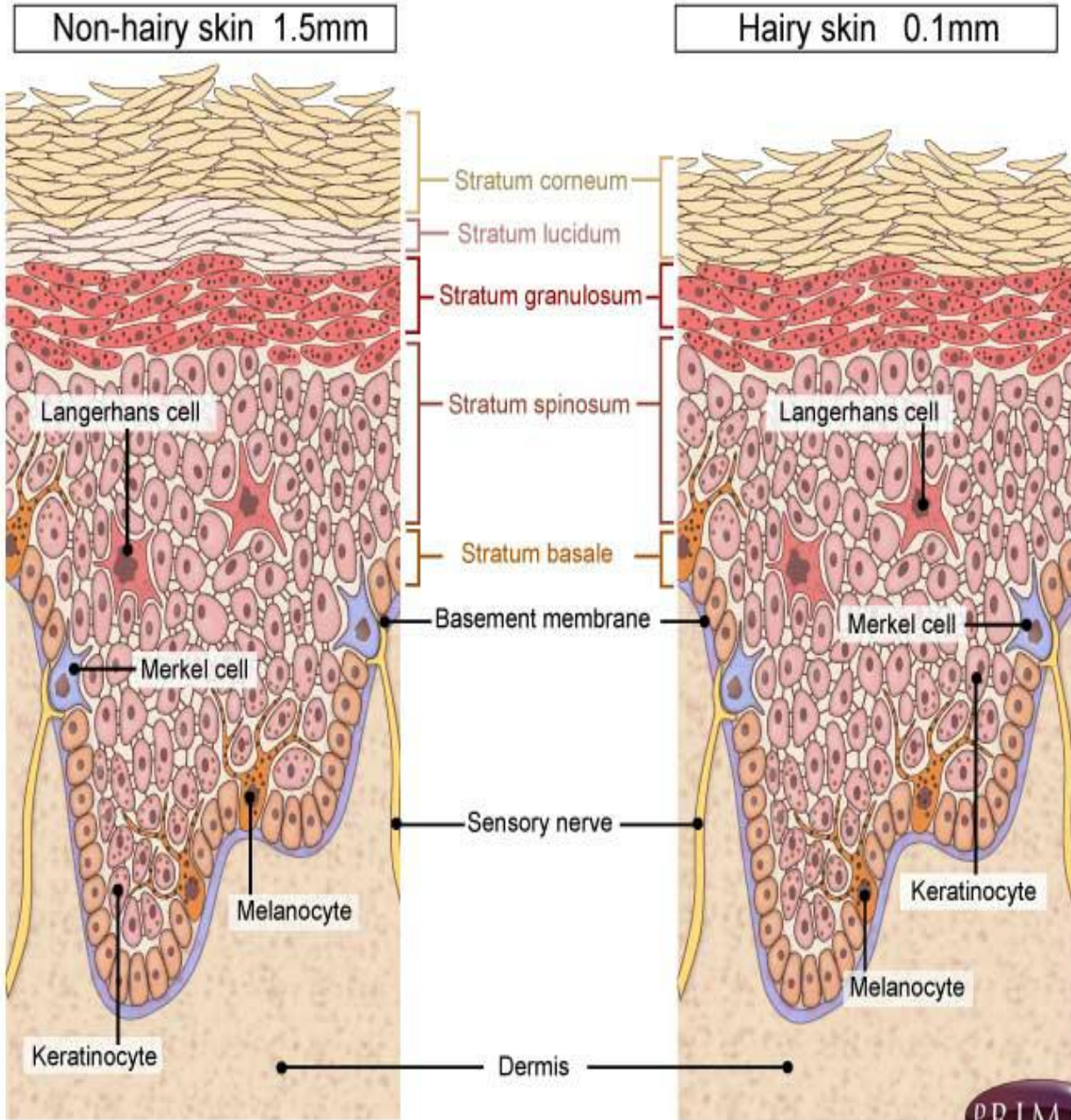
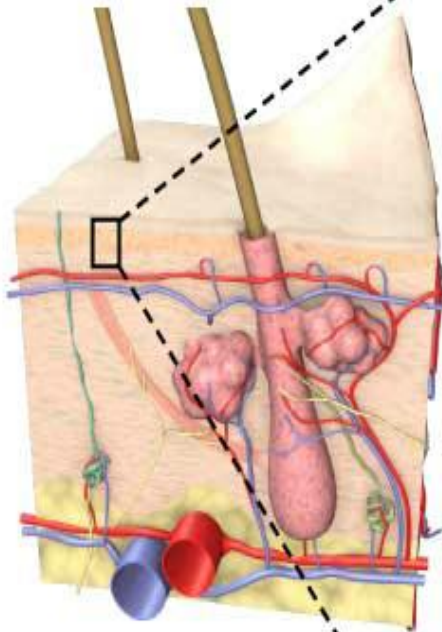
Dr. Heba Kalbouneh

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Professor of Anatomy, Histology and Embryology



Skin of eyelids a and the back!!!

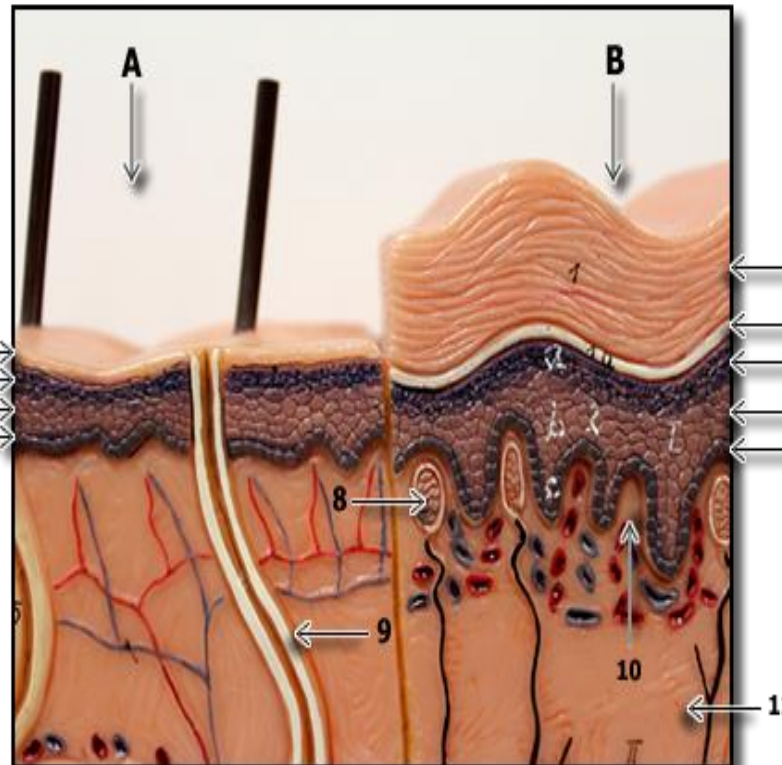


Types of skin

Thin skin

Thick skin

Thin vs. Thick skin



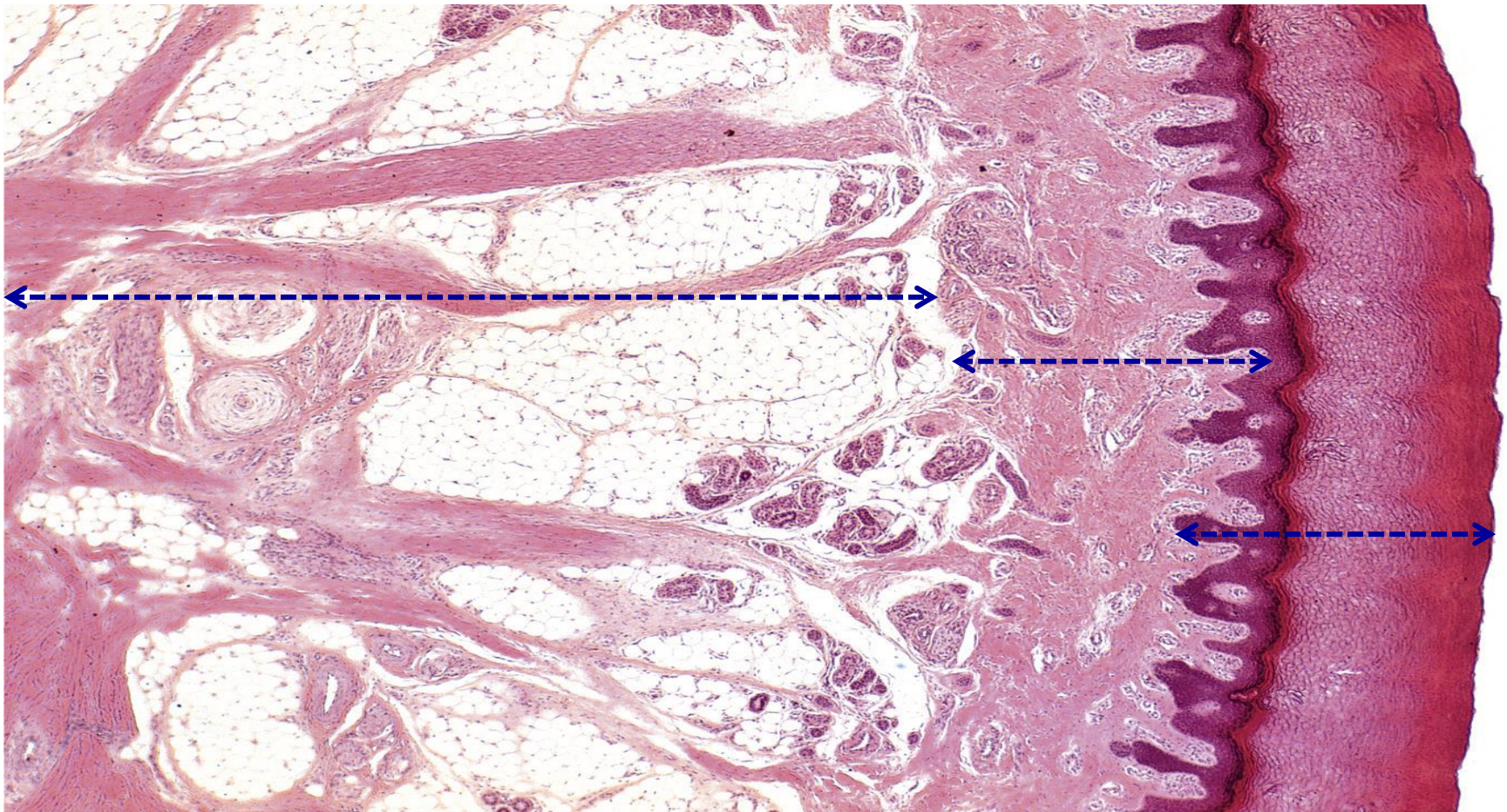
*4 layers

- *less Prominent stratum corneum
- * Less developed stratum granulosum
- * Dominant and lines most of the body surface
- * Thicker dermis
- * hair and sebaceous glands

*5 layers

- * Prominent stratum corneum
- * Well developed stratum granulosum
- * Palms of the hands and soles of the feet
- * Thinner dermis
- * No hair and sebaceous glands

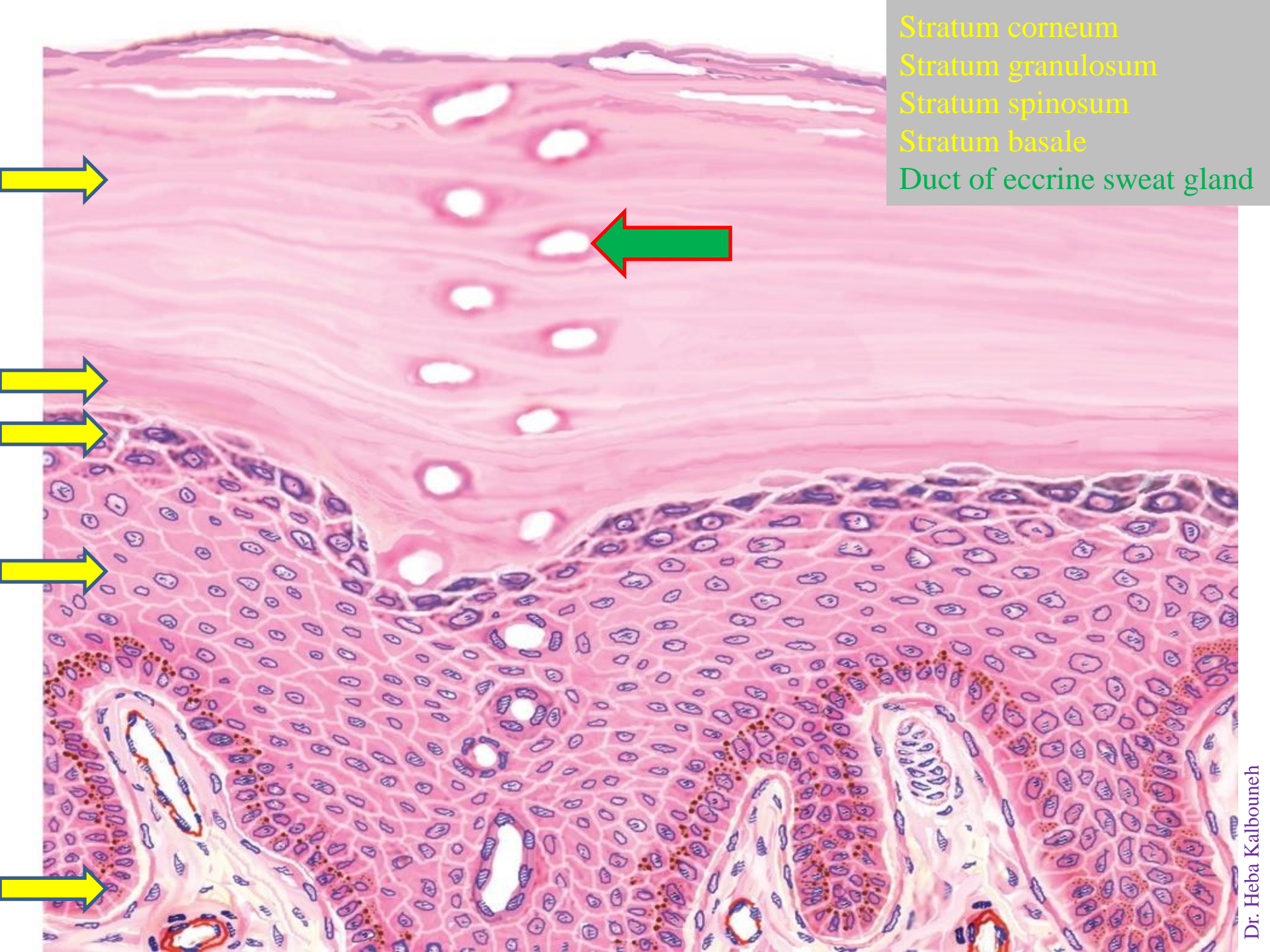
The skin is composed of two layers: the outer epidermis and the deeper dermis, both of which rest on the hypodermis



