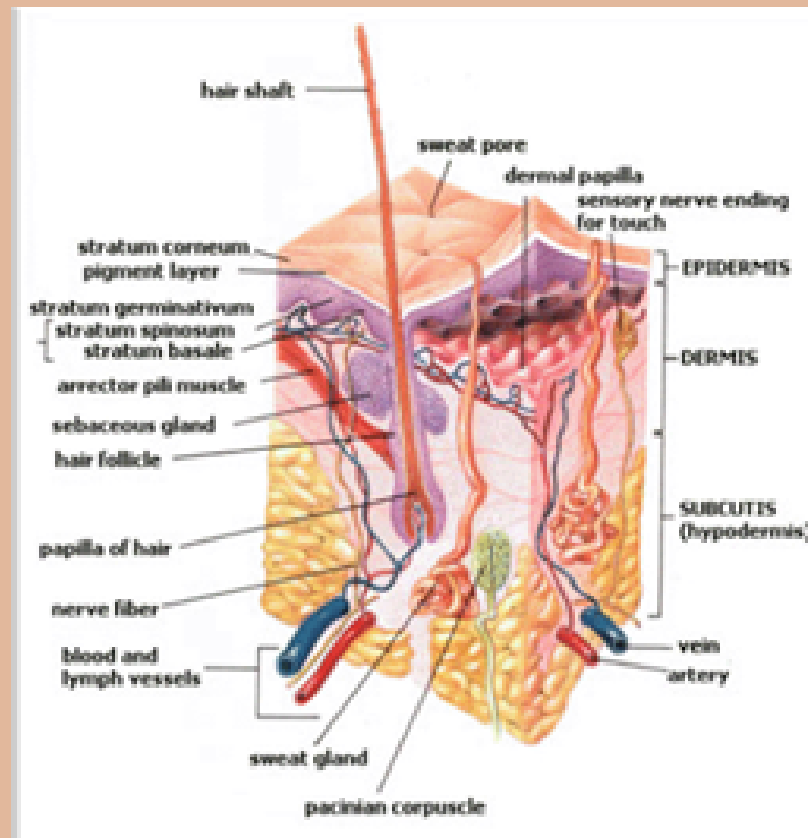


Integumentary System: Accessory Structures of the Skin



Answer these in your notebook as you are waiting to start class.

1. Which is not true about the integumentary system?
 - a. Skin can be called cutaneous membrane or integument
 - b. Covers the entire surface of the human body
 - c. Is the largest organ in the body
 - d. It absorbs a large amount of water
2. What are the names of the two regions of skin?
3. What is the name of the area below the skin with subcutaneous tissue?
4. Which layer of the epidermis is only found in thick skin?
5. What is the name of the lowest layer of the epidermis?
6. What is the name of the protein that waterproofs skin?
7. Which type of tissue is included in the integument?
 - a. Adipose
 - b. Areolar
 - c. Muscle
 - d. Nervous
 - e. Stratified Squamous
8. What do Langerhans cells do?
9. What do Merkel (Tactile) cells do?
10. What do free nerve endings do?
11. What do melanocytes do?
12. Which layer of the epidermis do you see?

Answers

The Integumentary system does not absorb water.



4. The layer of the epidermis that is found in thick skin is called stratum lucidum.



Melanocytes create pigment.

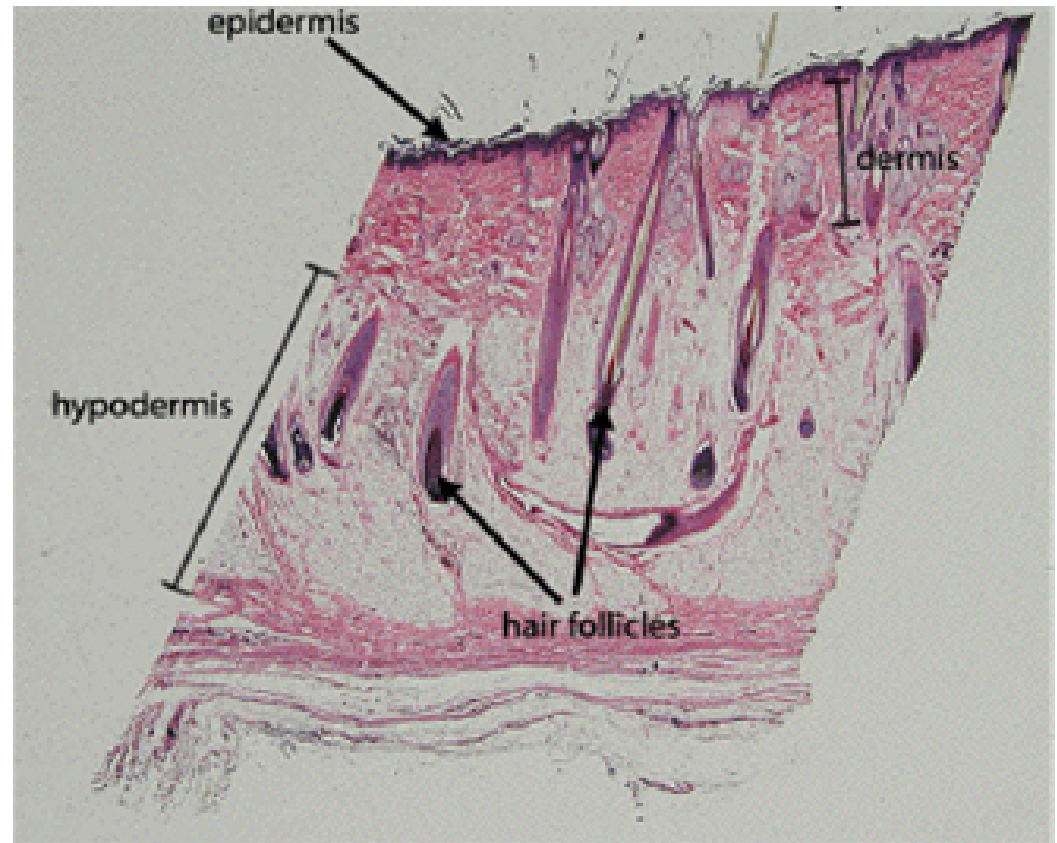


Hair

- Hair is found on all body parts except the palms, soles, lips, nipples and portions of the external reproductive organs.
 - Most Hair is fine and downy
- Hirsutism: a condition characterized by excessive body and facial hair in women

