

Lecture:11
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Assessment of Integumentary Function

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Anatomic and Physiologic Overview

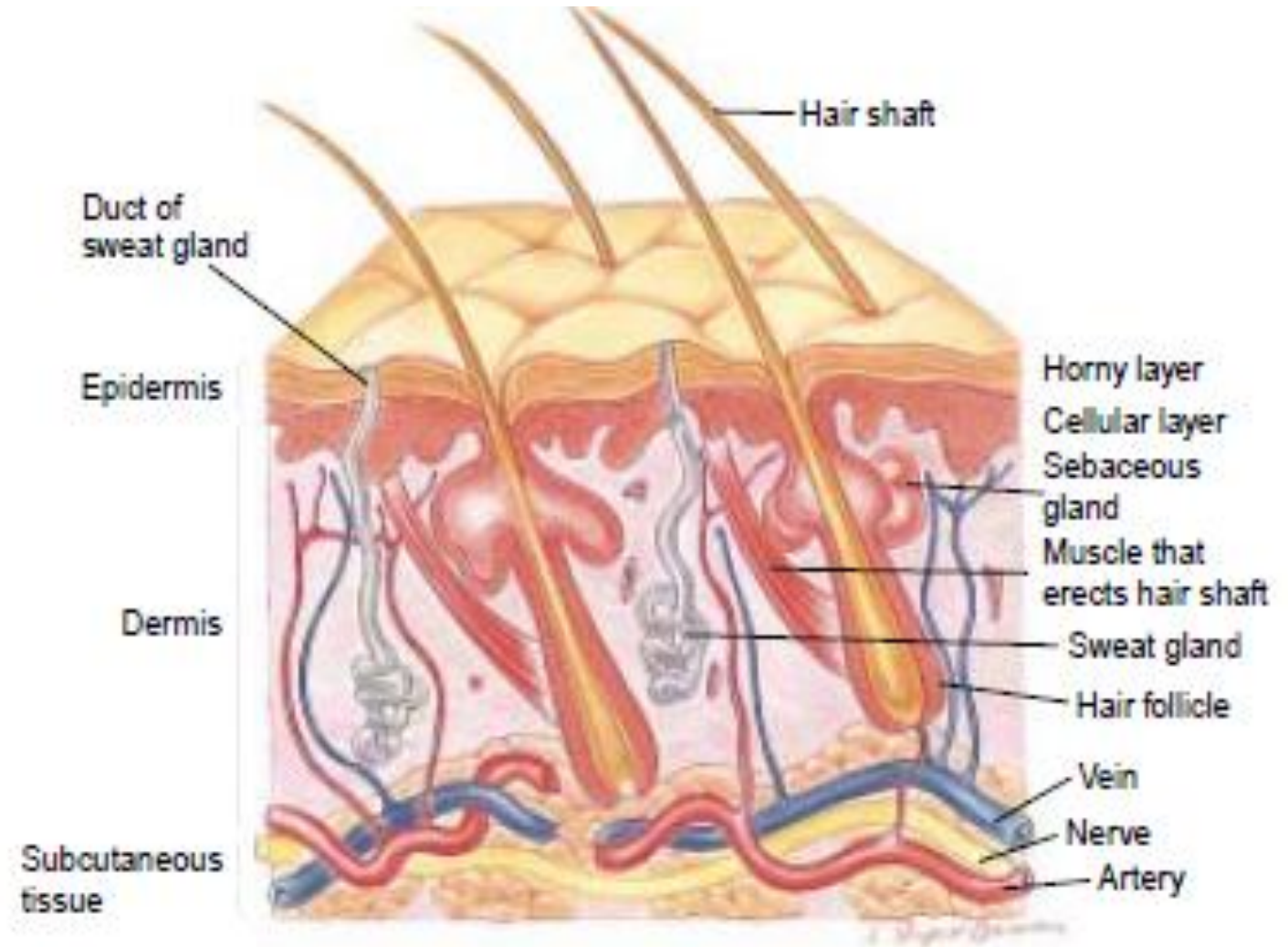
Integumentary system

- The largest organ system of the body.
- Skin forms a barrier between the internal organs and the external environment .
- The skin is contiguous with the mucous membrane at the external openings of the digestive, respiratory, and urogenital systems.

ANATOMY OF THE SKIN

The skin is composed of three layers

- Epidermis.
- Dermis.
- Subcutaneous Tissue



Epidermis

○ is an outermost layer of stratified epithelial cells contiguous with the mucous membranes and the lining of the ear canals.

