

# SKIN & FASCIAE

# *skin*

- The human *skin* is the outer covering of the body.
- In humans, it is the largest organ of the integumentary system.
- The integumentary system consists of the *skin*
- ( epidermis and dermis), sebaceous glands, hair, and nails.
- The skin has multiple layers of cells
- It a tissue of ectodermal origin.
- It guards the underlying structures like muscles, bones, ligaments and viscera

- Pigmentation of skin—
- Colour is determined by at least five pigments present ,these are—
- **Melanin**( brown in colour),present in germinative layer of epidermis
- **melanoid** ,resemble melanin ,diffusely present in epidermis.
- **Carotene**,yellow to orange in colour ,in stratum corneum and fat cells of dermis & sup.fascia.

- haemoglobin ( purple)
- oxyhaemoglobin(red) present in cutaneous vessels.
- Amount of these pigments vary with race,age & part of body,

Thickness of skin varies from 0.5 to 3mm

# Structure of skin

- two distinct layers—epidermis, dermis.
- Epidermis
- Superficial , avascular layer of stratified squamous epithelium.
- Ectodermal in origin
- Give rise to appendages---hair, nails, sweat glands, sebaceous glands.
- made of superficial cornified zone ---st

- Epidermis is made of stratum corneum, stratum lucidum, stratum granulosum...(cornified zone)
- germinative zone--- stratum spinosum, & stratum basale.
- str. Basale has got melanocytes ( neural crest )

- dermis / corium— deep vascular layer of skin, derived from mesoderm.
- Made of connective tissue with variable elastic fibers , mixed with blood vessels , lymphatics & nerves.
- Reticular layer is composed chiefly of white fibrous tissue arranged mostly in parallel bundles .
- direction of bundles constitute cleavage lines ( langer's lines)

- in old age elastic fibers atrophy and skin becomes wrinkled.
- over stretching of skin leads to rupture of fibers followed by scar formation,( linea gravidarum)
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# Functions of *skin*

- **protecting** the body against environmental factors like heat cold pathogens
- **Insulation,**
- **Temperature regulation,**
- **Sensation,**
- **Synthesis of vitamin D,.**
- **Control of evaporation:** the skin provides a relatively dry and semi-impermeable barrier to fluid loss. Loss of this function contributes to the massive fluid loss in burns.
- **Aesthetics and communication:** others see our skin and can assess our mood, physical state and attractiveness.
- **Storage and synthesis:** acts as a storage center for lipids and water,
- **Excretion:** sweat contains urea, regulation.
- **Absorption:** Medicine can be administered through the skin, by ointments or by means of adhesive patch, such as the nicotine patch

# FASCIAE

- A **fascia** (plural **fasciae** adjective **fascial**; from Latin: "band") is a layer of fibrous tissue.
- A fascia is a structure of connective tissue that surrounds muscles, groups of muscles, blood vessels, and nerves, binding some structures together, while permitting others to slide smoothly over each other.

- **Superficial fascia—general coating of body beneath skin**
- This is found in the subcutis in most regions of the body, blending with the reticular layer of the dermis.
- made of loose areolar tissue with varying amount of fat,
- distribution of fat---
- Abundant in gluteal region, flanks, anterior abdominal wall, mammary gland etc.
- Fat is absent from eyelids, external ear, penis, & scrotum
- subcutaneous layer of fat is called panniculus adiposus.
- Example -Fascia of Scarpa

- **superficial fascia is---**
- most distinct in lower part of anterior abdominal wall, perineum, limbs.
- very thin on dorsal aspect of hands & feet, sides of neck, face, around anus.
- very dense in scalp, palm and soles.
- **contains-** subcutaneous muscles of face, neck, scrotum,
- Mammary gland, lymph nodes groups.
- deeply situated sweat glands, cutaneous nerve & vessels,

# function

- it facilitates movements of skin
- serve as soft medium for passage of vessels & nerves to skin
- conserve body heat as fat is a bad conductor of heat.

- **Deep fascia(Fascia of muscles)**
- This is the dense fibrous connective tissue
- It surrounds the muscles, bones, nerves and blood vessels of the body.
- It is named after it's anatomical position
- It divides the various parts of body into compartments
- Example -Transversalis fascia,Cervical fascia

- deep fascia is best defined in limbs where it forms tough & tight sleeves , & in neck where it forms collar.
- its ill defined on trunk & face.
- extensions of deep fascia forms--- intermuscular septae, fibroaerolar sheaths of muscles, vessels & nerves.
- thickenings of it forms--- retinacula around wrist & ankle as retention joints around joints,

- deep fascia never crosses a subcutaneous bone , instead it blends with its periosteum .
- modifications—
- covers each muscle as epimysium,
- each nerve as epineurium,
- forms sheath around large arteries – carotid sheath
- modified to form capsule around joint , synovial membrane & bursae



- Form tendon sheaths / bursae.
- forms retinacula as thickened bands
- Forms apponeuroses in palm & soles which afford protection to underlying structures.
- modified to form interosseus membrane.
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# Fascial compartments

- The limbs can be divided into segments, such as the arm and the forearm of the upper limb, and the thigh and the leg of the lower limb.
- If these segments are cut transversely, it is apparent that they are divided into multiple sections.
- These are called **fascial compartments**, and are formed by tough connective tissue septa. Compartments usually have separate nerve and blood supplies from their neighbours.
- All the muscles within a compartment will generally be supplied by the same nerve.

# functions

- keeps underlying structures in position
- provide extra space for muscular attachments
- helps in venous & lymphatic return
- assist muscles in their action by degree of tension & pressure it exerts upon their surfaces
- retinaculae act as pulleys & serve to prevent loss of power.

