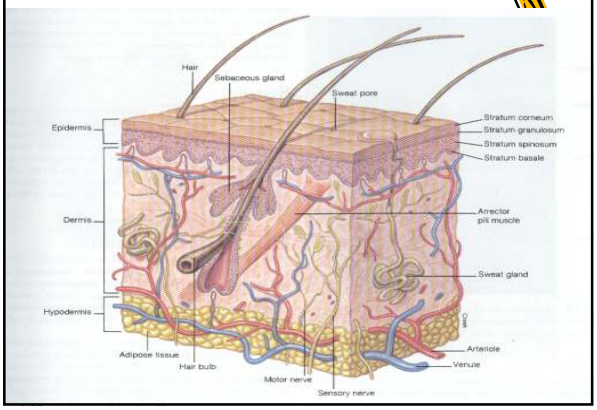
Integumentary System

Skin

- Largest single organ bordering the body and outside world.
- In such a strategic position, it carries out many functions.
- It is composed of two main layers: the epidermis of the ectodermal origin and the dermis of mesodermal origin.
- It rests on connective tissue layer

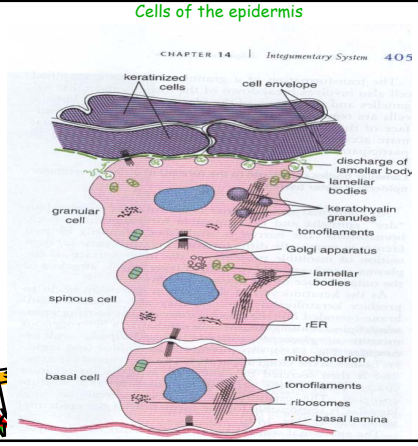
Overview of the skin



Epidermis

- This is the stratified squamous epithelium with thickness depending on the part of the body.
- In the thick skin the following layers from within outward, can be distinguished.
  - Malpighian layer
    - Basal layer
    - Spiny layer
  - Granular layer
  - Clear layer, and
  - horny layer

Cells of the epidermis



Dermis

- Consists of two layers of collagenous and elastic fibers which are:
- Papillary layer contains: (1) hairs and hair follicles (2) Sebaceous glands (3) sweat glands (4) blood vessels, and (5) nerves.
- Reticular Layer: A layer composed of coarse fibers than the papillary layer. The fibers interlace with each other to form a network. It merges with the subcutaneous tissue.

Subcutaneous Tissue

- As the name implies, this layer is not a part of the skin proper. It serves to attach the skin to the deep fascia, muscles, and bones.
- It consists of widely separated bundles of fibroelastic tissue and masses of fat cells which occupy the spaces between them.

Pigmentation

- The color of the human skin depends chiefly on the presence of pigments. The human skin contains four different types of pigments:
  - melanin
  - oxyhemoglobin
  - reduced hemoglobin, and
  - carotene.
- No additional pigments are found in the darkest races, the differences in color being due to the amount of various pigments.

Skin of the scrotum

- The skin of the scrotum has unique characteristics which merit special mention.
- It possesses all the characteristics of the skin; but, in addition, there are coarse scattered bundles of smooth muscles in the reticular layer of the dermis.
- While these scattered bundles of smooth muscles are charactereistics of scrotum, they are also found in the nipples, prepuce, glans penis and in the perianal region. The contraction of these muscle fibers gives the skin of these regions its wrinkled appearance.
- Especially rich in pigments are certain patches of skin such as the axillae, areolae, nipples, labia

Hair

- Hairs are elastic horny threads developed from the epidermis.
- They grow within narrow pits (hair follicles) in the dermis which may extend into the subcutaneous tissue.
- Each hair consists of shaft and a root which occupy the hair follicle.
- The lower end of the root expands into a knoblike structure, the hair bulb.

Glands of the Skin

Mamamary glands, Sebaceous glands and sweat galnds are all derived from the skin.

A. Sebaceous Glands

- Usually associated with a hair follicle.
- Simple and branched alveolar glands.
- They are sherical or ovoid in shape.
- Ducts usually empty obliquely into hair follicles.
- Each sheath is surrounded by a fibrous sheath.
- Secrete sebum which is antibacterial and antifungal in action

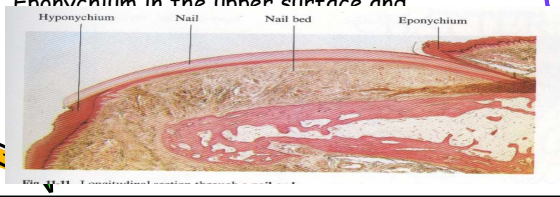
A.Sweat Glands

- They are found over the entire body surface, except in the eardrum, the nails, the lips, the inner surface of the prepuce, and the glans penis. They are the only glands found on palms of the hands and soles of the feet.
- Two types: apocrine (mostly in ampits and around genital) and eccrine, long, simple, coiled tubular glands.
- Eccrine glands secrete sweat which has a secretory and theomogulatory role. Apocrine gland secrete odorless antibacterial and pheromonic fluids.

Nails

Nails are modifications of the epidermis. It is made up of:

- Nail body(Nailplate) whish is an exposed portion or horny scales which are cornified epithelial cells.
- Nailbed, the skin under the nail.,
- Eponychium in the upper surface and



Histopathology
Tumors of the Skin

- Squamous carcinoma of the skin
- Malignant melanoma (melanosarcoma)