- Four distinct layers

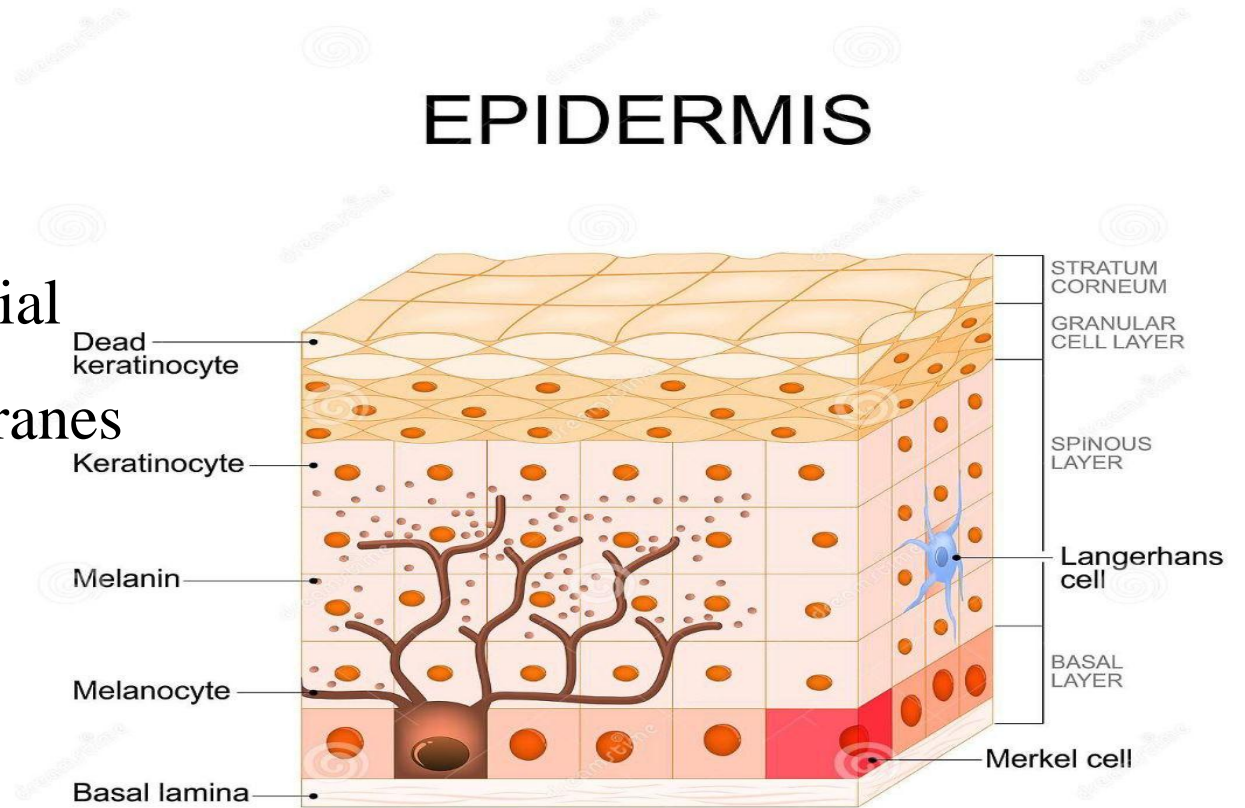
- **stratum germinativum,**

- **stratum granulosum,**

- **stratum lucidum,**

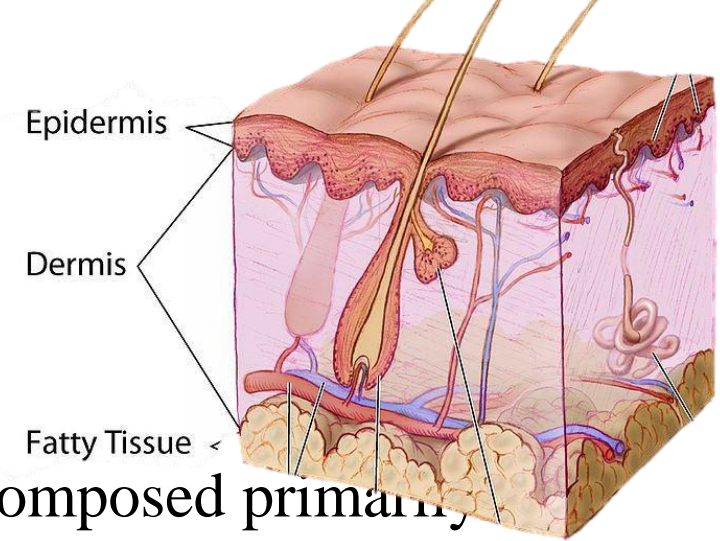
- **stratum corneum**

- Including keratin, Melanocytes , Merkel cells Langerhans cells



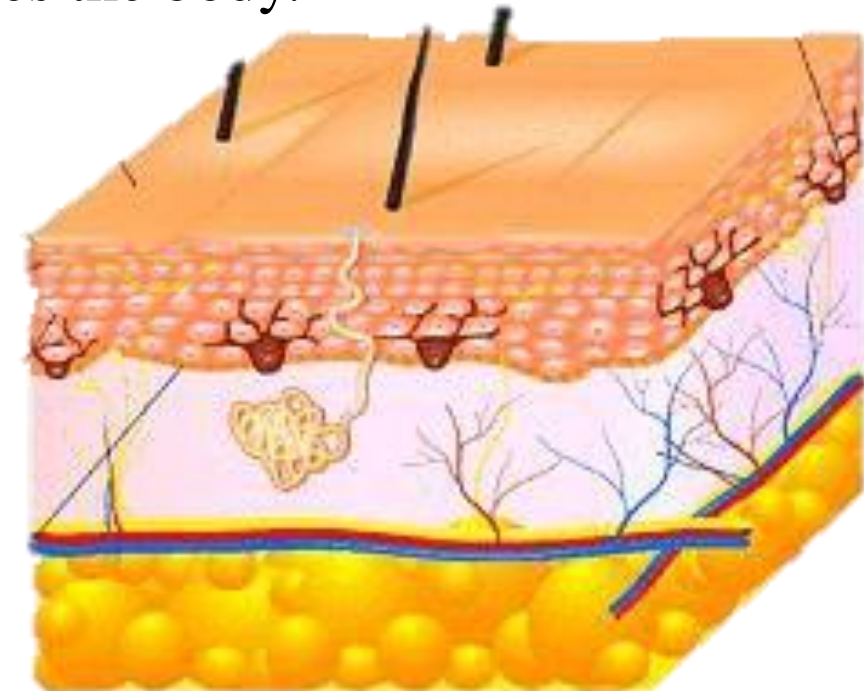
Dermis

- largest portion of the skin, providing strength and structure.
- **The papillary dermis** lies directly beneath the epidermis and is composed primarily of fibroblast cells capable of producing one form of collagen, a component of connective tissue.
- **The reticular layer** lies beneath the papillary layer and also produces collagen and elastic bundles.