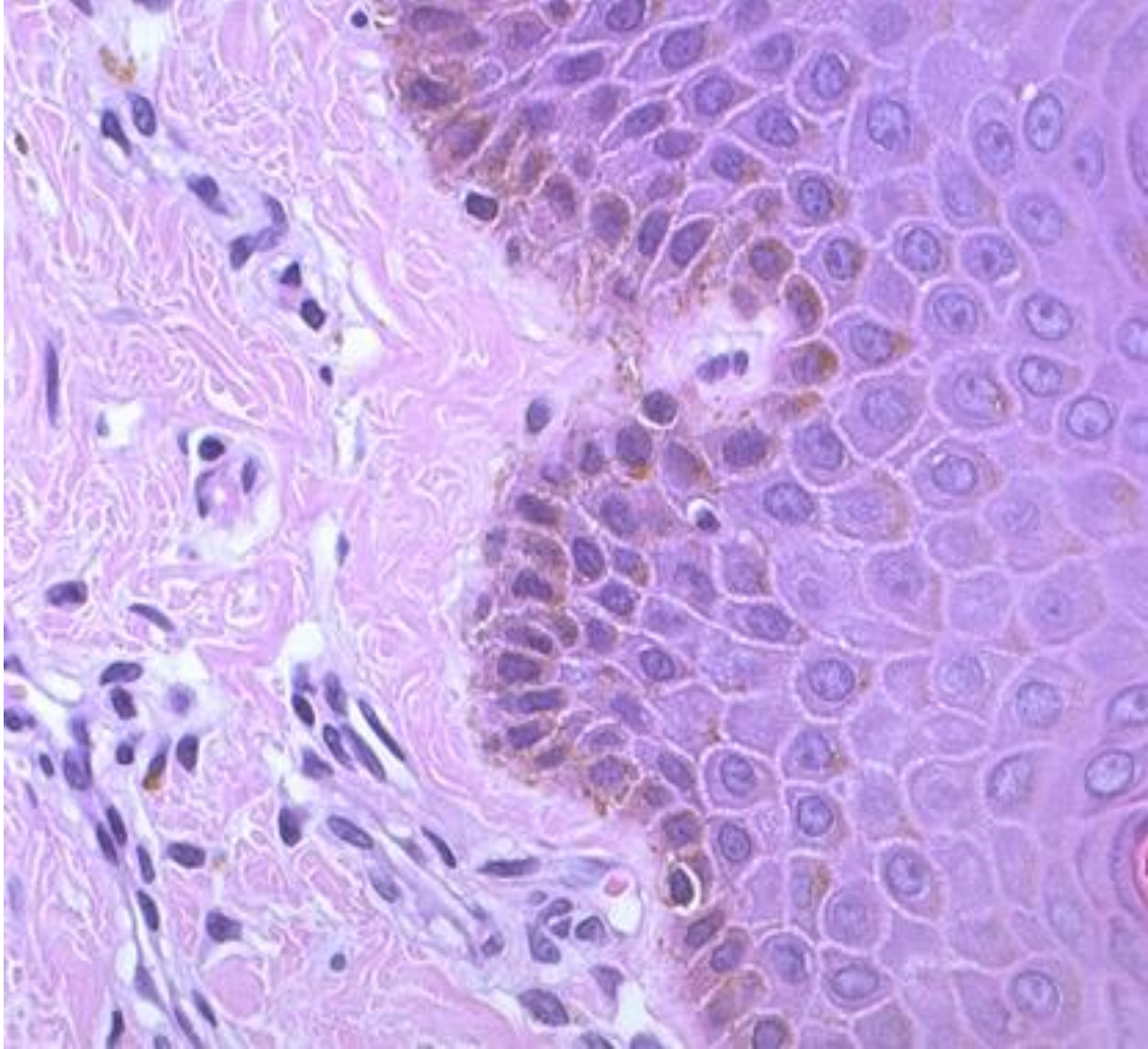


Stratum corneum
Stratum granulosum
Stratum spinosum
Stratum basale

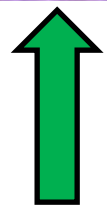
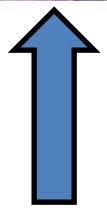
Melanin granules
Dermal papilla 😊
Epidermal ridge 😊



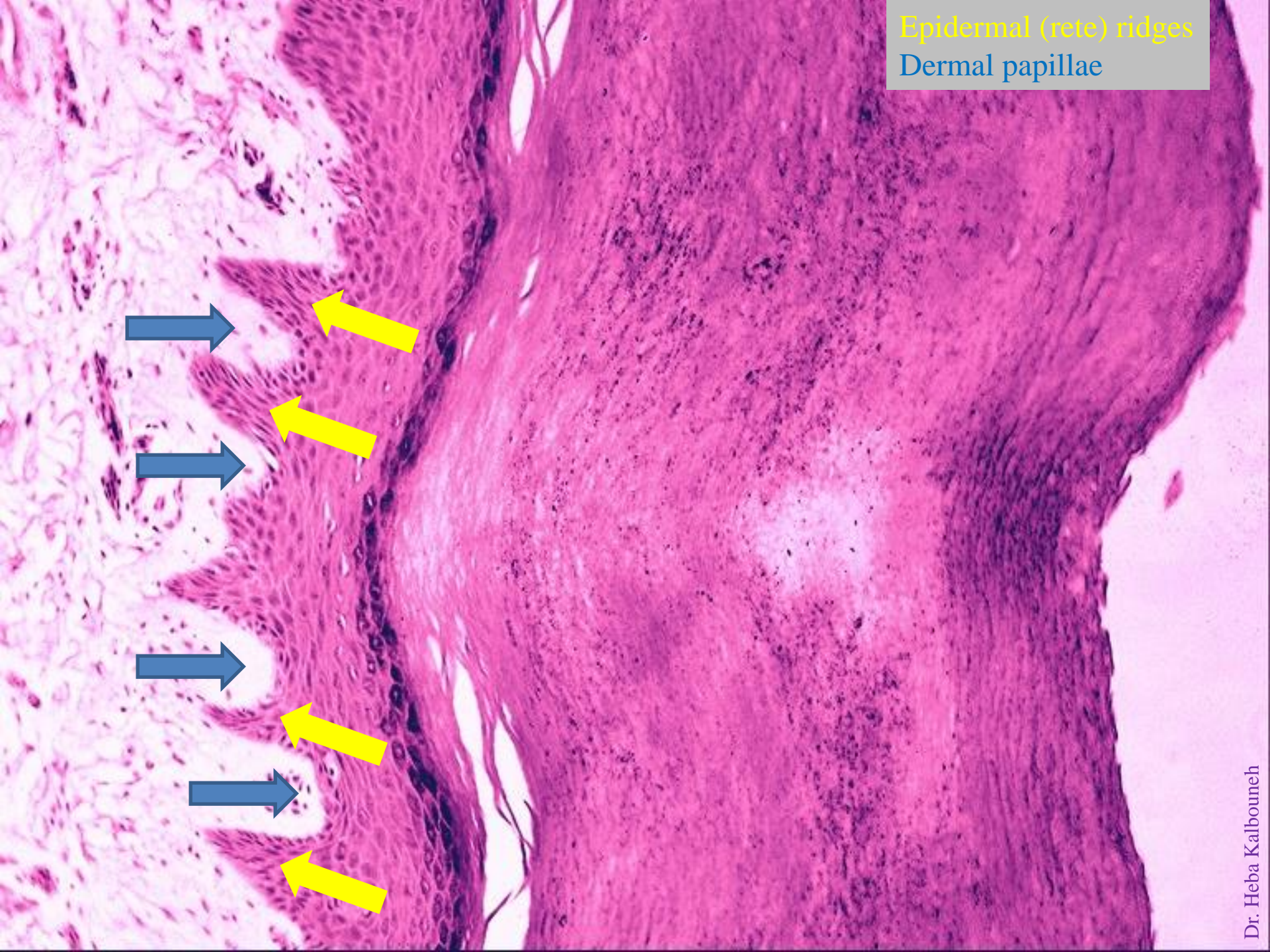
Stratum corneum
Stratum granulosum
Stratum spinosum
Stratum basale
Duct of eccrine sweat gland