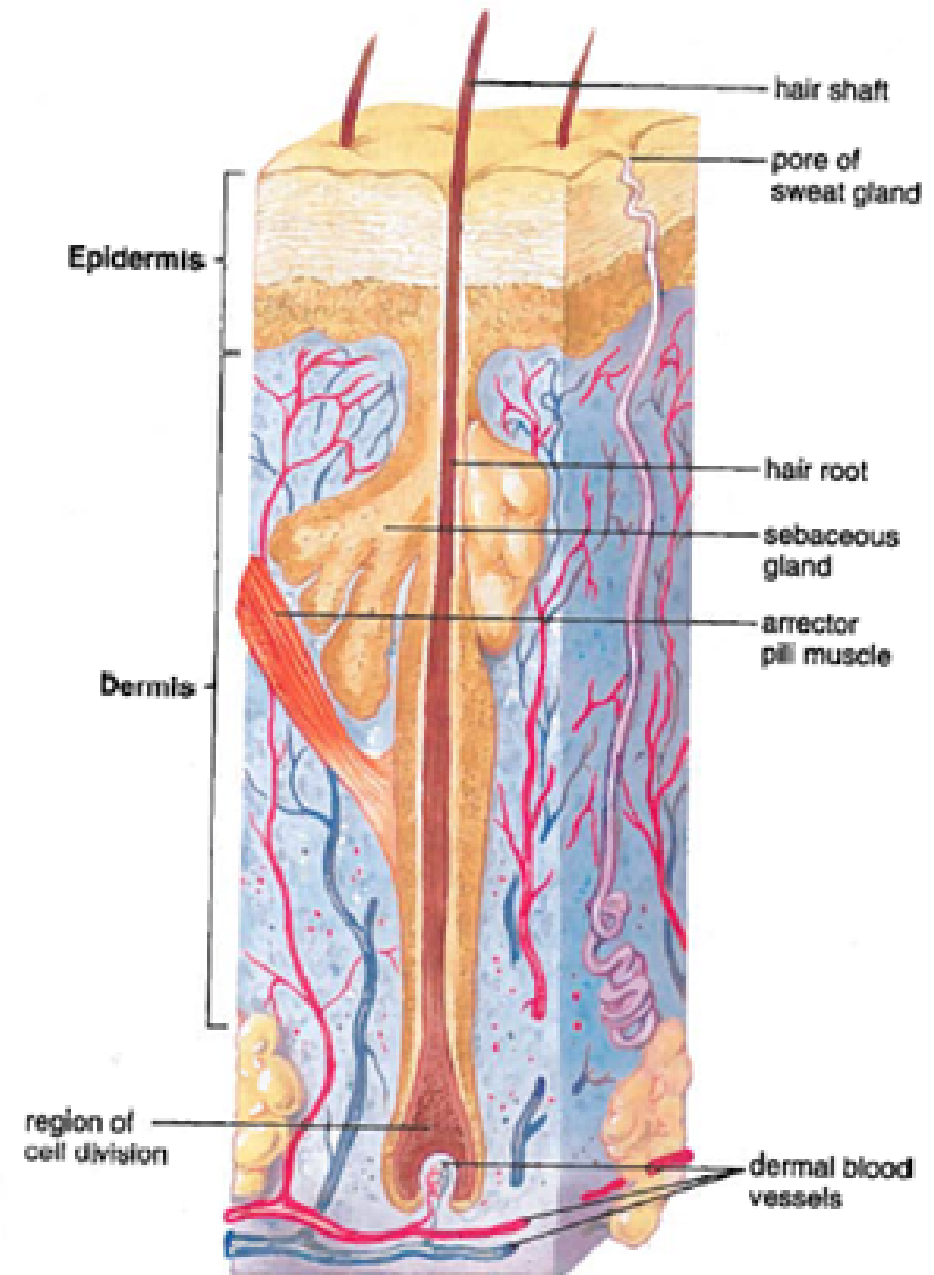
Hair

- Hairs project from hair follicles formed from epidermal cells but located in the dermis
- Hair follicle cells continually divide producing new cells from that form a hair
- Hair within follicle is called root and the portion that extends beyond the skin is called the shaft



Hair Cont.

- At first, the cells are nourished by dermal blood vessels but as hair grows up and out they are pushed farther away from the source of nutrients, become keratinized and die
- lifespan is three to four months for an eyelash
- lifespan is three to four years for scalp hair
- Alopecia; hair loss



a. Hair follicle

Hair Cont.

- Each hair has one or more oil, or sebaceous glands whose ducts empty into the follicle (more later)



Hair Cont.

- Arrector pili; smooth muscle "goosebumps"
- Whats the point of goosebumps?



Nails

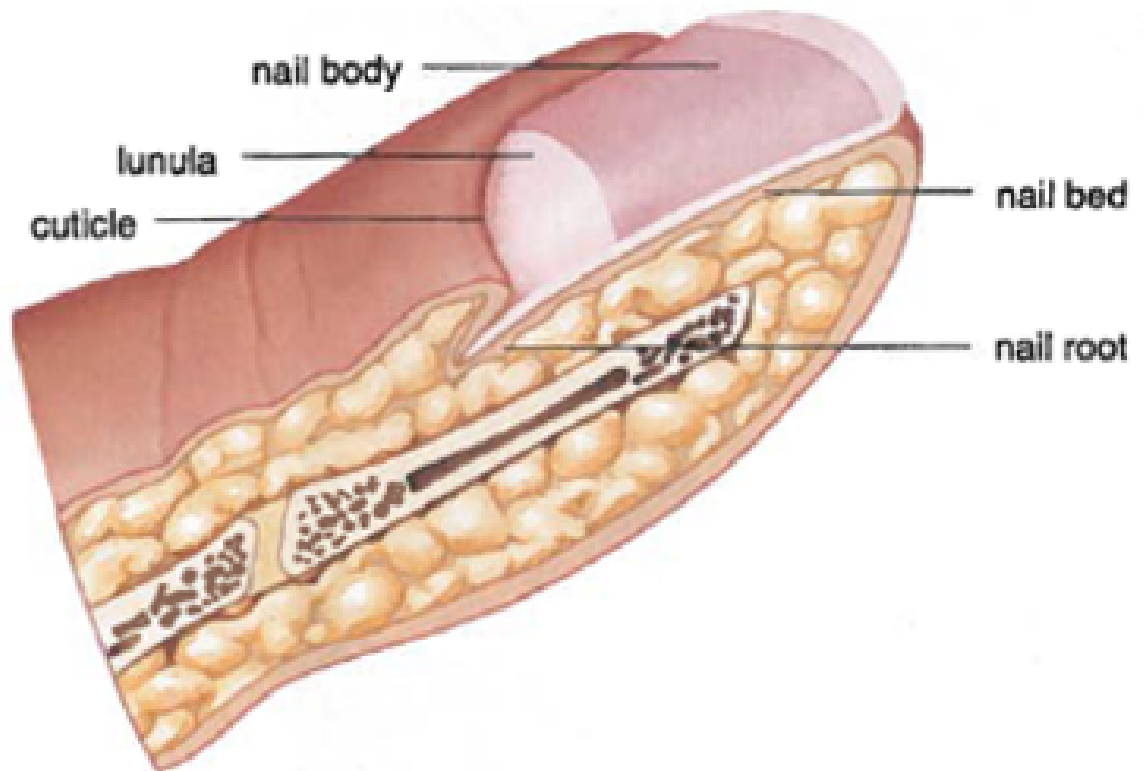
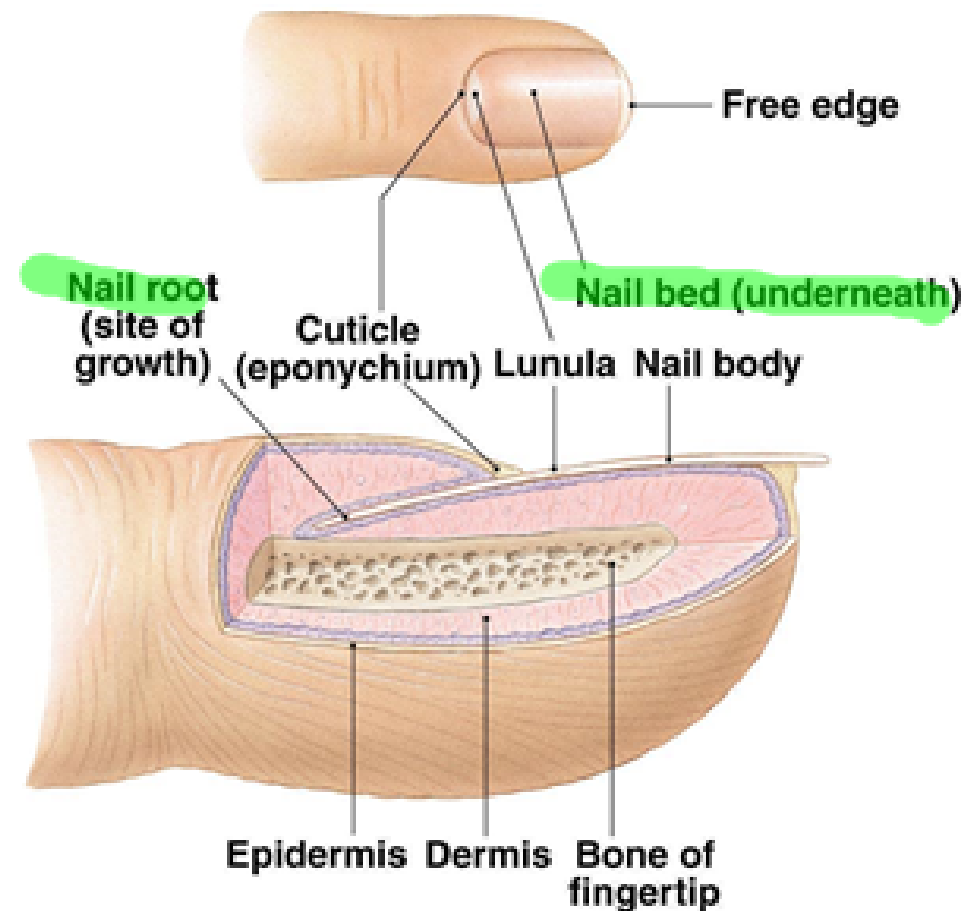