- The dermis is also made up of blood and lymph vessels, nerves, sweat and sebaceous glands, and hair roots.
- The dermis is often referred to as the “true skin.”



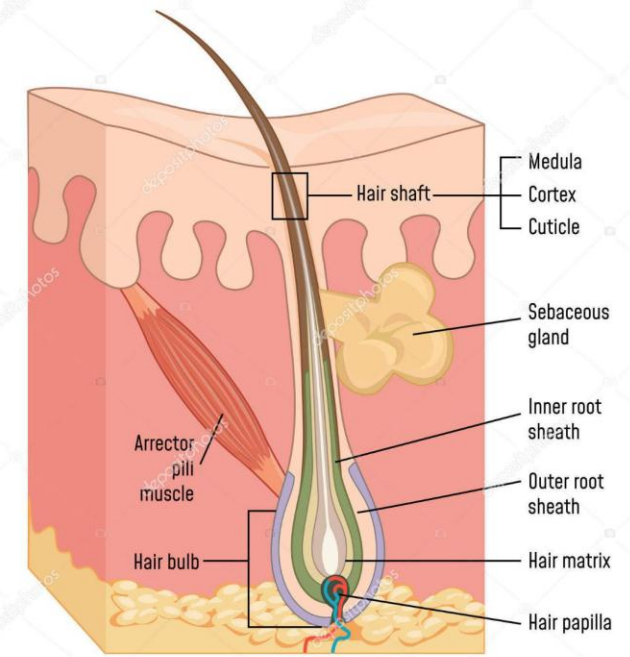
Subcutaneous Tissue

- The subcutaneous tissue, or hypodermis, is the innermost layer of the skin.
- It is primarily adipose tissue, which provides a cushion between the skin layers, muscles, and bones.
- It promotes skin mobility, molds body contours, and insulates the body.
- The subcutaneous tissues and amount of fat deposited are important factors in body temperature regulation.



