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✪ Accessory Organs of the Skin

A. **Nails** = protective coverings over the ends of fingers and toes.

1. Nails are produced by the division of epidermal cells as a result of keratinization.
 - Nails grow about 1mm per week.
 - The thumbnail grows slowest; the middle nail grows the fastest.

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3. Nail Structures

Nail root: the region at the base of the nail, where the nail develops from special epithelial cells.

Nail body: the visible portion of the nail

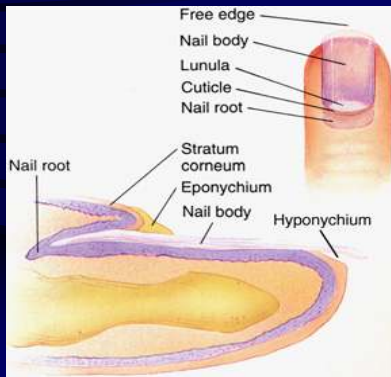
Nail bed: the area lying underneath the nail body

Cuticle: a fold of skin that hides the nail root

Lunula: the whitish color of the half-moon-shaped base; thicker area of germinal layer where epidermal cells divide.

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Nail Structure



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B. **HAIR** can be found in all regions of the skin, except the palms, soles, lips, nipples, and portions of the external reproductive organs.

1. Hair is produced by the division of epidermal cells and consist of keratinized cells
2. The life span for an eyelash is usually 3-4 months and 3-4 years for a scalp hair.

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3. Hair Structures

1. **Hair follicle:** tubelike depression in the skin in which a hair develops; formed from epidermal cells but located in the dermis.
2. **Hair root:** the portion of a hair within the follicle.
3. **Hair shaft:** the portion a hair that extends beyond the skin; consists of dead cells.

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4. **Arrector pili**: a smooth muscle that attaches to the follicle and causes the hair to "stand" and develop "goose bumps" when it contracts.

5. Hair color is determined by genetics; **melanin** from melanocytes is responsible for most hair colors.

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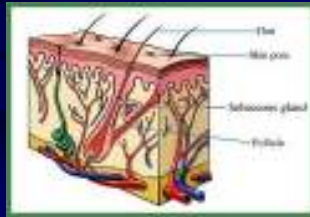
9. Hair Disorders

- **Hirsutism**: a condition characterized by excessive body and facial hair.
- **Alopecia**: hair loss
 - 1) **Androgenic alopecia**: an inherited condition
 - 2) **Alopecia areata**: the sudden onset of patchy hair loss.

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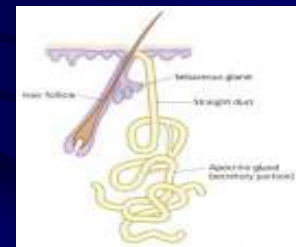
C. Types of glands

1. **Sebaceous glands** (oil glands) are exocrine glands that are associated with hair follicles and secrete oily secretion called sebum, which waterproofs and moisturizes the hair shafts and skin.



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2. **Sudoriferous glands** (sweat glands) are exocrine glands that are widespread in the skin and secrete sweat, which is mostly water with small amounts of salts and wastes, such as urea and uric acid.



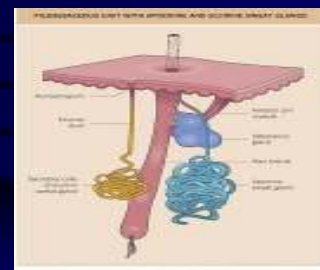
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Two types of sudoriferous glands:

- 1) **eccrine**= the most numerous glands that connect to pores and respond to body temperature (common on forehead, neck and back)
- 2) **apocrine**= open into hair follicles and respond to stress and sexual arousal (become active at puberty and found in anal region, groin and armpits).

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Apocrine vs. Eccrine Glands



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3. Ceruminous glands are modified sweat glands that secrete earwax in the ear canal.
4. Mammary glands are modified sweat glands that secrete milk in the breasts in response to pituitary and sex hormones.