Figure 5.3 Sagittal section of a nail. Cells produced by the nail root become keratinized, forming the nail body.

Nails

- grow from epithelial cells at the base of the nail in the region called the nail root

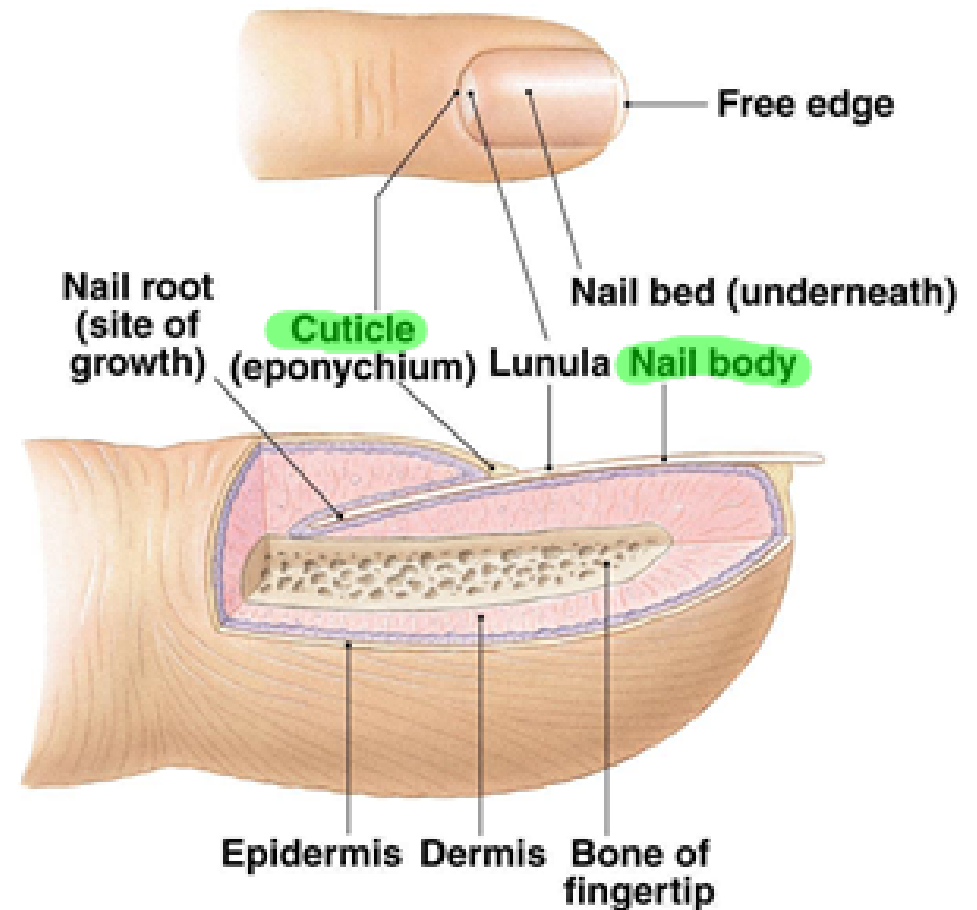
- cells become keratinized as they grow over the nail bed



Nails

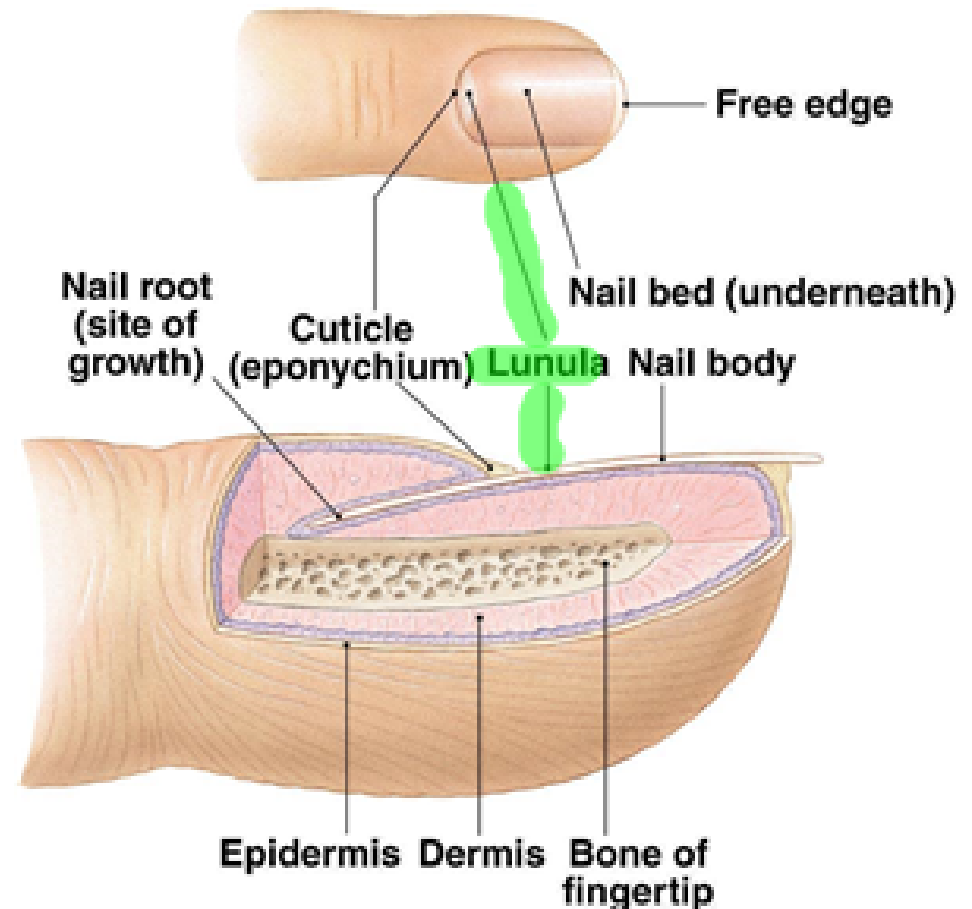
- visible portion is called the nail body

- cuticles are folds of skin that hide the nail root



Nails cont.