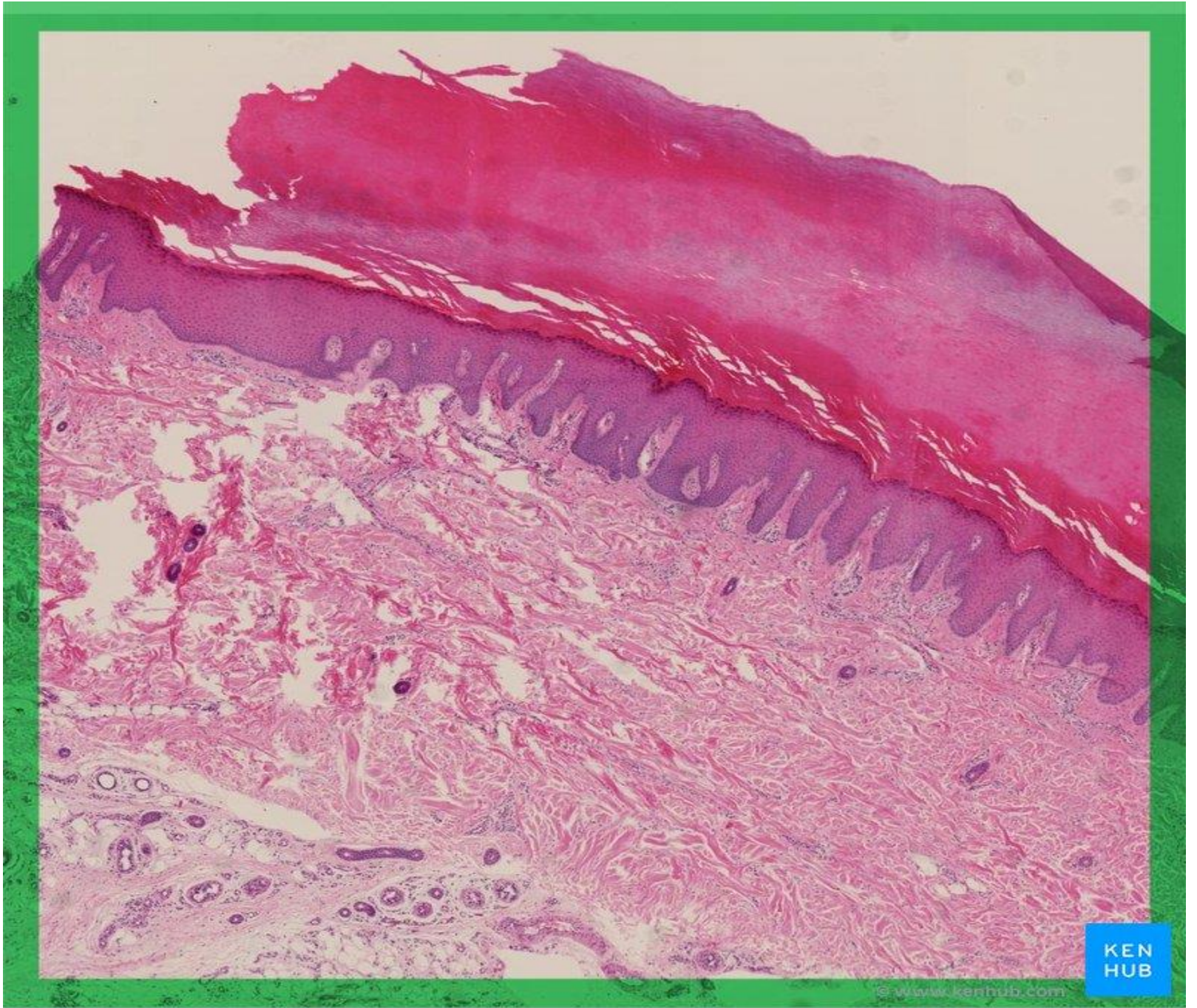


Stratum basale
Stratum spinosum



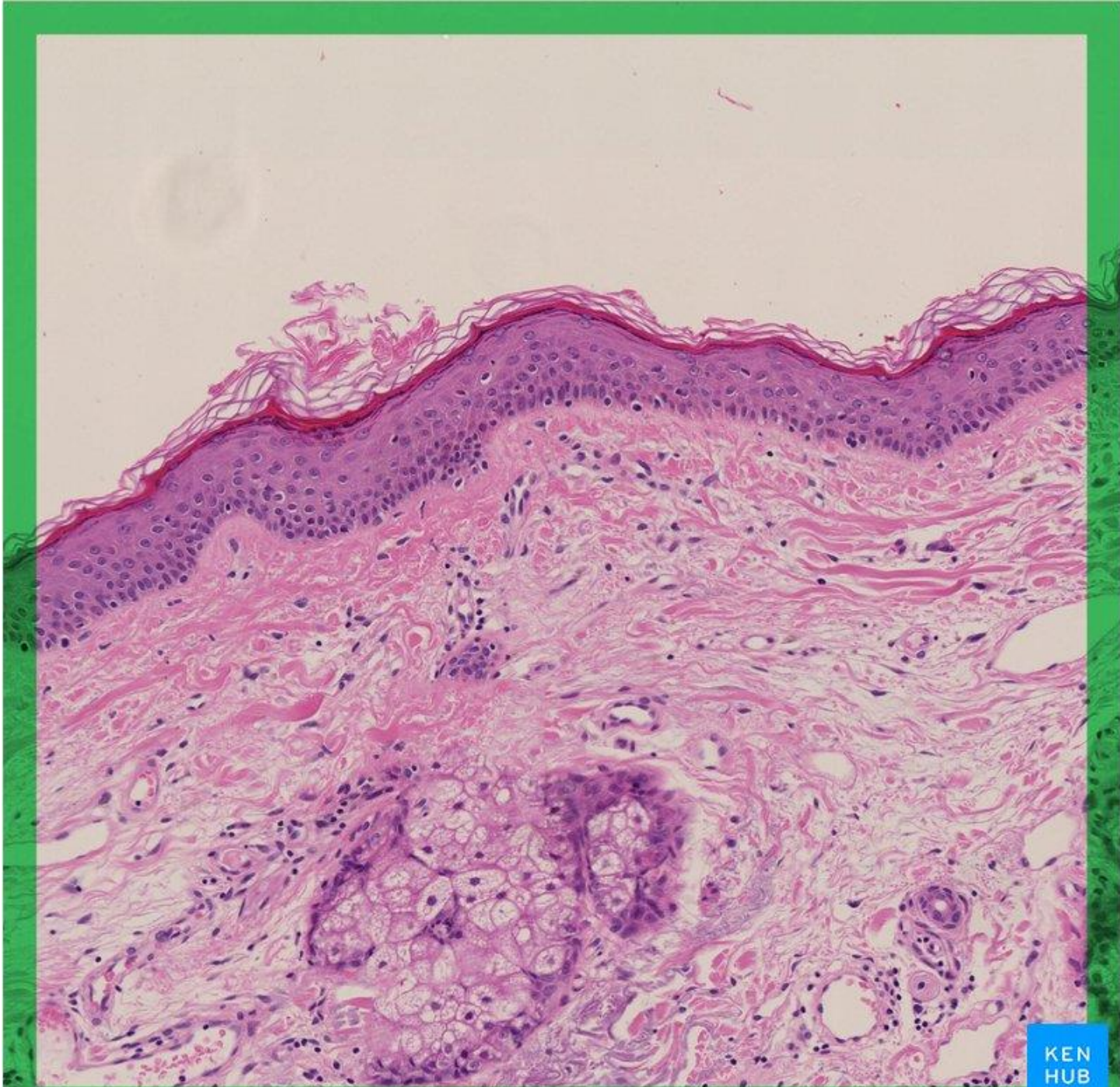
Epidermal (rete) ridges
Dermal papillae

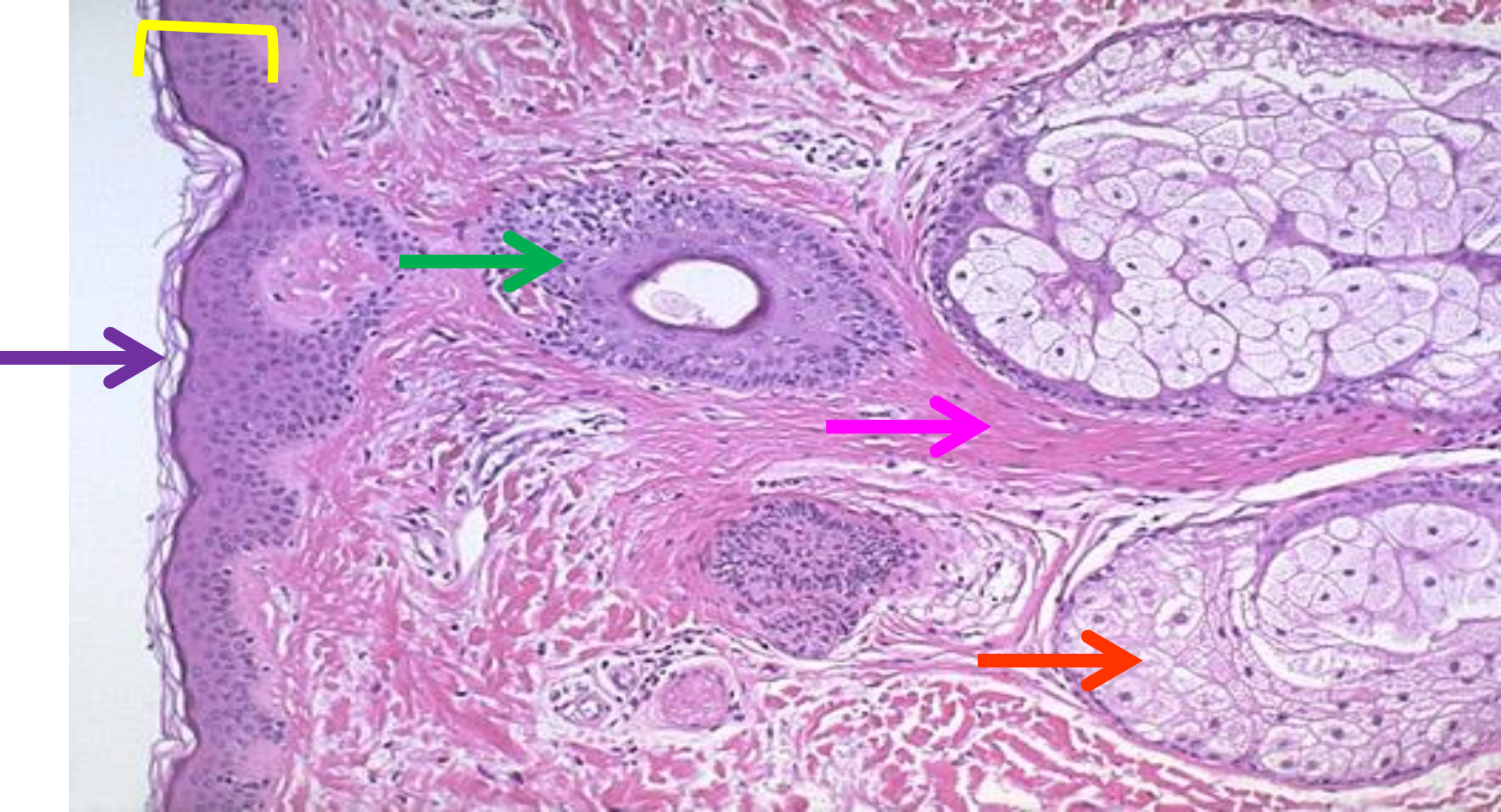




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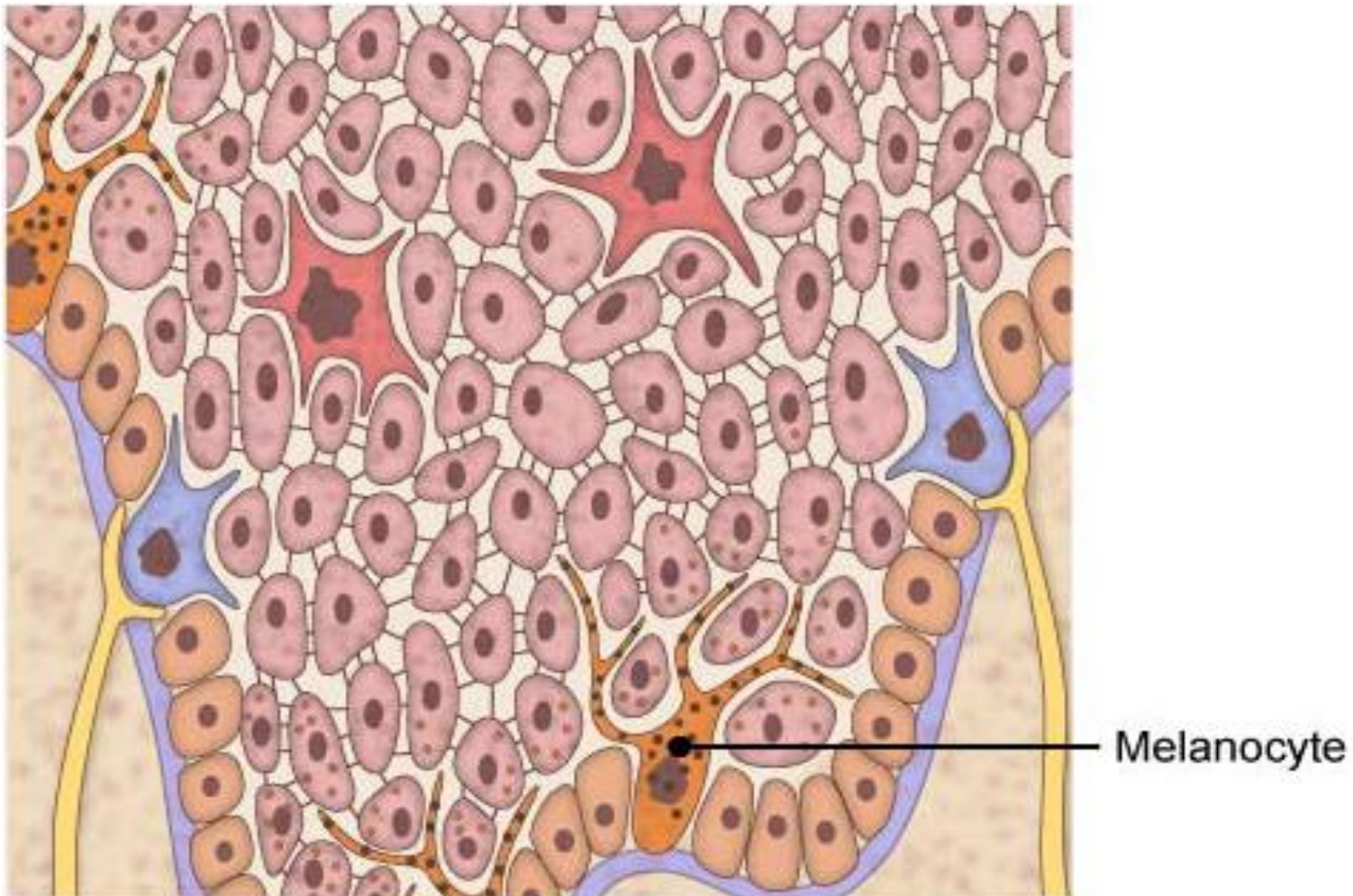


The normal histologic appearance of the skin is shown here. At the top is the **epidermis**. A thin layer of **keratin** overlies the epidermis. This layer of keratinization is thicker on the palms and soles and in areas where skin is rubbed or irritated. Beneath the epidermis is the dermis containing connective tissue with collagen and elastic fibers. At the center can be seen **a hair follicle** with surrounding **sebaceous glands**. Associated with the hair follicle is a small bundle of smooth muscle known as the **arrector pili** that can cause the hair to "stand on end" and dimple the skin to form "goose bumps".

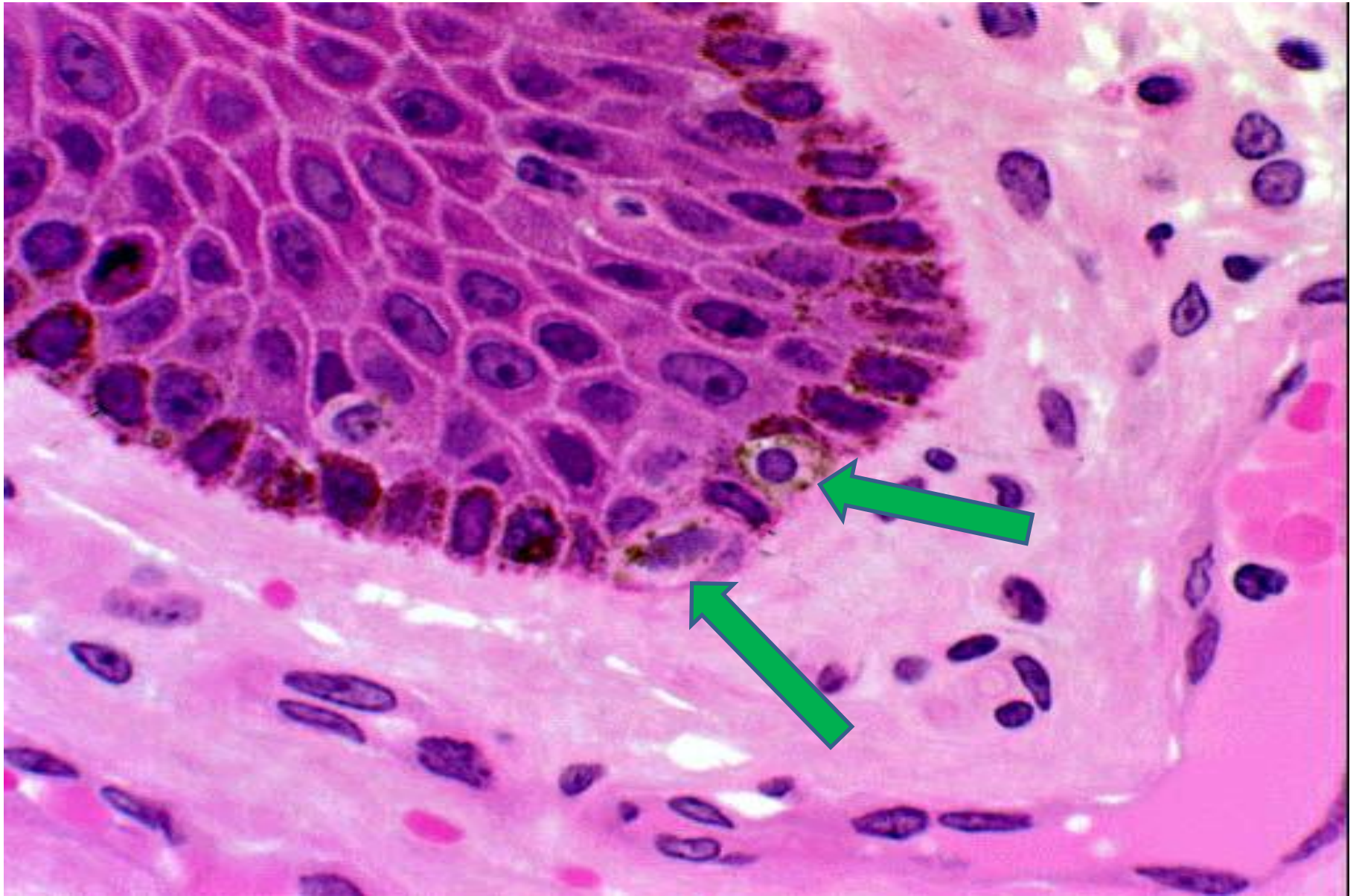
Melanocytes:

- Attached to basal lamina by hemidesmosomes
- Not attached to neighboring keratinocytes
- Lightly stained cytoplasm

1 melanocyte for every 10 basal keratinocytes



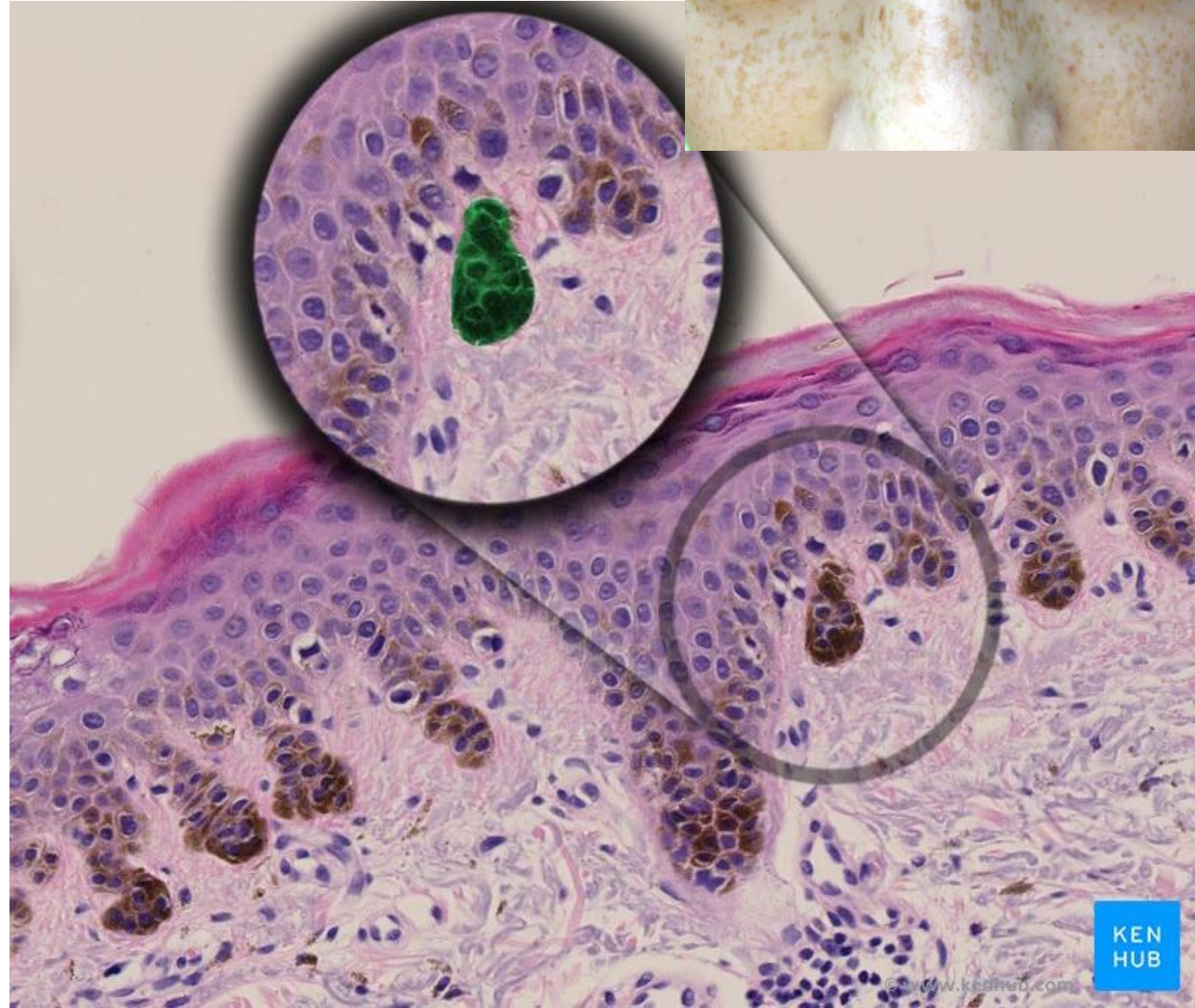
Melanocyte



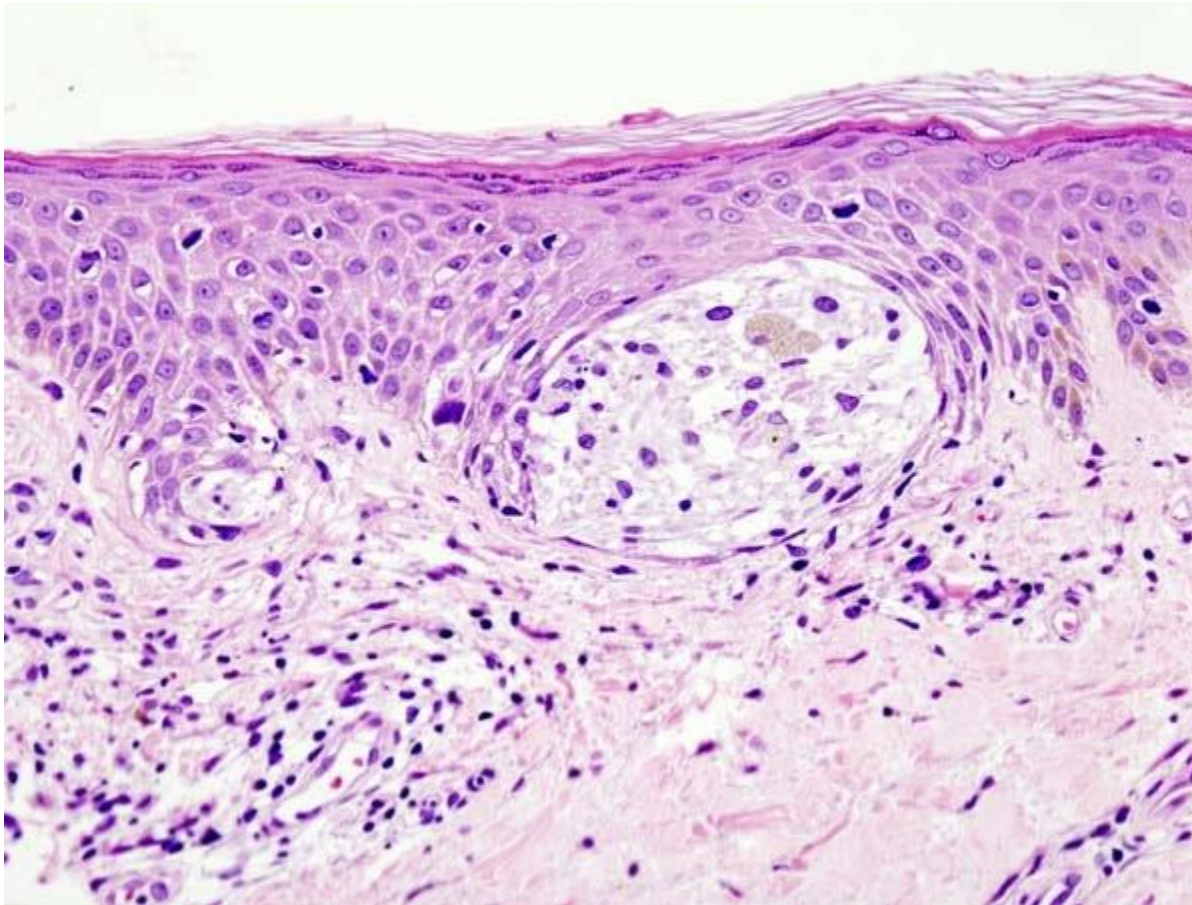
Freckles are clusters of concentrated melaninized cells