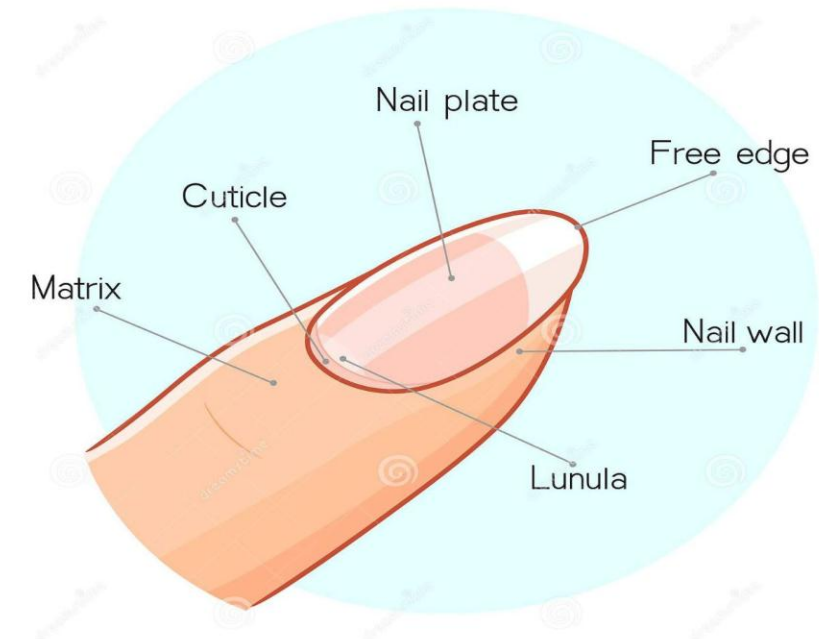
Hair

- hair is present over the entire body except for the **palms and soles**.
- The hair consists of a **hair follicle, root and a hair shaft**
- In certain locations on the body growth is controlled by **sex hormones**.
- The hairs of the eyes (ie, eyebrows and lashes), nose, and ears **filter out dust, bugs, and airborne debris**.
- Hair color is supplied by various amounts of melanin within the hair shaft. **Gray or white hair reflects the loss of pigment**



Nails

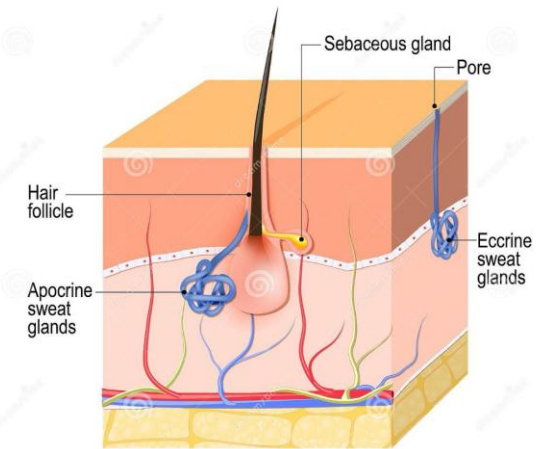
- a hard, transparent plate of keratin.
- The nail grows from its root, which lies under a thin fold of skin called the cuticle.
- The nail protects the fingers and toes by preserving their highly developed sensory functions, such as for picking up small objects.