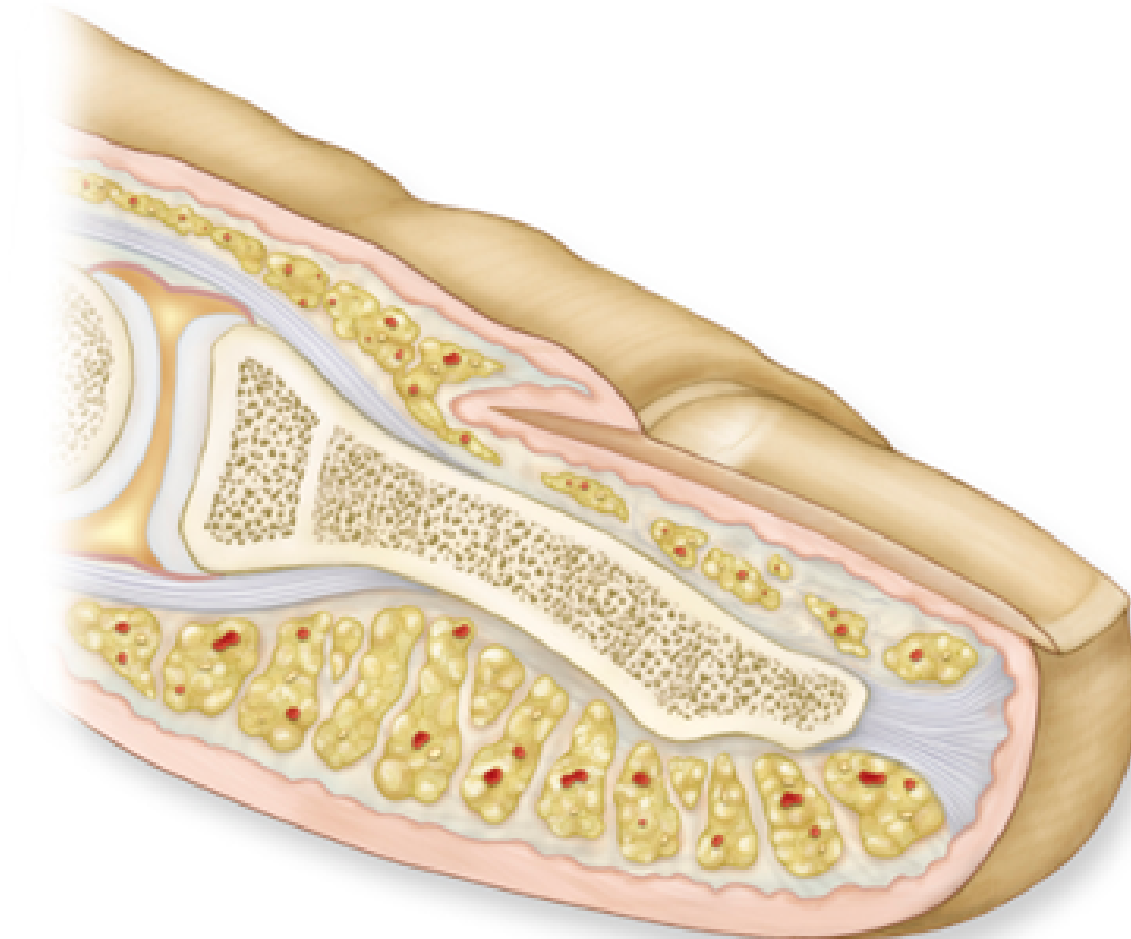
- grow 1 mm / week
- pink color is attributed to the vascular tissue beneath the nail
- lunula; whitish half moon, thicker rapidly producing cells



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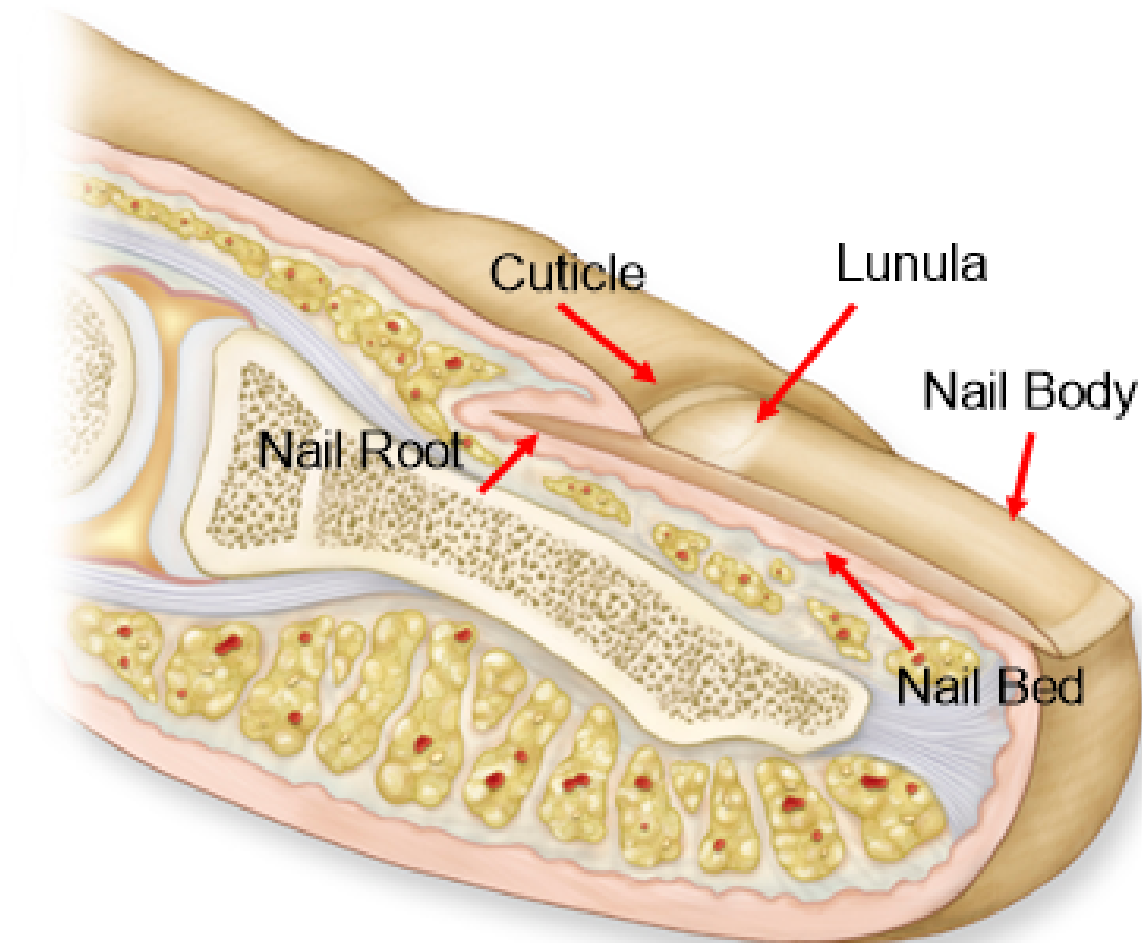
Label the Following on your Diagram: Nail Body, Lanula, Cuticle, Nail Root and Nail Bed

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Label the Following on your Diagram: Nail Body, Lunula, Cuticle, Nail Root and Nail Bed