Freckles do not have an increased number of the melanin-producing cells, or melanocytes, but instead have melanocytes that overproduce melanosomes changing the coloration of keratinocytes

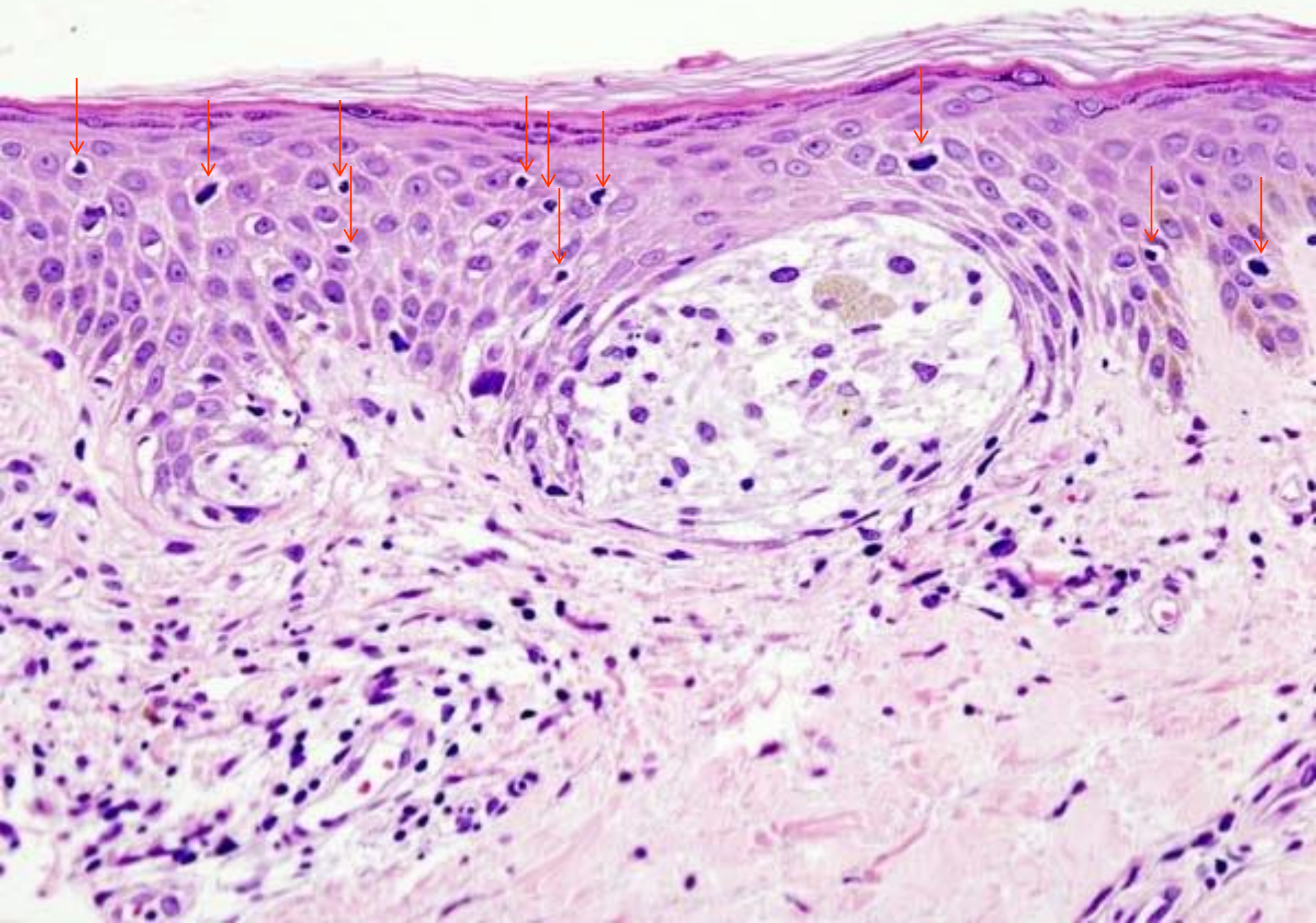


Is there anything abnormal in this epidermis? If so, what might it indicate.



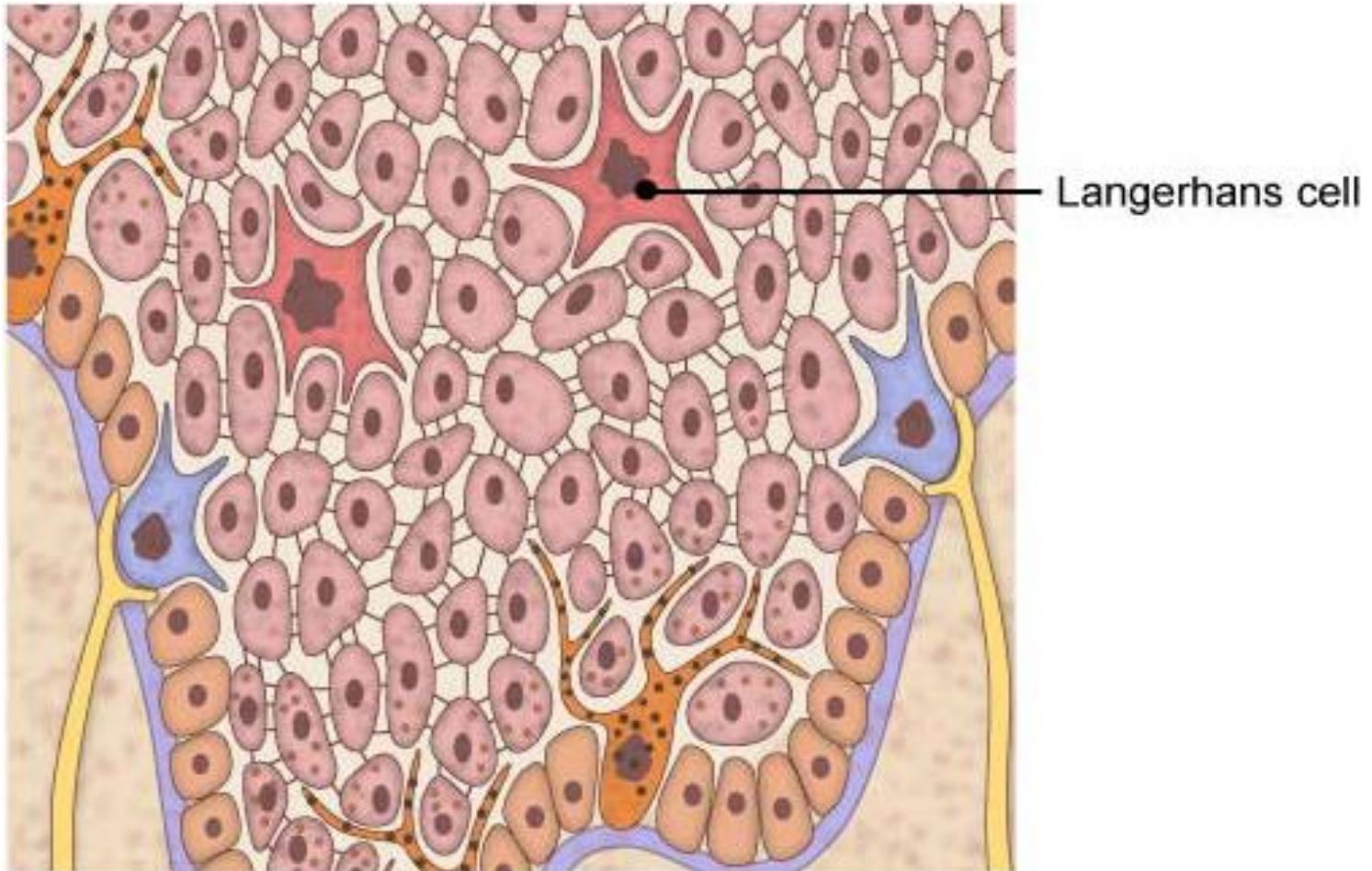
Other pigments!!!

Look for cells with pale cytoplasm in the epidermis. These cells are melanocytes and the large number of melanocytes in upper layers of epidermis is abnormal. In normal skin, melanocytes are found only in the basal layer of the epidermis. The condition suggests the early stages in the development of melanoma.

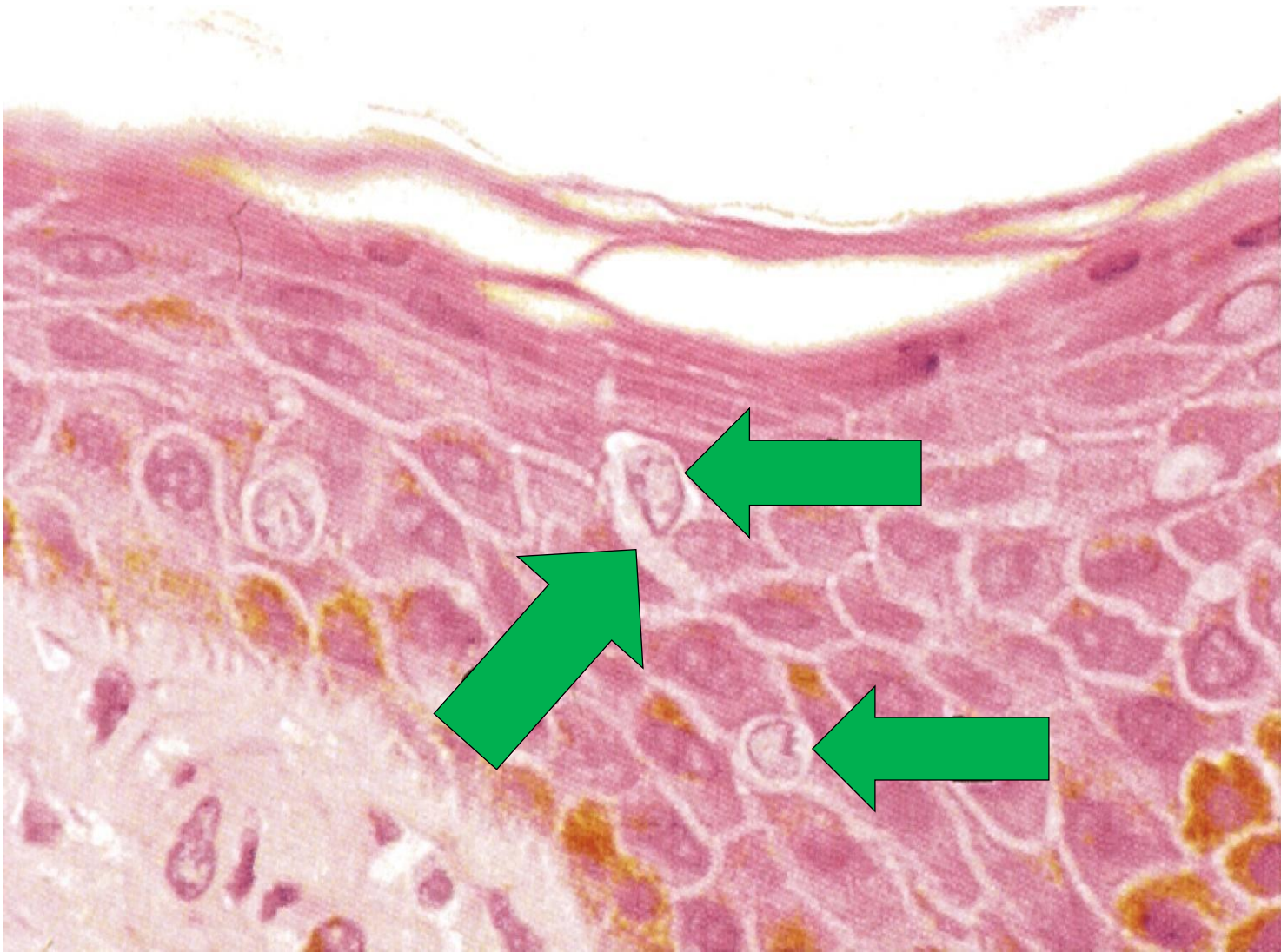


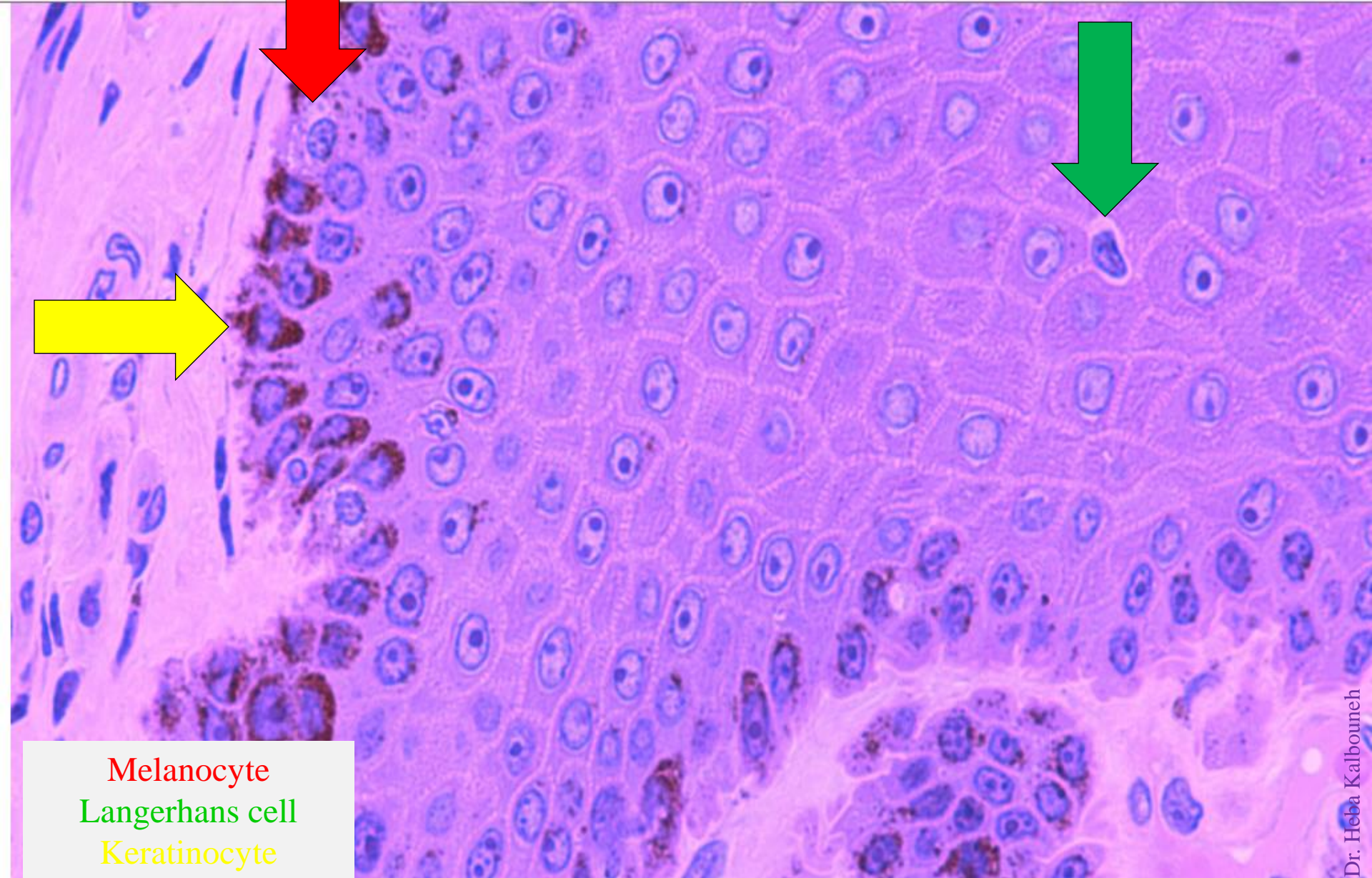
Langerhans cells:

- Originate from bone marrow (monocytes)
- Mainly in the stratum spinosum
- Langerhans cells recognize, phagocytose, and process foreign antigens