Glands of the Skin

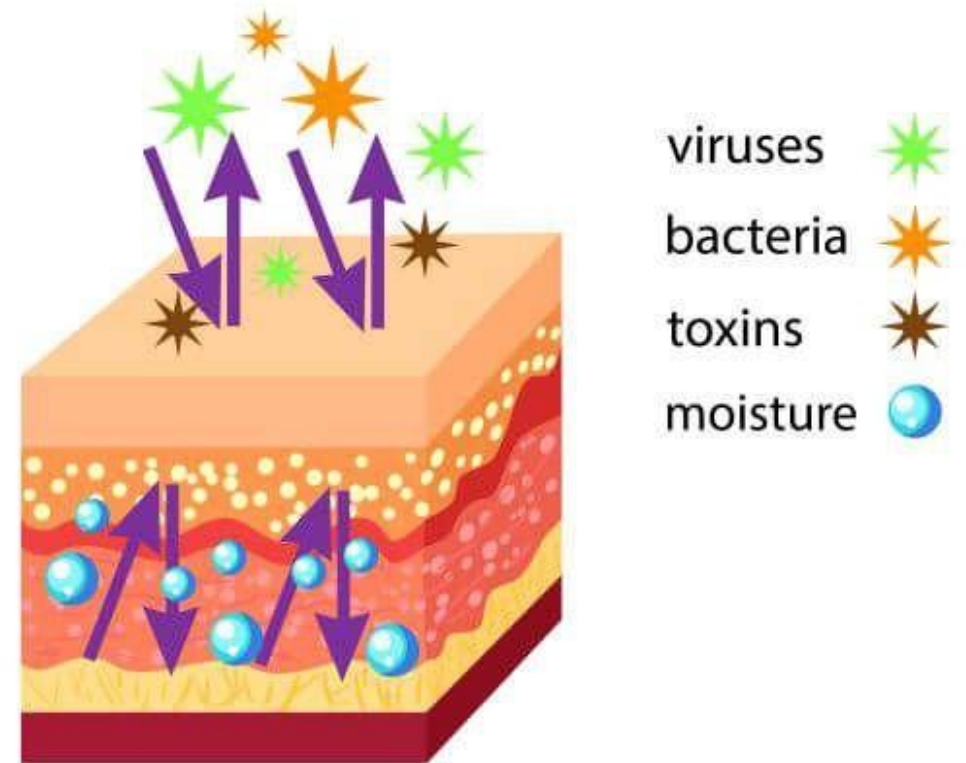
- There are two types of skin glands
- **sebaceous glands** are associated with hair follicles.
- empty sebum (ie, oily secretion) onto the space between the hair follicle and the hair shaft.
- **Sweat glands** are found in the skin over most of the body surface.
- concentrated in the palms of the hands and soles of the feet.
- ❖ **eccrine sweat glands** are found in all areas of the skin. Their ducts open directly onto the skin surface.
- ❖ The **apocrine sweat glands** are larger their secretion contains parts of the secretory cells. They are located in the axillae, anal region, scrotum, and labia majora. Their ducts generally open onto hair follicles.

Sweat and sebaceous glands



FUNCTIONS OF THE SKIN

- Protection
- Sensation
- Fluid Balance
- Temperature Regulation
- Vitamin Production
- Immune Response Function



Normal skin
barrier function

Assessment

Health History and Clinical Manifestations

- **Patient History of Skin Disorders**
- asking the following questions:
- When did you first notice this skin problem?
- Has it occurred previously?
- Are there any other symptoms?
- What did the rash or lesion look like when it first appeared?
- Who in your family has skin problems or rashes?
- What medications , skin products or cosmetics are you taking?
- What is your occupation?

PHYSICAL ASSESSMENT

- Assessment of the skin including the **mucous membranes, scalp, hair, and nails.**
- **Inspection and palpation** are techniques commonly used in examining
- The room must be well lighted and warm.
- A penlight may be used to highlight lesions.
- The patient completely disrobes and is adequately draped.
- Gloves are worn during skin examination if rash or lesions are to be palpated.
- Touching skin lesions indicates a level of acceptance of the patient.

Assessing General Appearance

- observing color, temperature, moisture or dryness, skin texture (rough or smooth), lesions, vascularity, mobility, and the condition of the hair and nails.
- Skin turgor, possible edema, and elasticity are assessed by palpation.



Assessing Skin Lesions

- **Primary lesions**
- **Secondary lesions.**
- Assess Lesions color and shape and palpated to determine their texture, shape, and border
- A **metric ruler** is used to measure the size of the lesions
- Pattern of eruption (eg, macular, papular, scaling, oozing, discrete, confluent)
- Distribution of the lesion (eg, bilateral, symmetric, linear, circular)



Assessing Vasculature and Hydration

- vascular changes in the skin is performed. includes location, distribution, color, size, and the presence of pulsations.
- Common vascular changes include petechiae, ecchymoses,
- Skin moisture, temperature, and texture are assessed primarily by palpation

Assessing the Nails and Hair

- Configuration, Color, And Consistency
- Beau's Lines
- Clubbing

Hair

- The Nurse Assesses Color, Texture,
- Distribution.
- Hair Loss
- Any abnormal lesions, evidence of itching, inflammation, scaling, are documented.

Diagnostic Evaluation

- Skin Biopsy
- Immunofluorescence
- Patch Testing
- Skin Scrapings
- Tzanck Smear
- Wood's Light Examination
- Clinical Photographs



Lefkoi Lykoi