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Discovery
EDUCATION

Glands

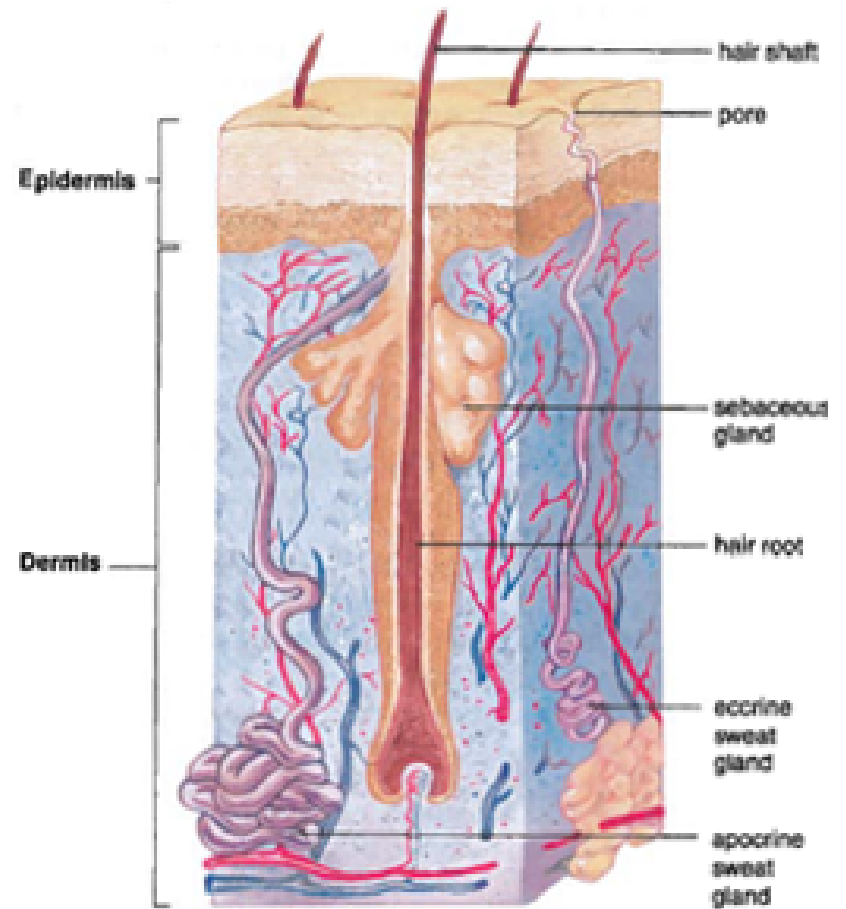
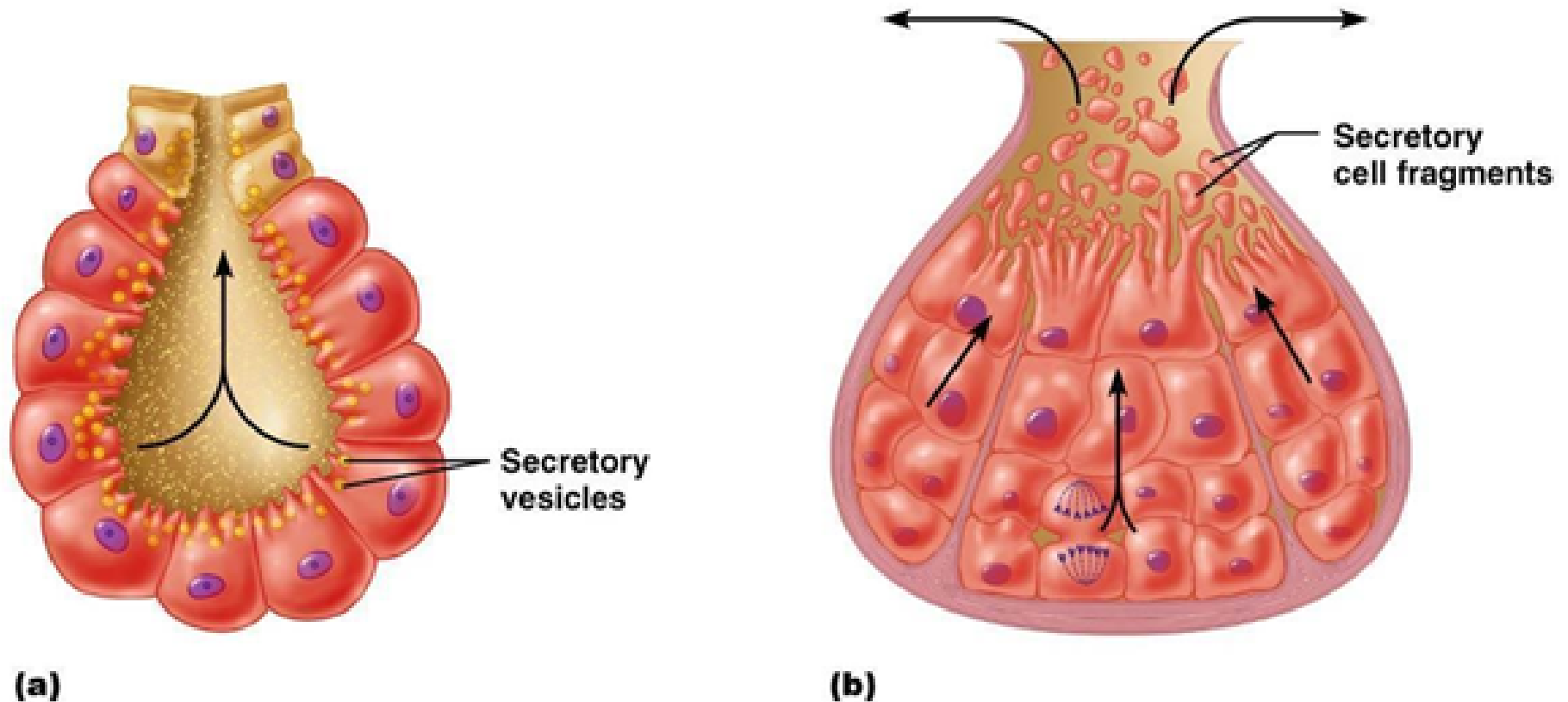


Figure 5.4 Types of skin glands. Apocrine glands and eccrine glands are types of sweat glands.