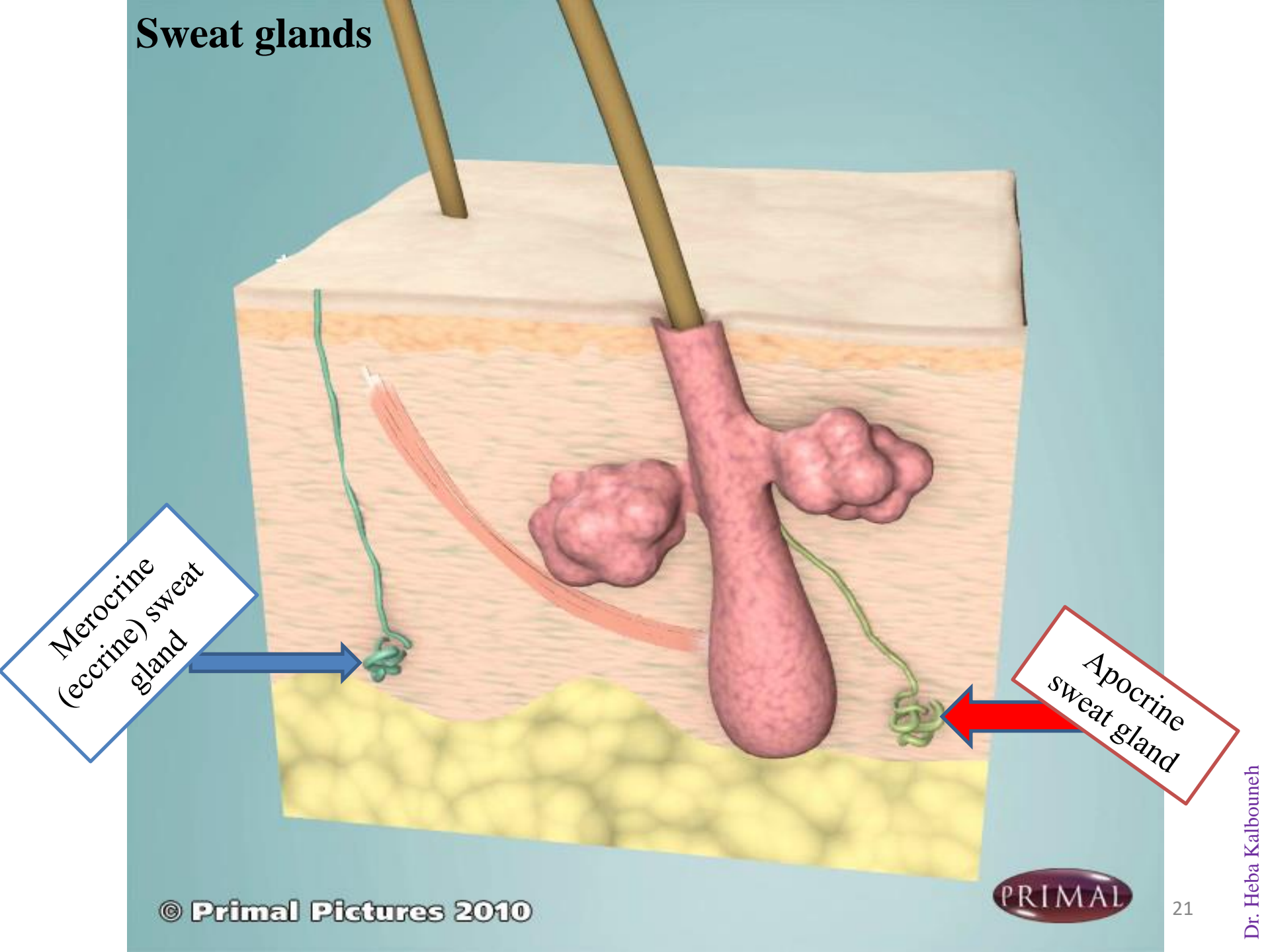
Langerhans cells





Melanocyte
Langerhans cell
Keratinocyte

Sweat glands



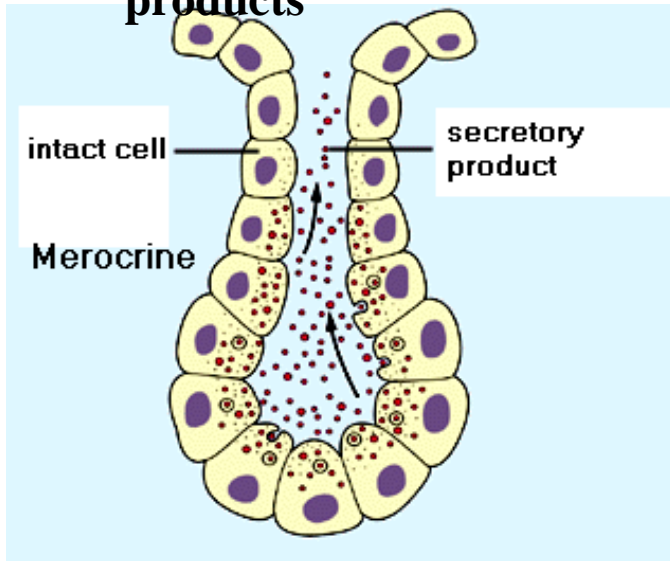
Merocrine
(eccrine) sweat
gland

Apocrine
sweat gland

Sweat Glands

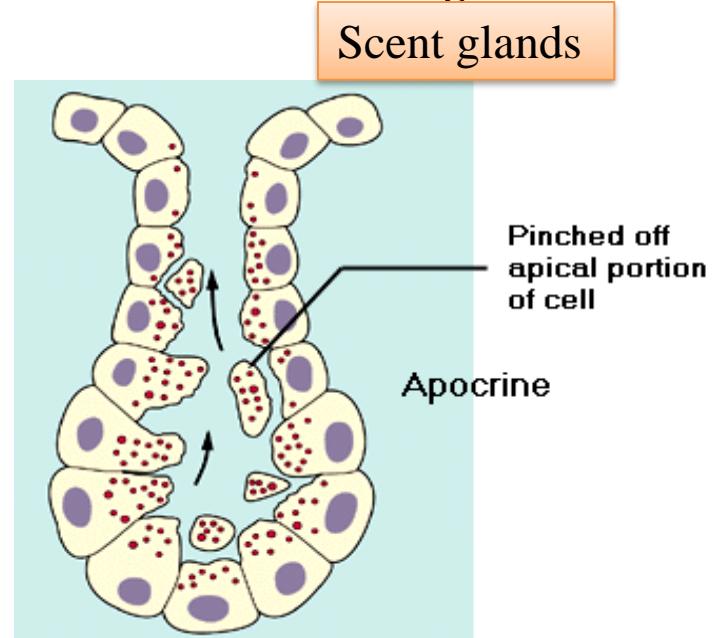
Eccrine sweat gland

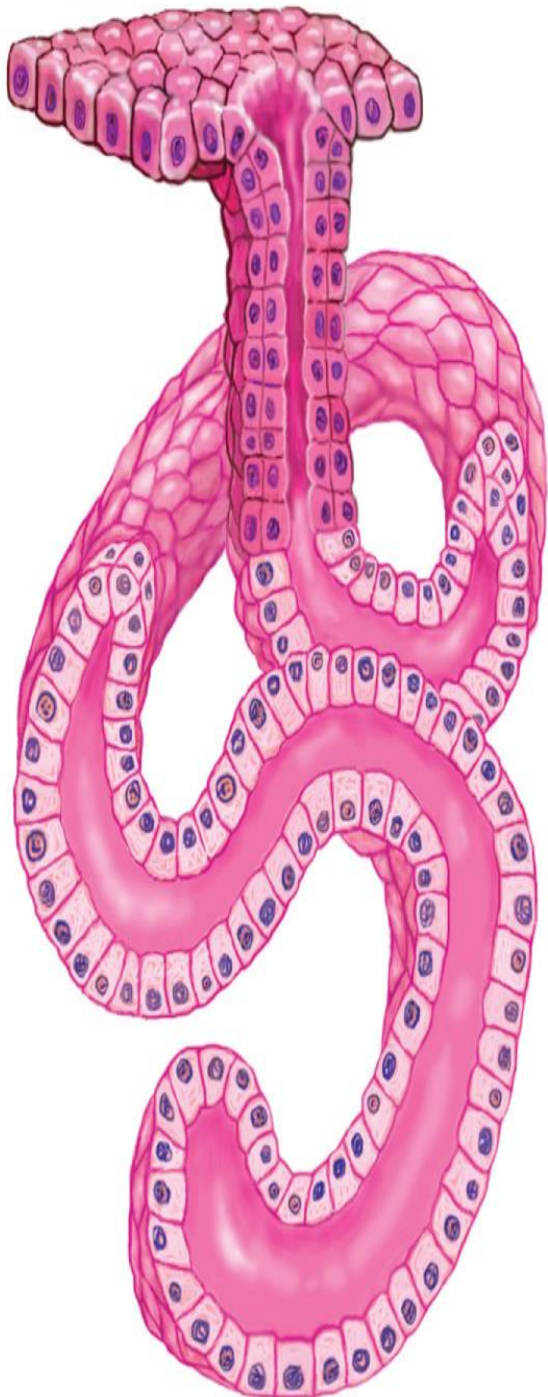
- Merocrine secretion
- Empty directly onto skin surface
- Location: most all over body (esp. abundant on palms & soles: ~ 500/cm²)
- Clear, watery secretion (99% H₂O; rest NaCl + some waste products)



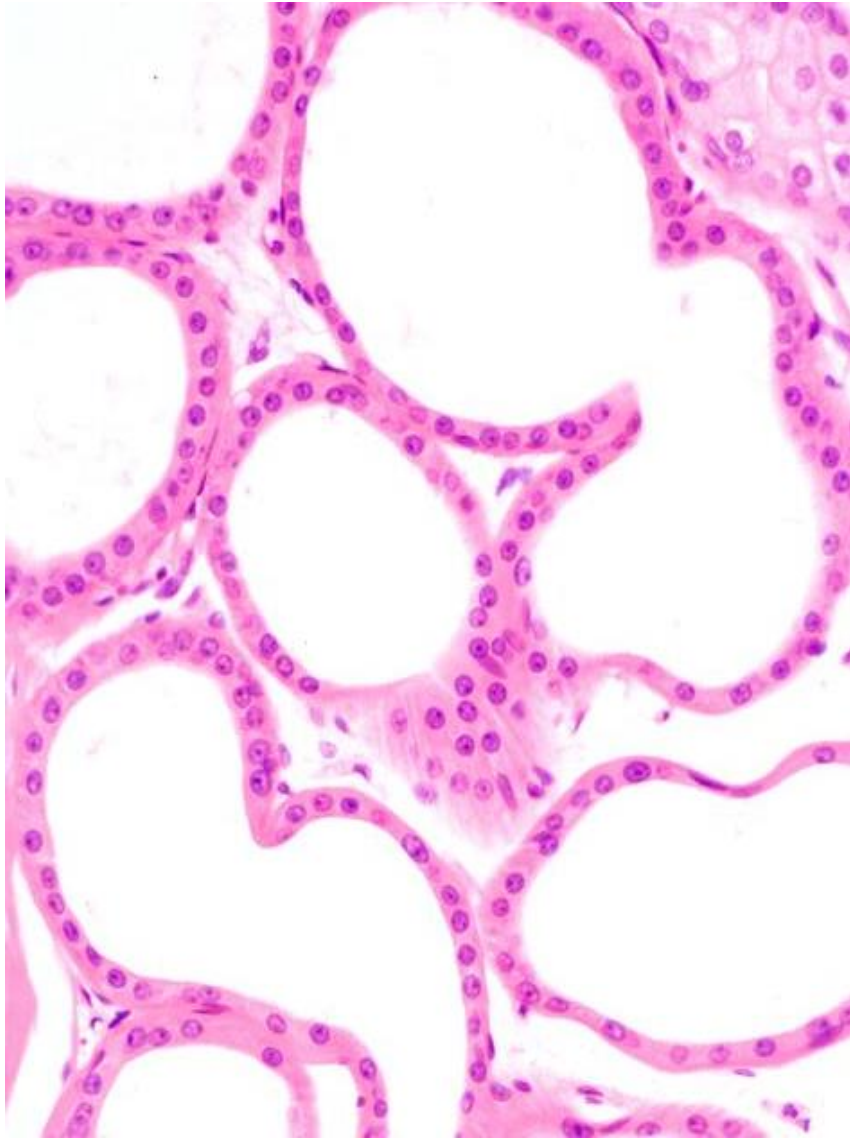
Apocrine sweat gland

- Empty into hair follicle
- Location: armpits, groin, nipples
- Viscous, cloudy secretion → good nutrient source for bacteria (odor !!)
- Secretion may contain Pheromones
- Secretion begins at puberty and is stimulated during emotional distress

