

The Skin

Is an extensive organ, covering the whole body, it have many functions:

- 1. Protection of internal organs.**
- 2. Maintain the homeostasis.**
- 3. Synthesis of vitamin D.**
- 4. Assist for defense mechanism against foreign bodies.**

The skin is composed of three layers:

- 1. Epidermis**
- 2. Dermis**
- 3. Hypodermis**

The skin is two types:

- 1. Thin skin**
- 2. Thick skin**

The accessories of the skin are:

- A. Nails**
- B. Hair**
- C. Horns**
- D. Hoofs**
- E. Sweat glands**
- F. Sebaceous glands**

Epidermis:

Is formed by stratified squamous epithelium cells which are three or five layers:

- a) Three layers in thin skin**
- b) Five layers in thick skin**

If the epithelium is three layers:

- i. Stratum basale: basal layer**
- ii. Stratum spinosum: spinal layer**
- iii. Stratum desquamatum: disqumal layer**

If the epithelium is five layers:

- i. Stratum basale
- ii. Stratum spinosum
- iii. Stratum granulosum: granular layer
- iv. Stratum lucidum: lucidal (glossy) layer
- v. Stratum corneum: corneal layer

Stratum basale: is composed of simple columnar-cuboidal cells resting on the basement membrane, these cells consider as germinal layer which have the ability to be divided to form new cells toward the spinal layer.

Stratum spinosum: is formed by squamous cells which are large cells associated together with minute spines and this layer is containing many rows of cells.

Stratum desquamatum: is formed by sloughed cells of squamous type, these are become sloughing continuously.

Stratum granulosum: is formed by two rows of cells of spindle shaped, its cytoplasm has many granules called Keratohyaline granules.

Stratum lucidum: is glassy layer or zone, its cells are usually degenerated, so there is no signs of cells outlines or its nuclei.

Stratum corneum: is a horney layer, formed by the presence of keratin, act for protection of skin.

The skin is usually formed by:

- Thin skin: of three layers
- Thick skin: of five layers

Dermis:

Is formed by dense C-T usually formed mainly by elastic fibers and wavey bundles of collagen fibers, associated with blood vessels, sensory nerves and glands, sweat glands and sebecous glands, numerous types of WBC also present.

Hypodermis:

Is the deepest layer of skin which have loose C-T, Adipose tissue, blood vessels and the root shaft off hair follicles, the hair follicle is formed by:

- A. Shaft
- B. Root
- C. Bulb

The hair follicle is consisting of:

- A. Outer cellular sheath
- B. Inner cellular sheath
- C. Medulla

All of the above are in the shaft, and these are surrounded by cuticle.

The root is composed of basal cells responsible for division of replacement of the outer and inner sheath cells of the shaft which are both called Cortex.

The bulb of hair is occupied by C-T, blood vessels and nerve sensory.

The hair follicle is usually associated with sebaceous glands which are sac-like lined by germinal cells, producing new cells filled with oil in the cytoplasm pushed up inside the sac and destroyed into sebum or oil pass through the sheath of hair to the surface of skin or scalp.

The hypodermis is containing sweat glands which are present independently from the hair follicles, and these glands are formed by two portions:

- a) Stratified portion which is the tubular and transport portion.
- b) Coiled or basal portion (secretory).

Both portions are lined by double rows of cuboidal cells.

In the hypodermis, there is a fatty tissue with blood vessels, this fat is a reservoir for certain animals for protection from cold conditions.