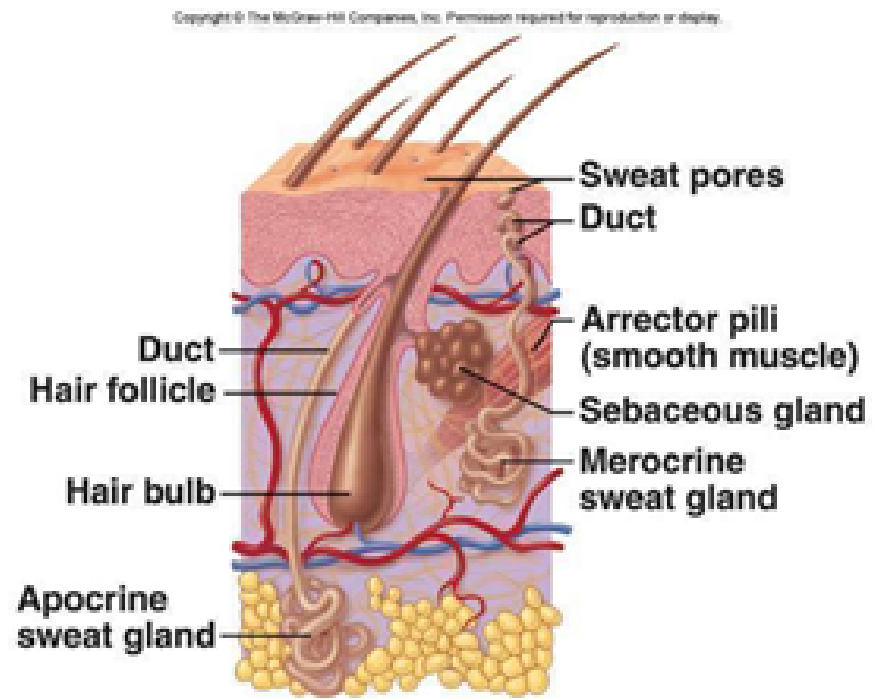
Glands

- groups of cells specialized to produce and secrete a substance into ducts



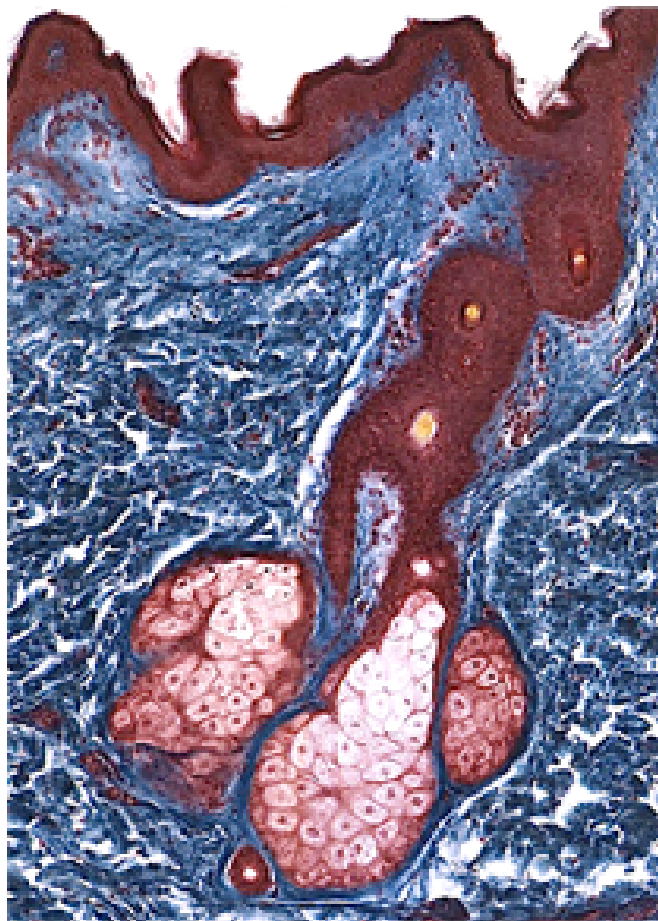
Glands (Sweat)

- Sweat Glands - present in all regions of skin, tubular and coiled, and become active under stress
- There can be as many as 90 glands per square centimeter on the leg, 400 per square centimeter on the palms and soles and even more on the fingertips
- Sweat glands are tubular and coiled at its origin in the dermis. Under stress, they become active

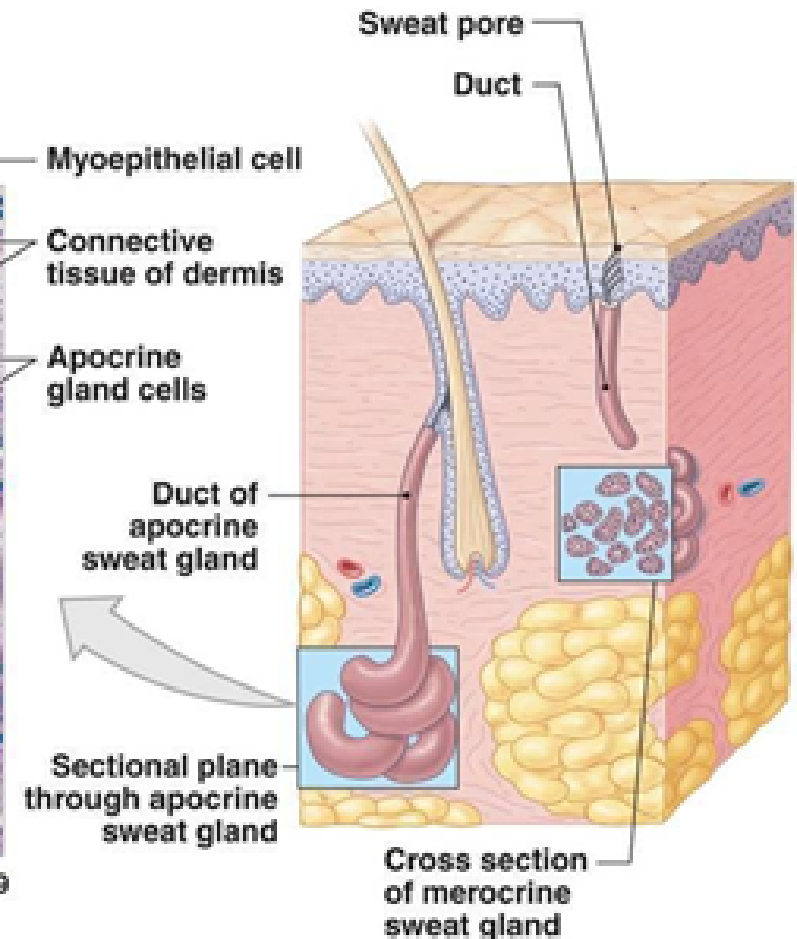


Glands (Sweat)

- Apocrine sweat glands; open into hair fillicles in the anal region, groin and armpits, begin to secrete at puberty and may act as a sex attractant (exocytosis)

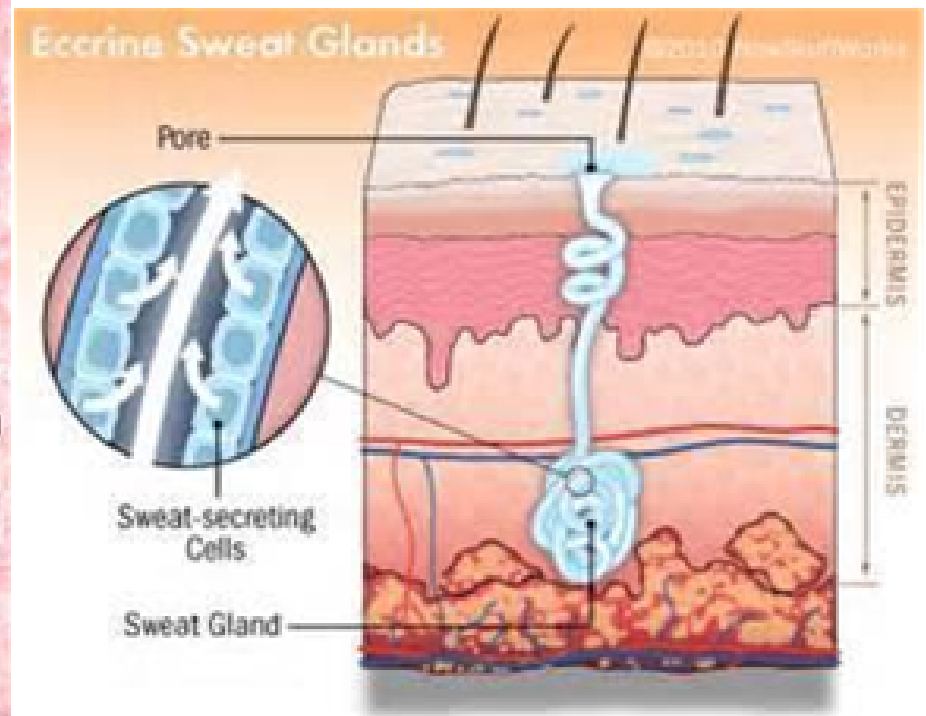
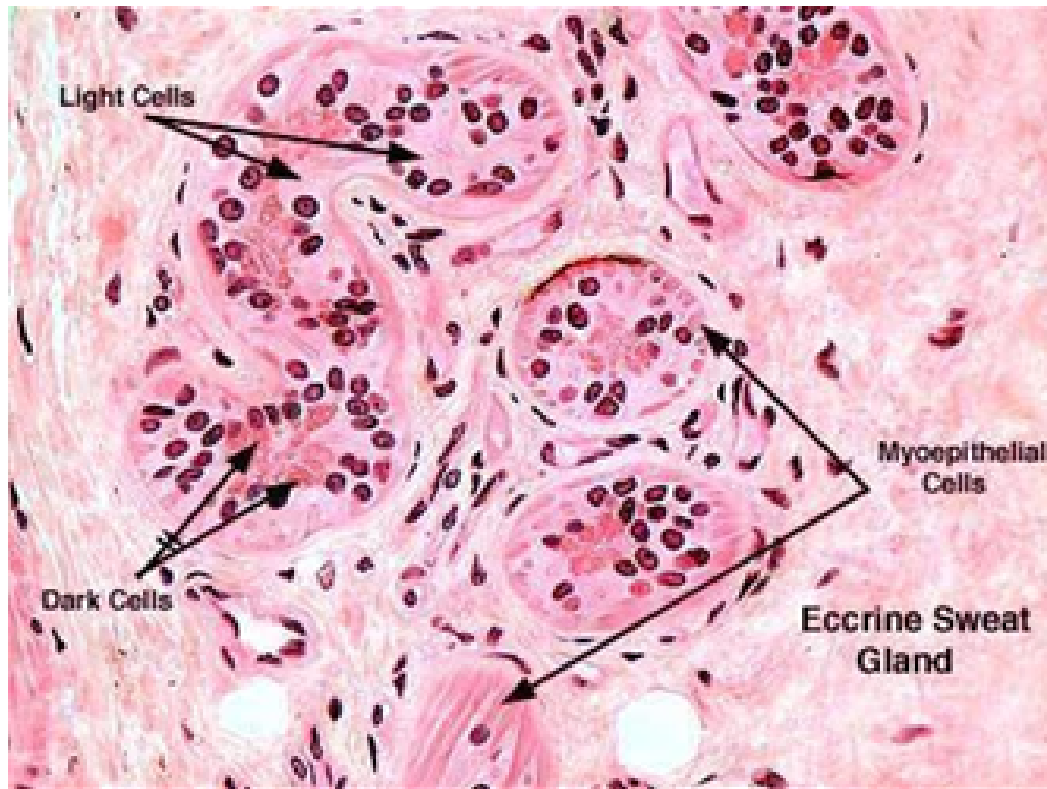