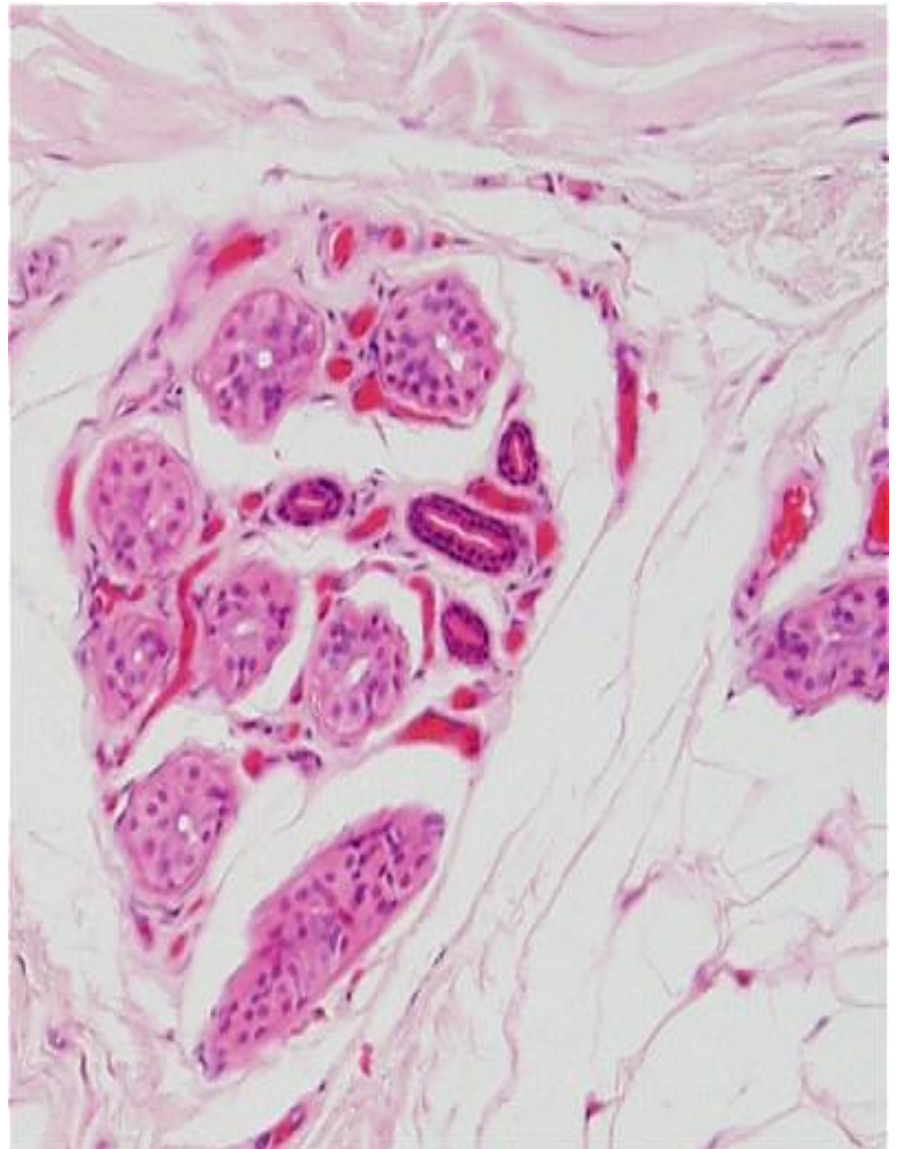


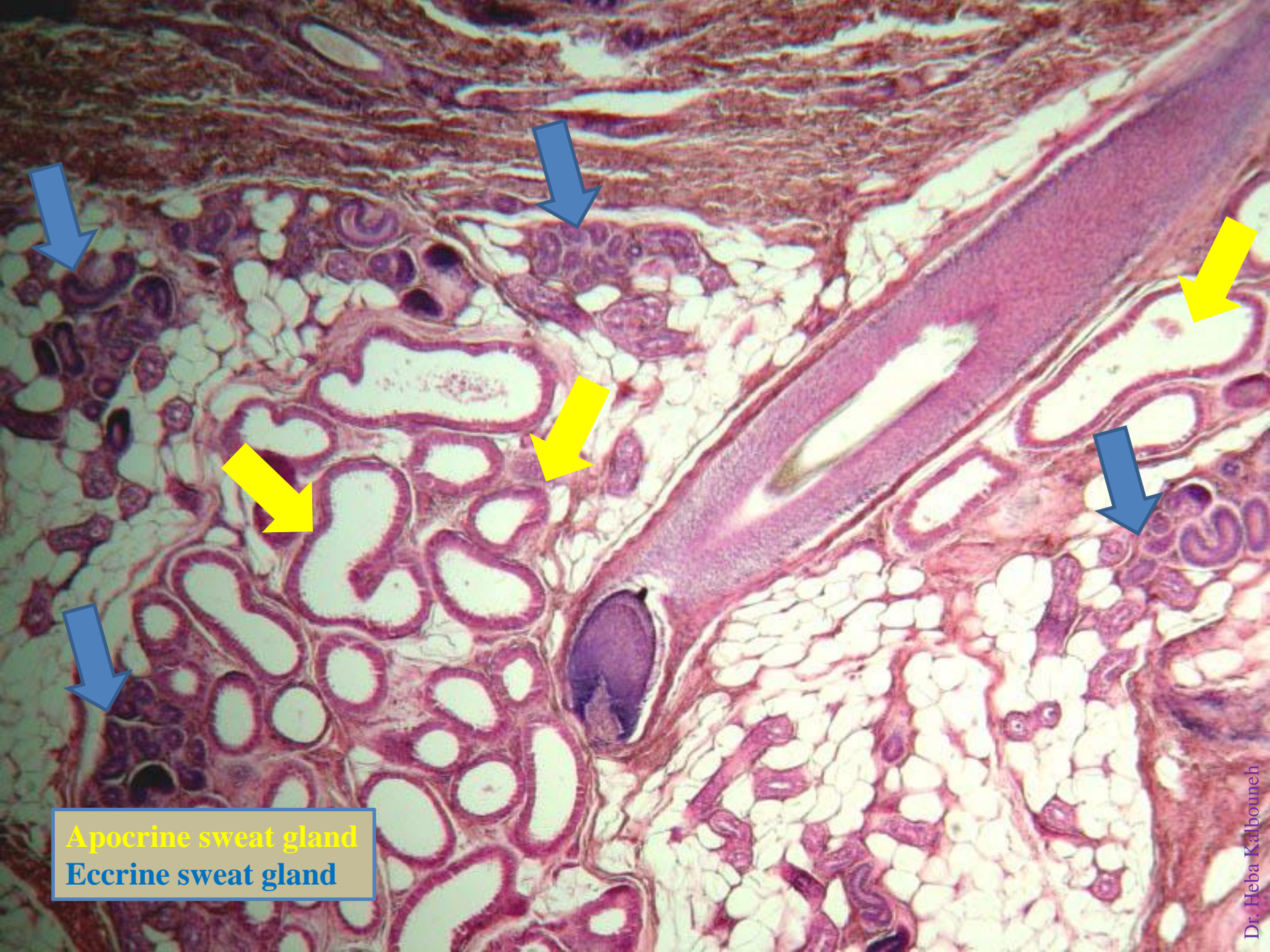


Apocrine sweat glands



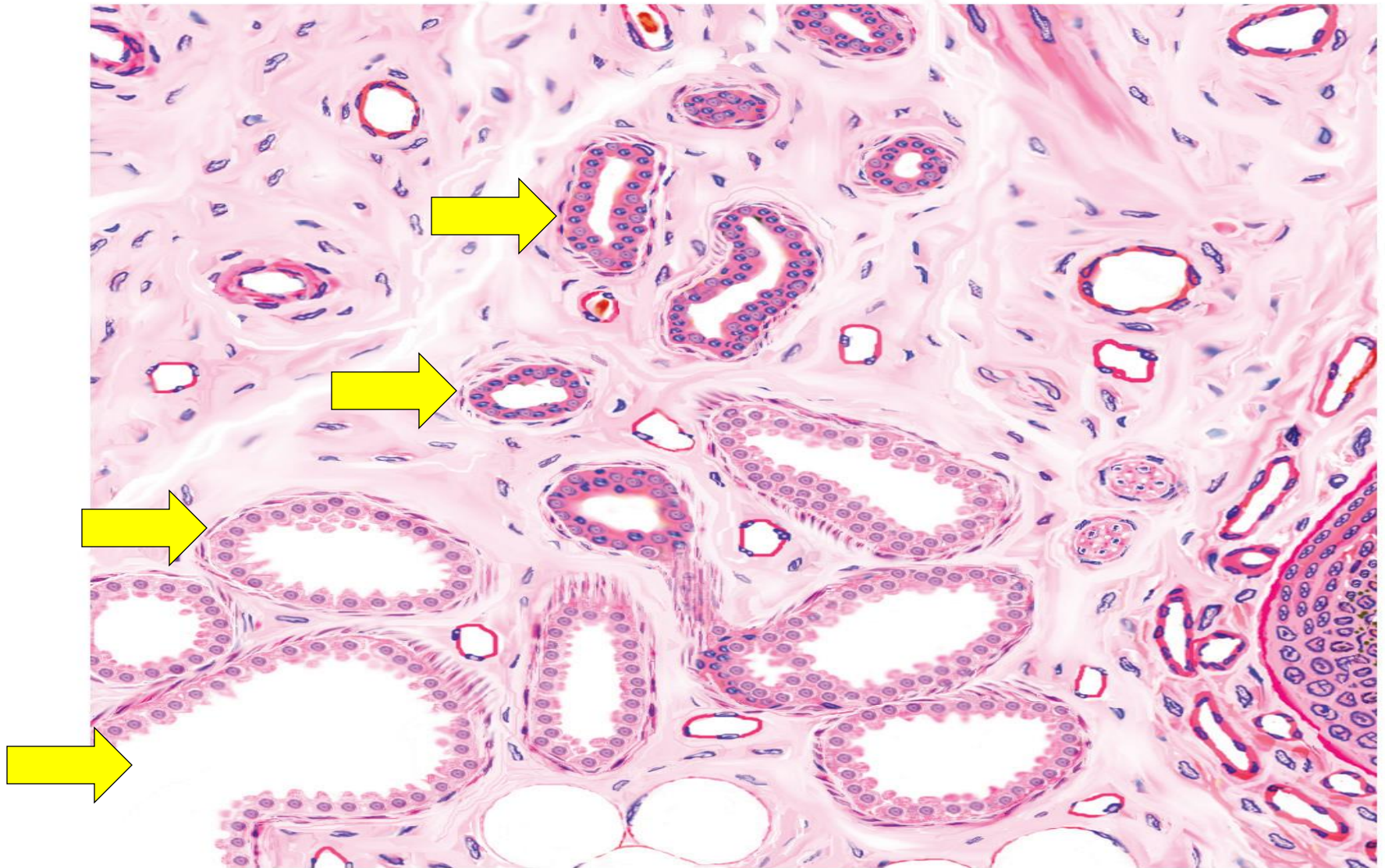
Eccrine (merocrine) sweat glands



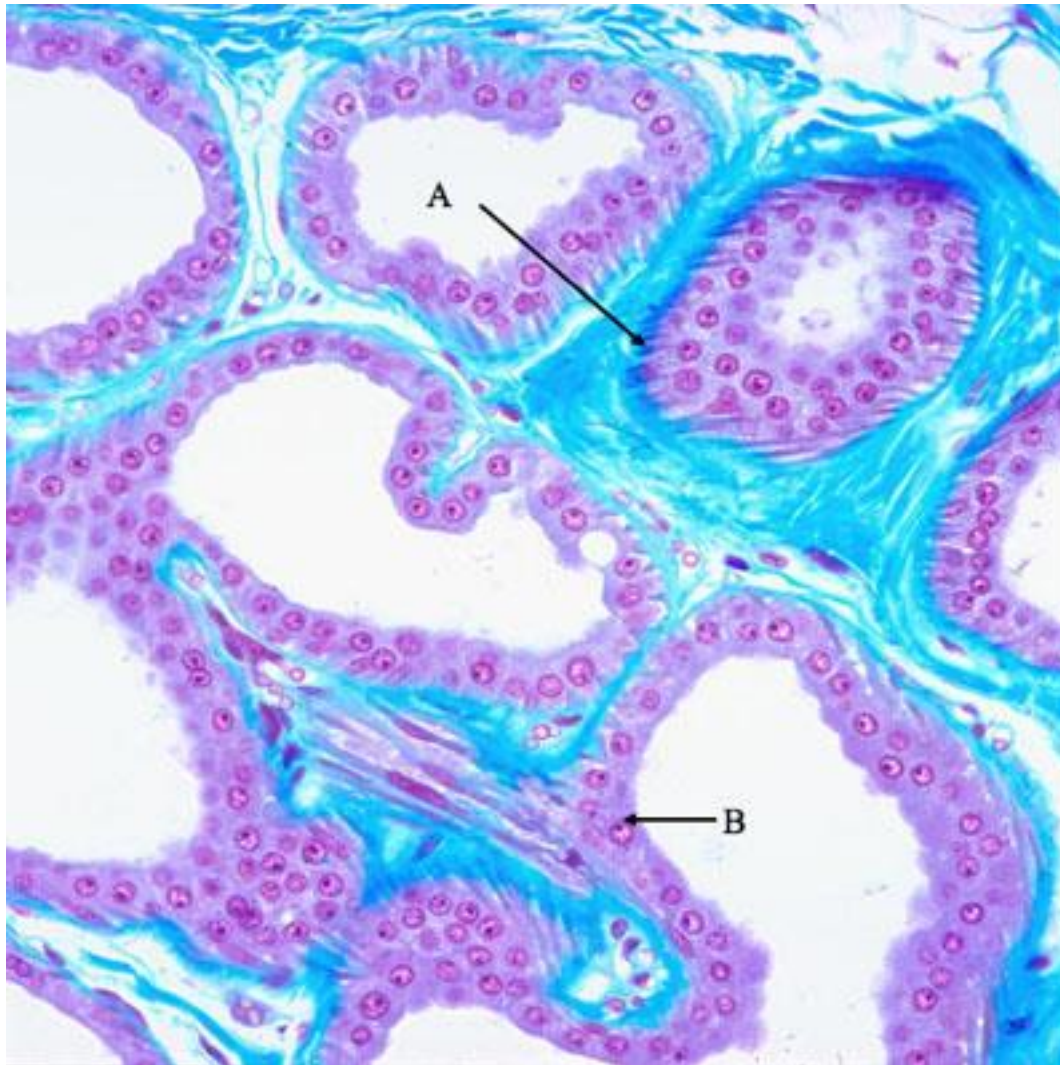


Apocrine sweat gland
Eccrine sweat gland

Apocrine or eccrine sweat glands????

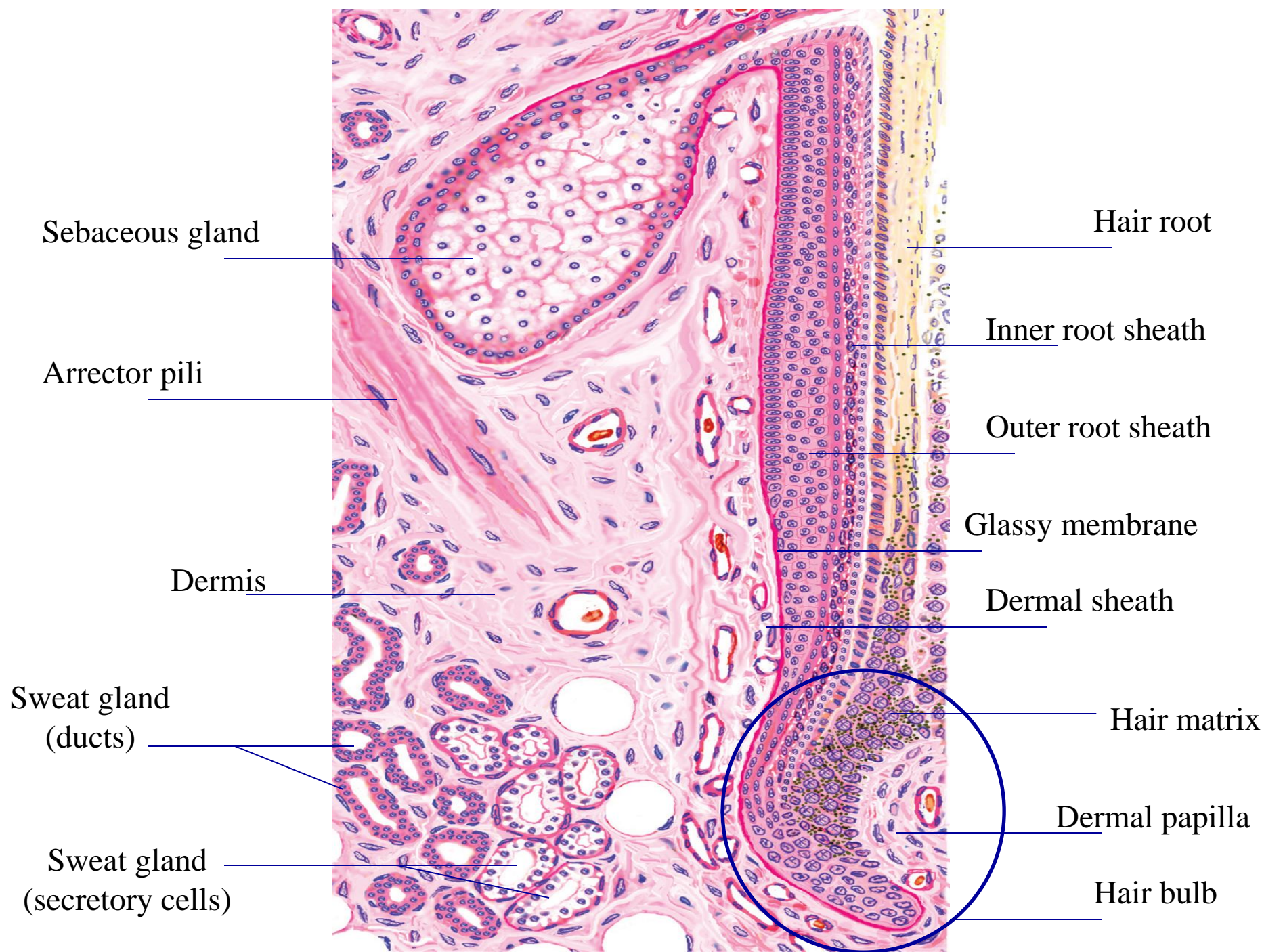


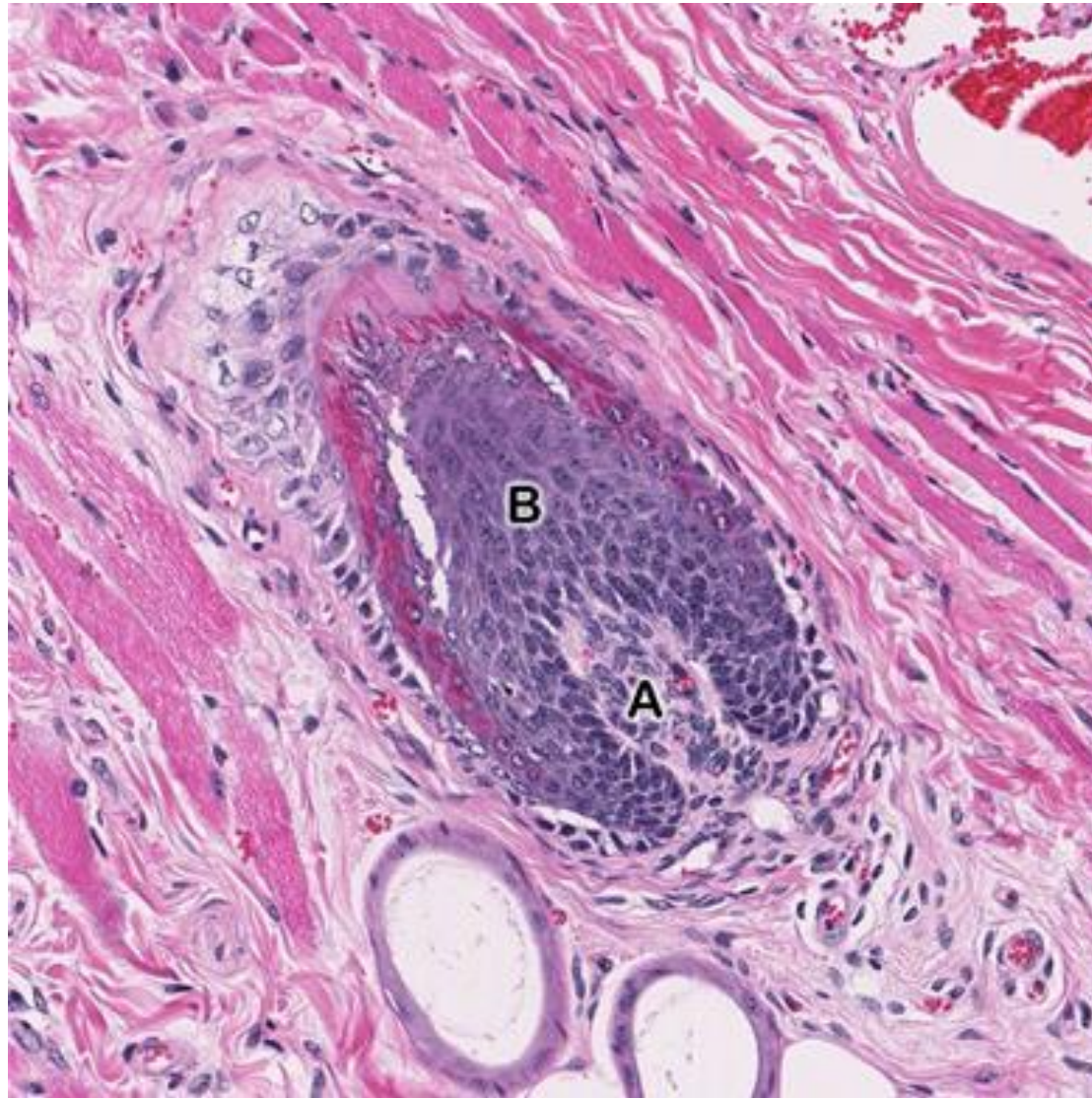
Apocrine or eccrine sweat glands????