(a) Apocrine sweat gland LM × 459



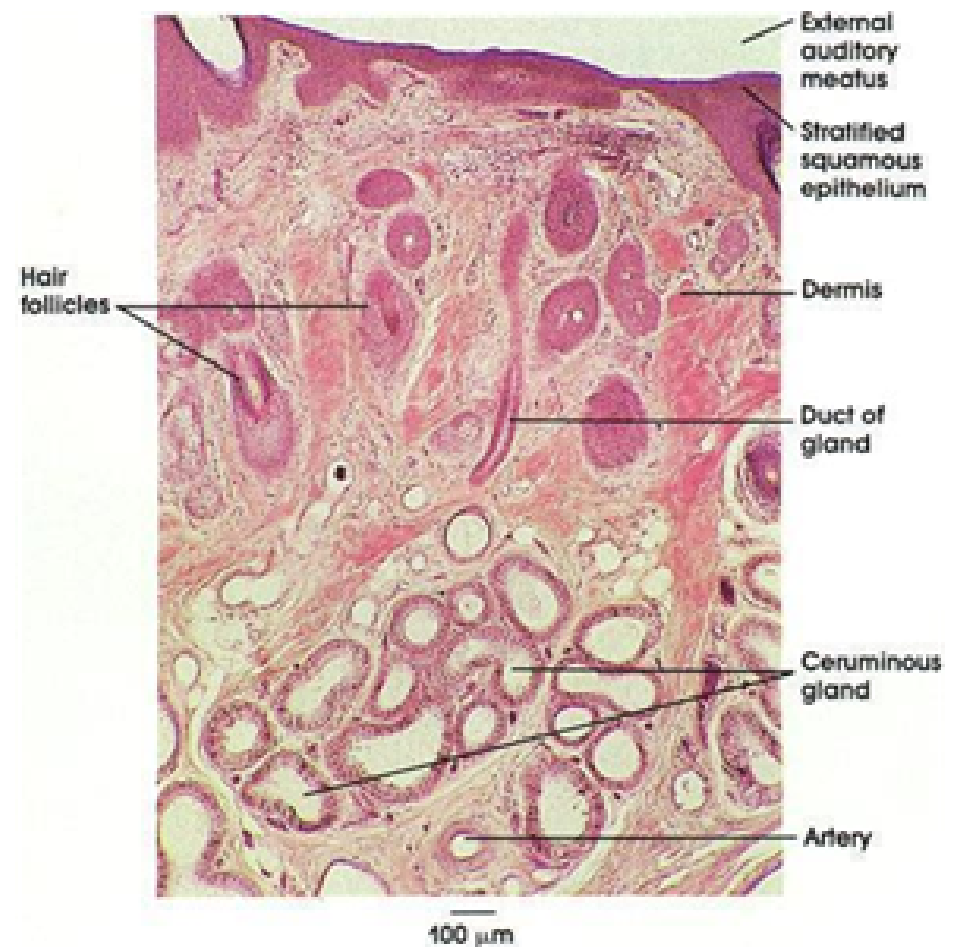
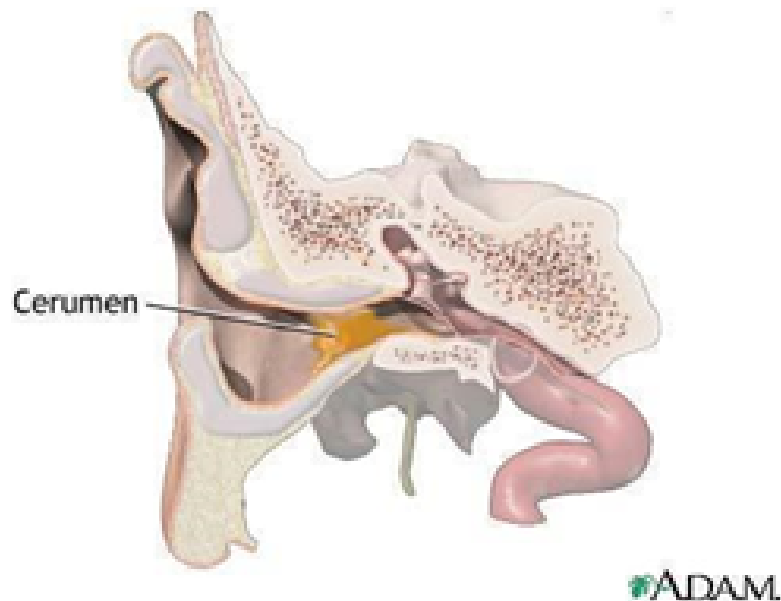
Glands (Sweat)

- Eccrine sweat glands; open onto the surface of skin, active when a person is hot, sweat is mostly water, but also salt and urea (exocytosis)



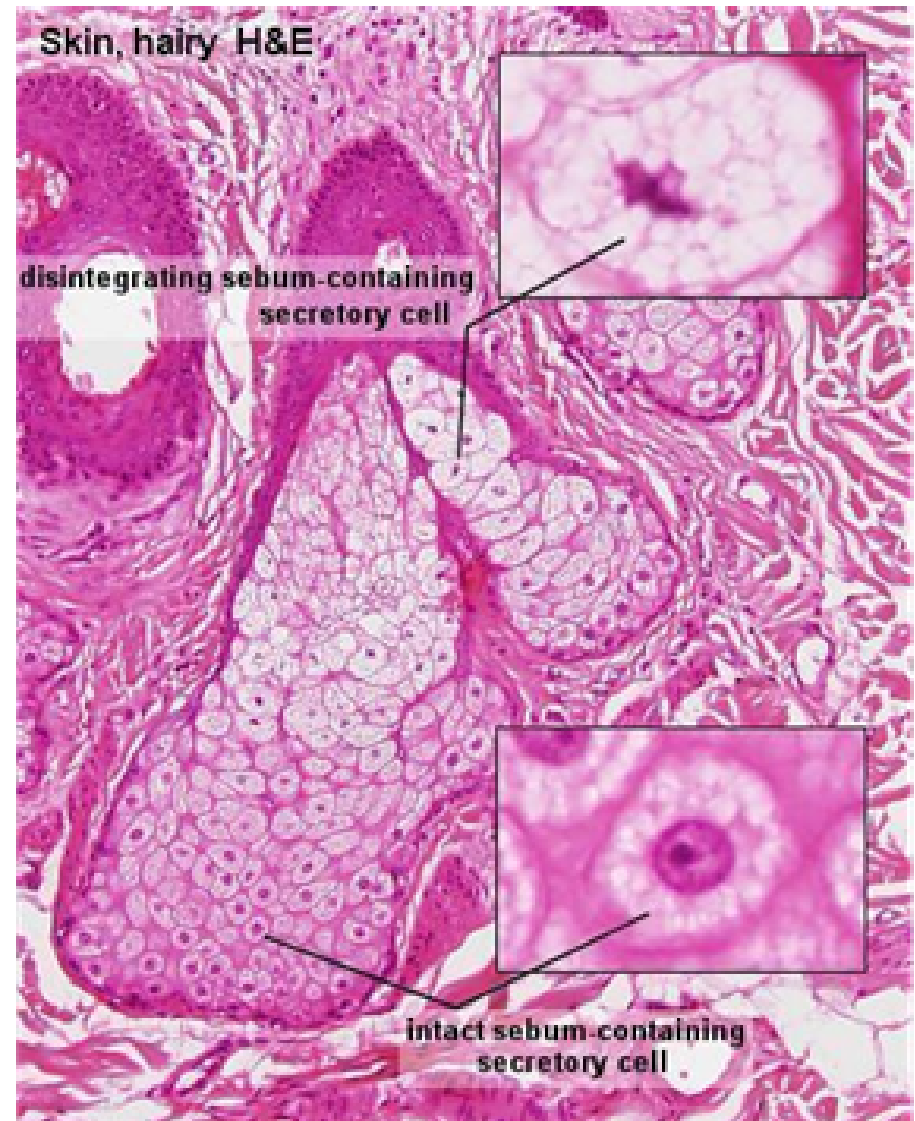
Glands (Sweat)

- Ceruminous glands; modified sweat glands located in the opening into the ear produce cerumen (earwax)

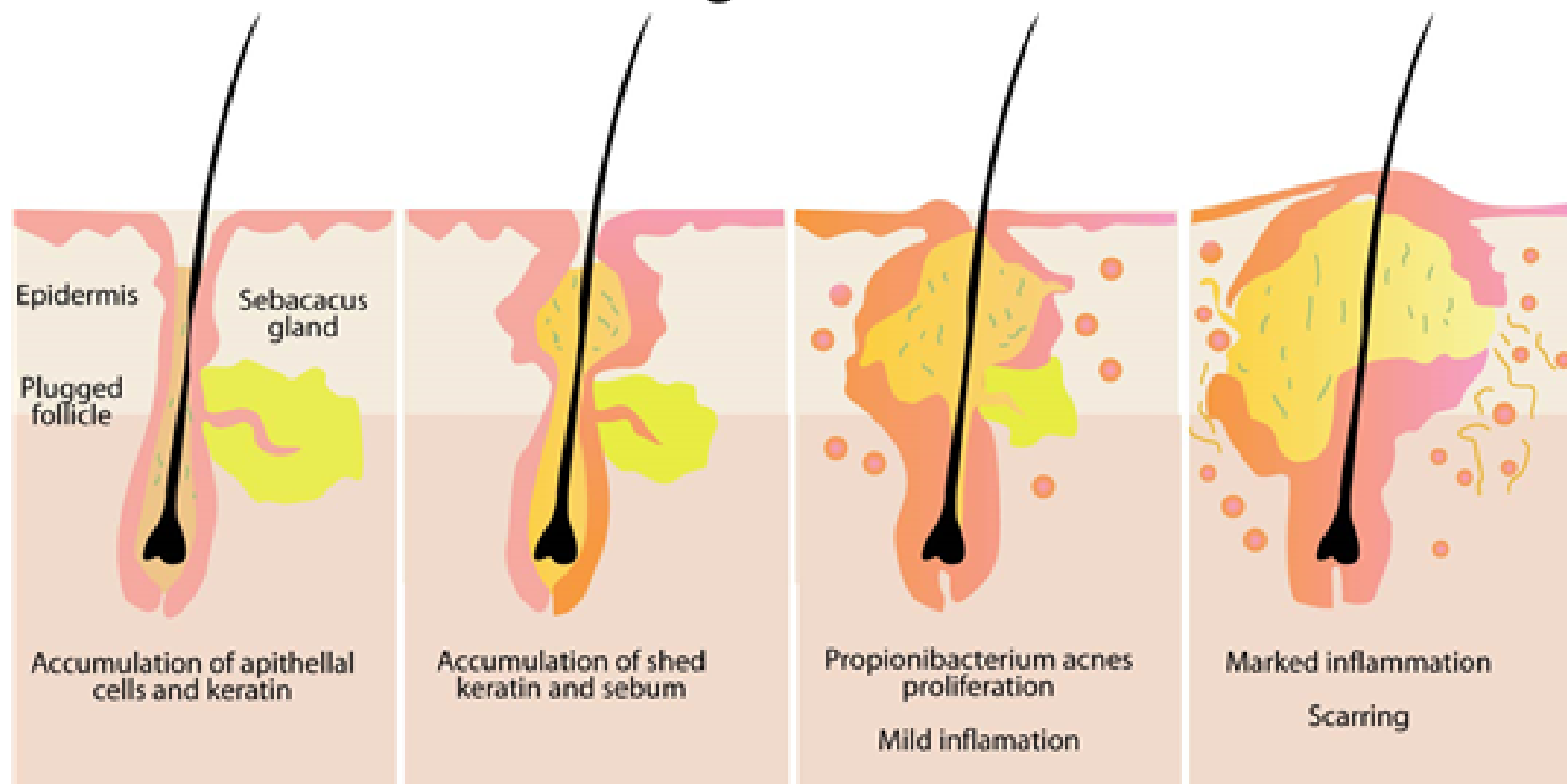


Glands cont.

- Sebaceous glands; associated with hair follicles and secrete oily substance called sebum that lubricates hair and skin and helps waterproof them, it also kills bacteria on skin's surface.



- Particularly on the face and back, the sebaceous glands may fail to discharge sebum and the secretions collect, forming whiteheads or blackheads. If pus-inducing bacteria are also present, a boil or pimple may result. Acne Vulgaris; most common form of acne, inflammation of sebaceous glands that occurs from hormonal changes in adolescence

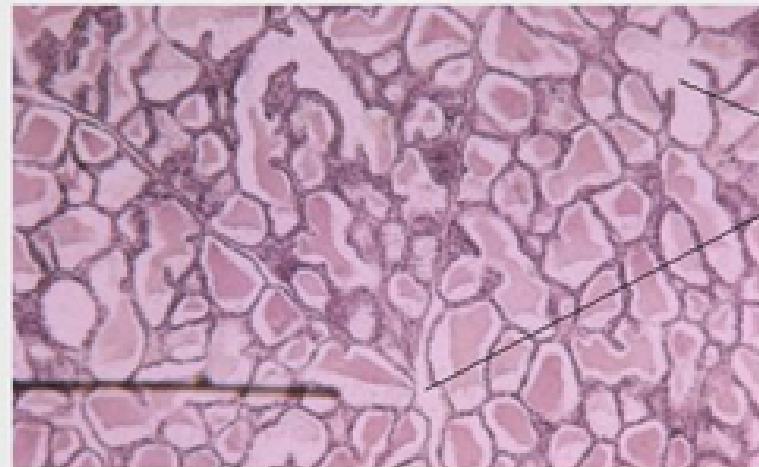


Glands cont.

- Mammary glands; modified sweat glands that produce milk after childbirth



Lactating Mammary Gland



Connected alveoli and ducts differentiate the mammary gland from the thyroid.