A: Duct

B: secretory portion

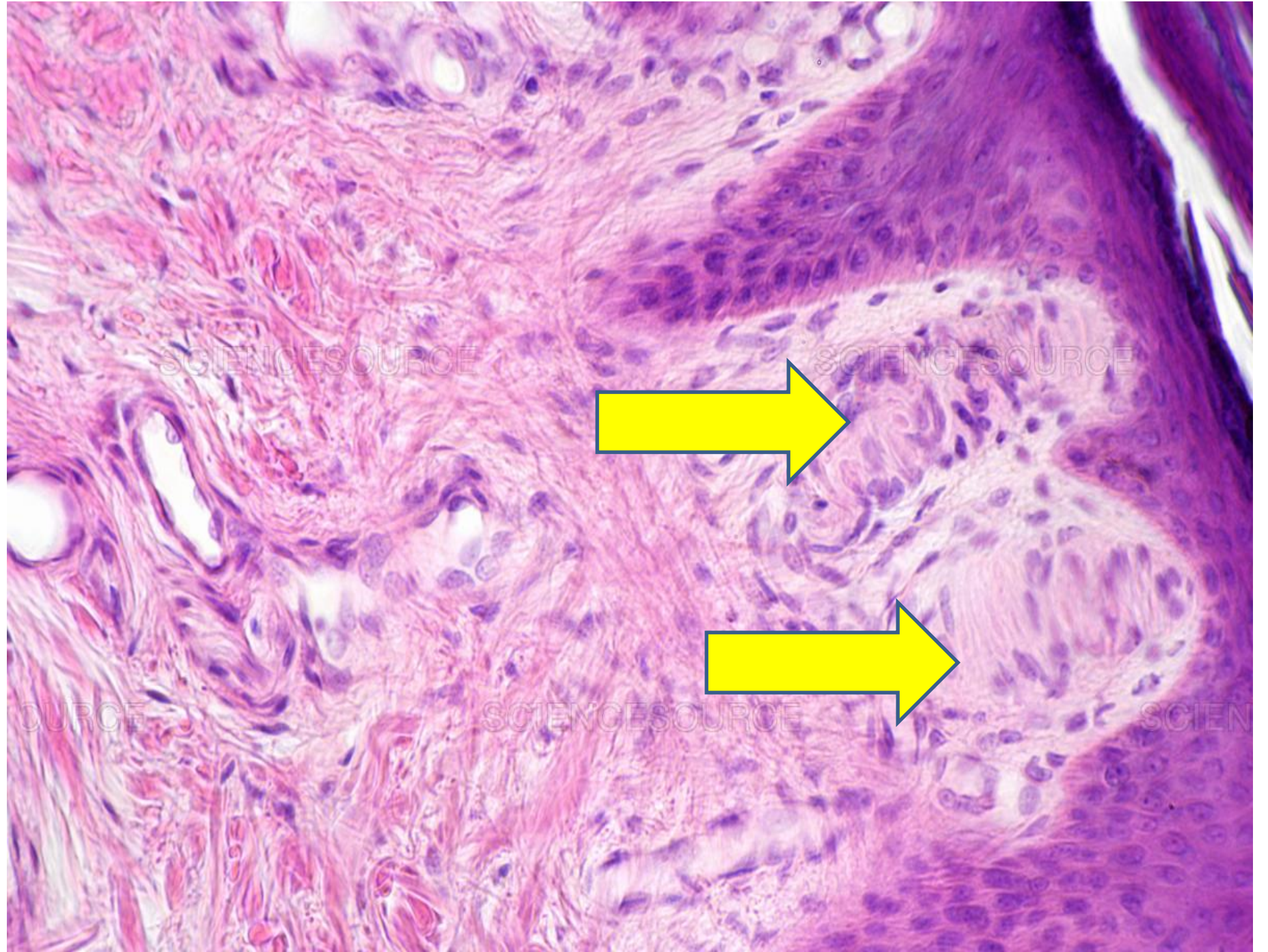


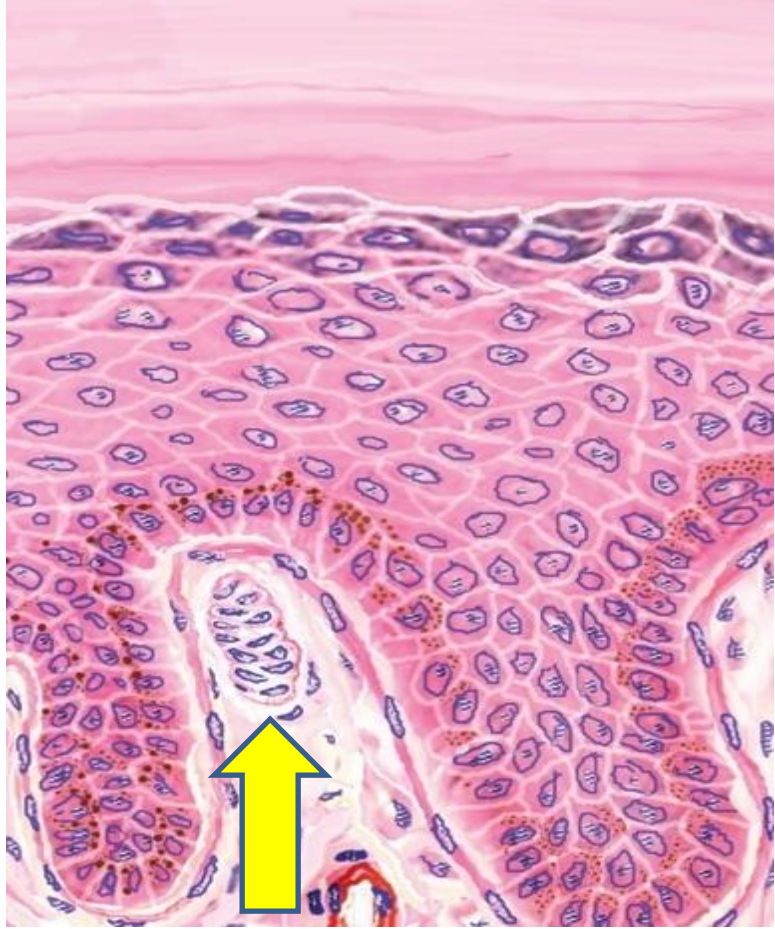


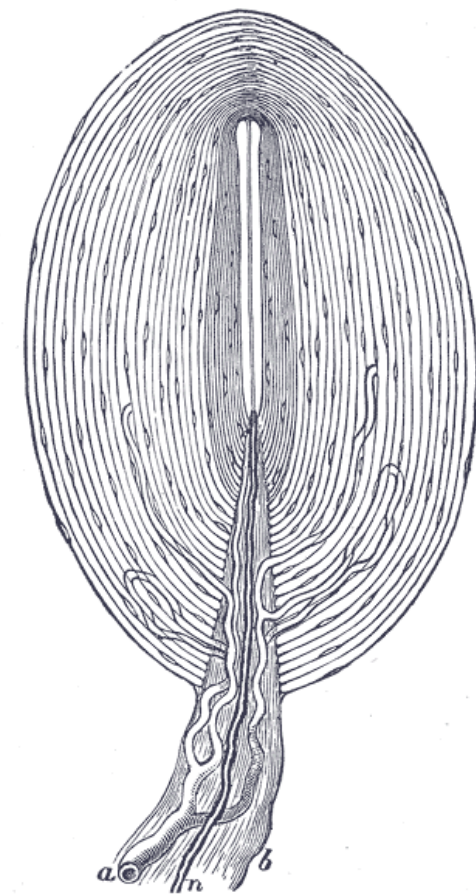
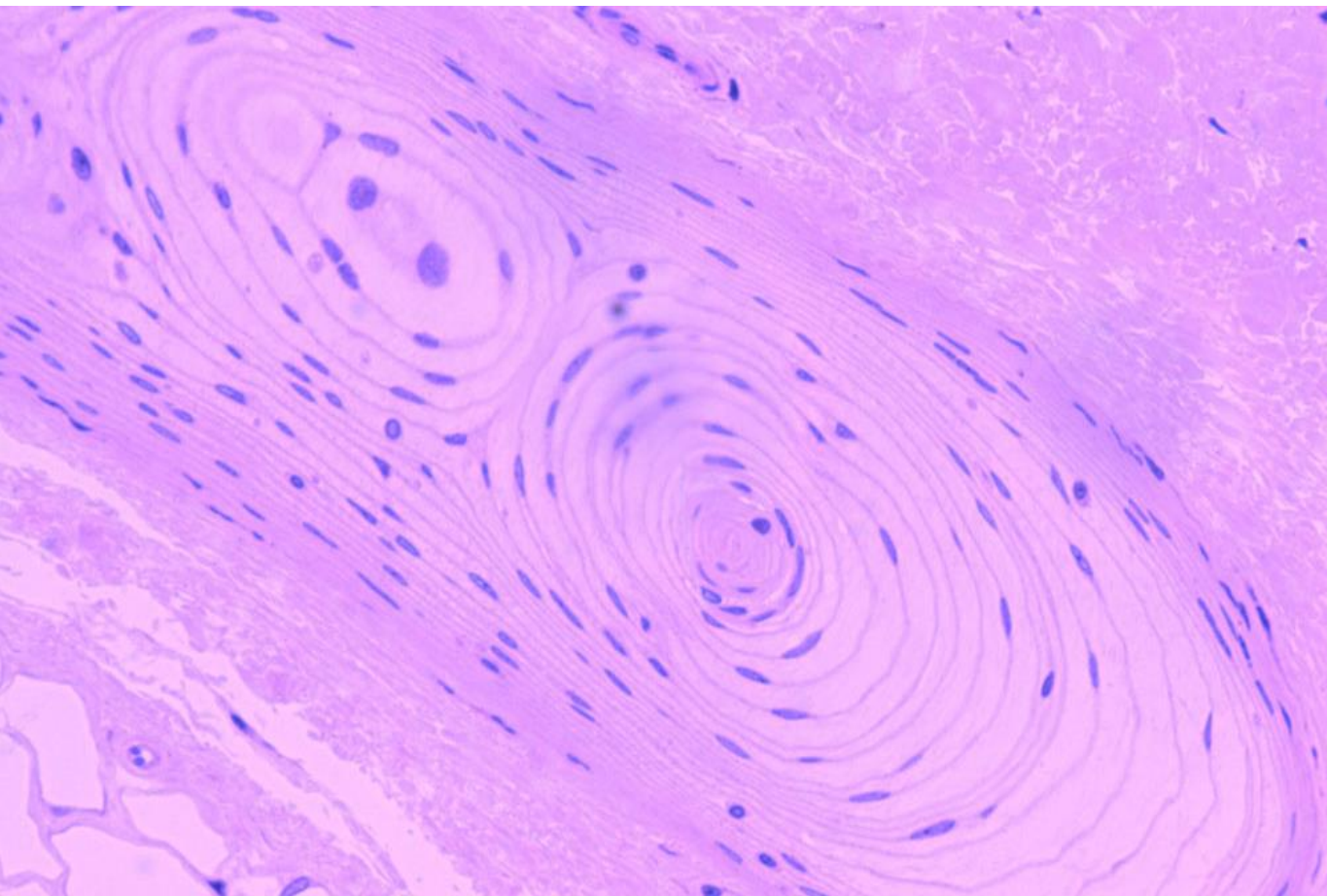
A: Dermal papilla
B: Hair matrix

Meissner's corpuscles localize in the dermis between epidermal ridges.
Meissner's corpuscles are touch receptors and enriched in fingers and toes







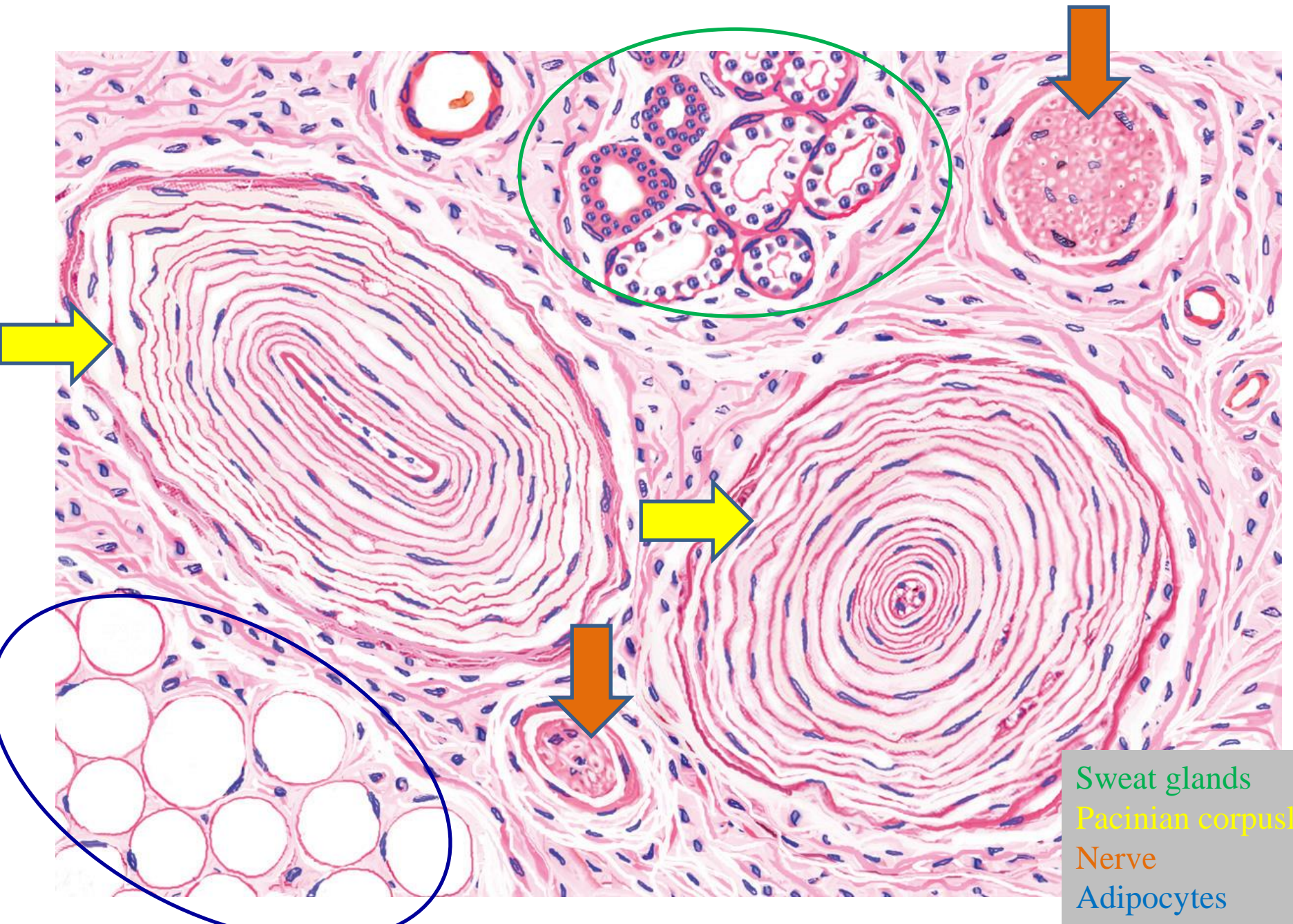


Pacinian Corpuscle

Pacinian corpuscles are large (~ 1 mm), onion-like structures in the dermis and hypodermis.

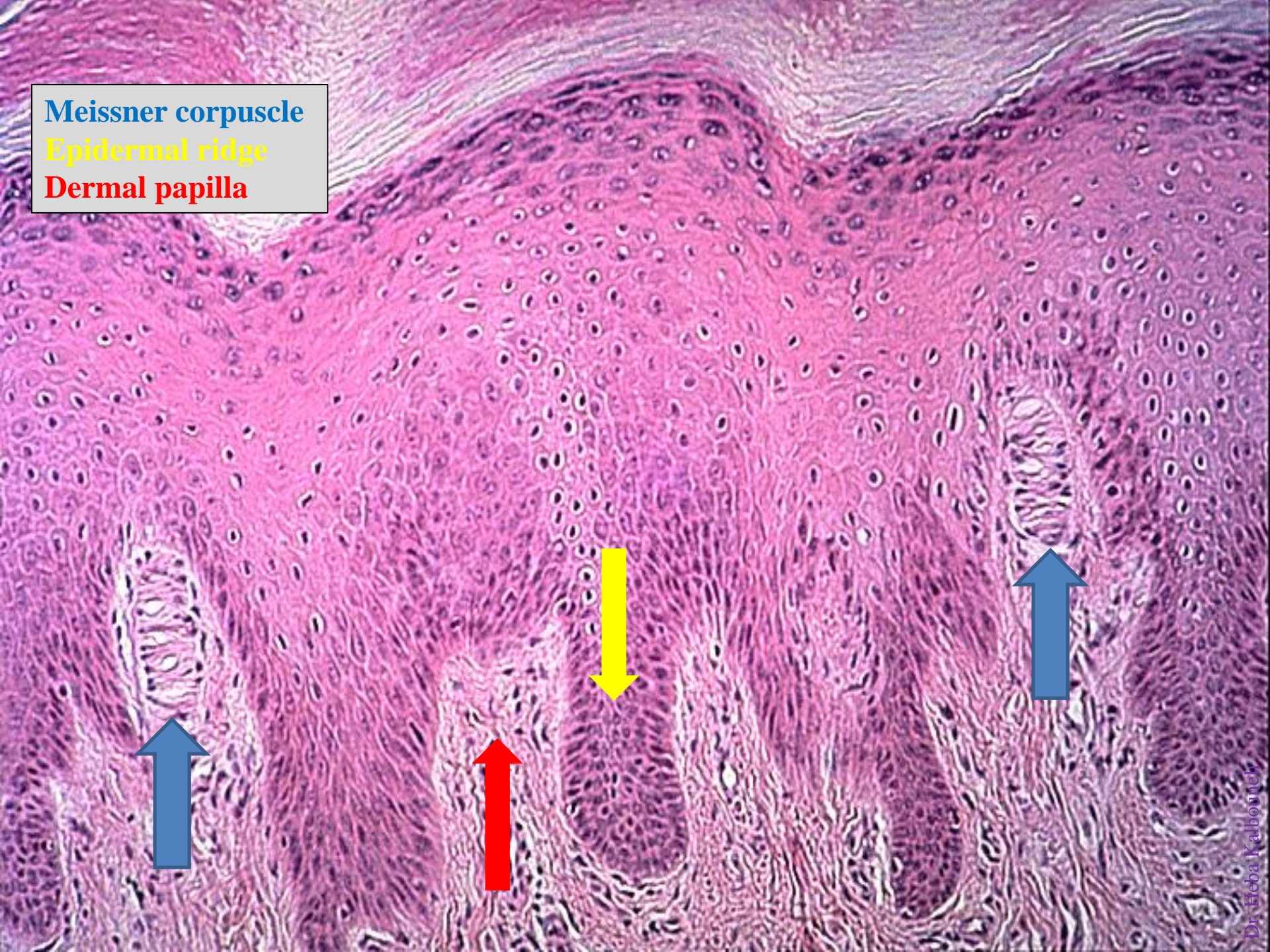
Pacinian corpuscles contain a myelinated nerve ending in the central core of the structure.

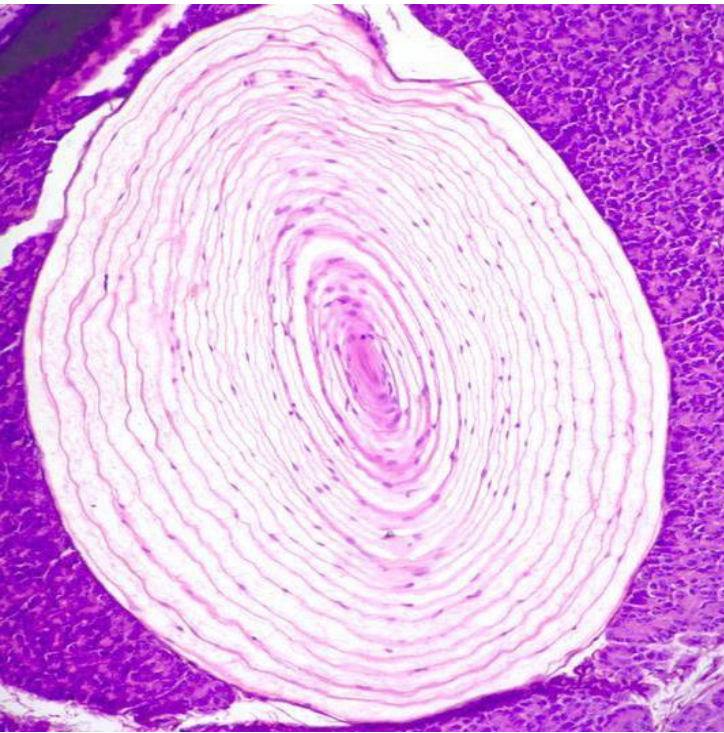
Pacinian corpuscles are sensitive to mechanical and vibratory pressure, rapidly changing pressure



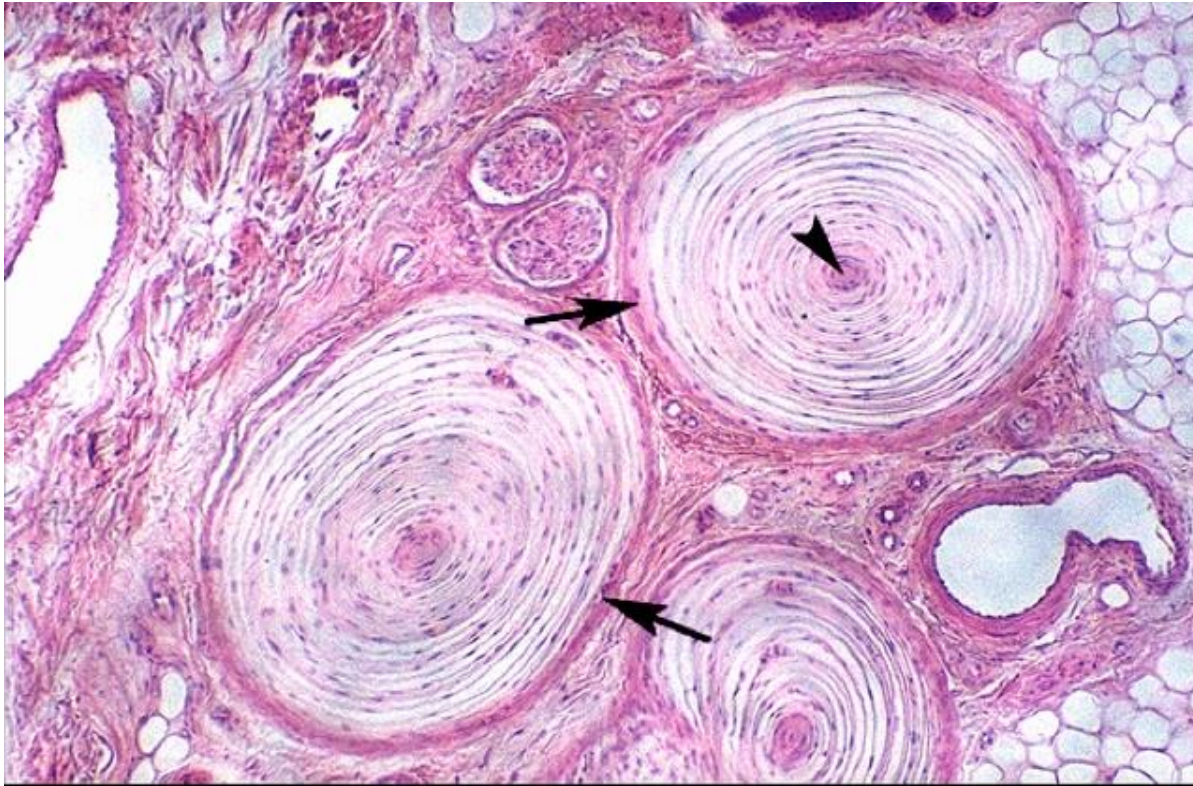
Sweat glands
Pacinian corpuscle
Nerve
Adipocytes

Meissner corpuscle
Epidermal ridge
Dermal papilla

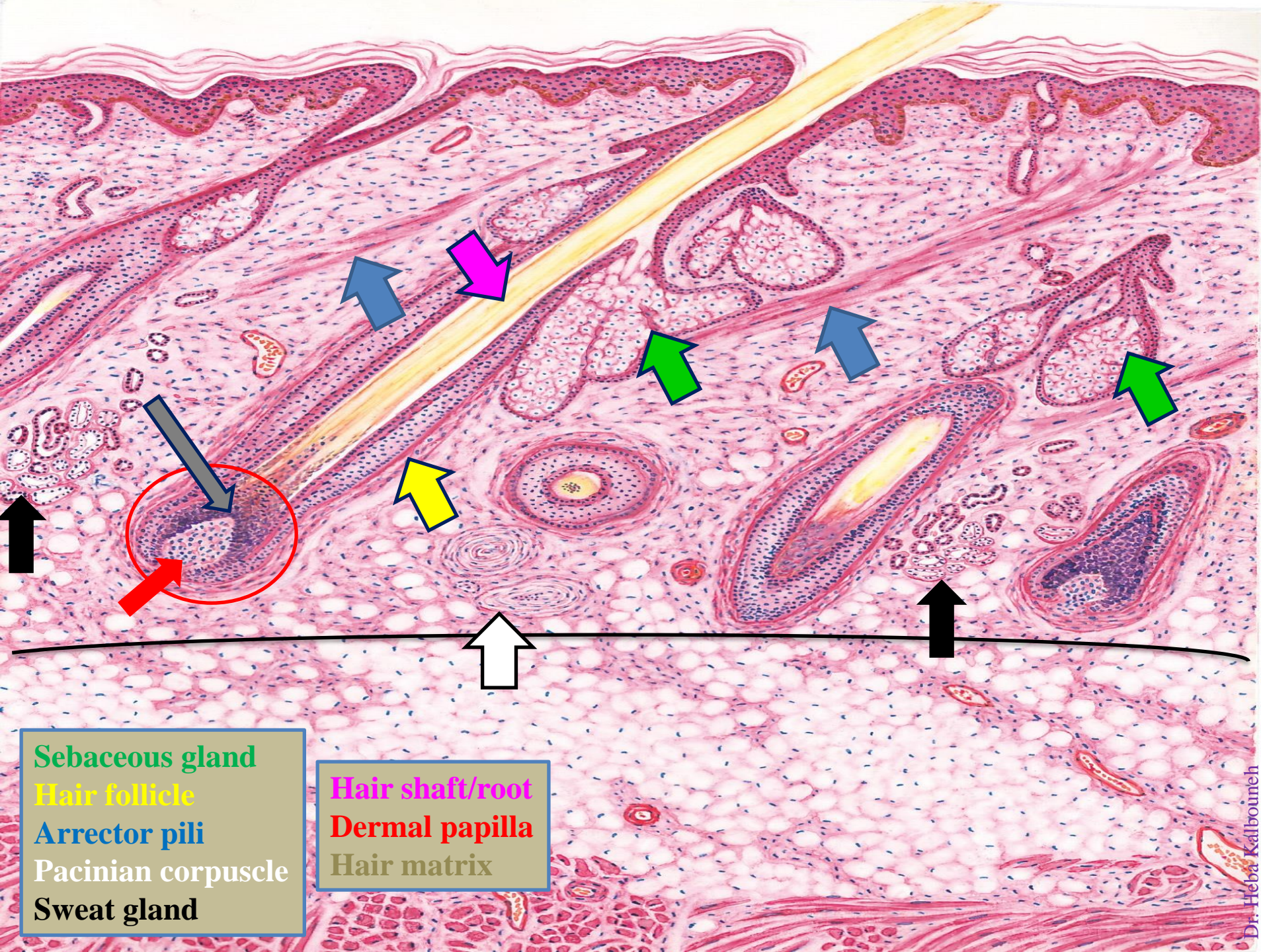




Pacinian corpuscles



Pacinian corpuscles



Sebaceous gland

Hair follicle

Arrector pili

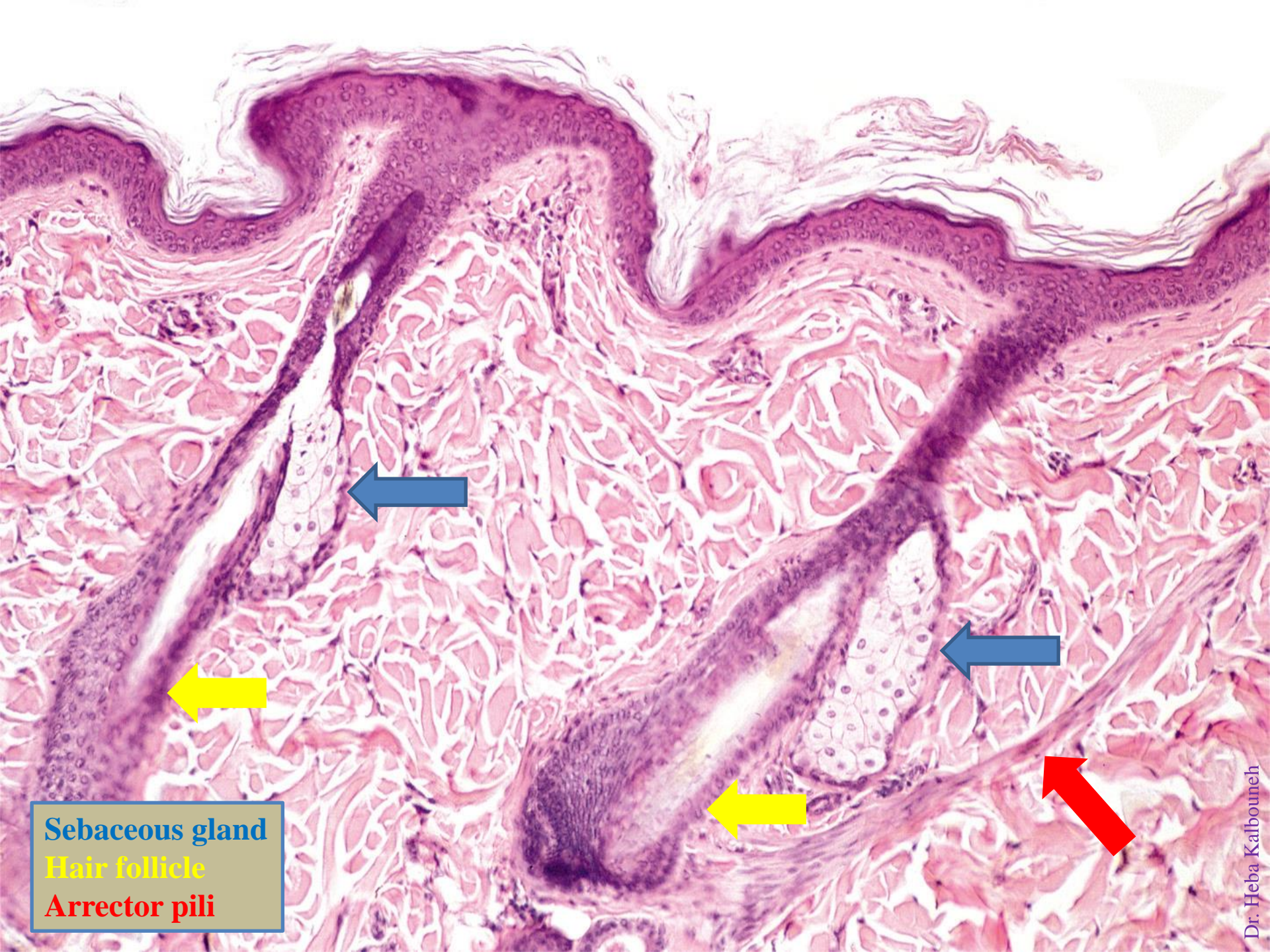
Pacinian corpuscle

Sweat gland

Hair shaft/root

Dermal papilla

Hair matrix



Sebaceous gland
Hair follicle
Arrector pili