

Integumentary System

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What is the Integument?

- The INTEGUMENTARY SYSTEM includes all the structures and tissues related to the skin.
- This includes:
 1. skin
 - a. Epidermis
 - b. Dermis
 2. accessory organs
 - a. Hair
 - b. Nails
 - c. Glands

Function of the skin

- protects the body from tear and invasion by microorganisms
- play an important part in thermoregulation
- Impermeable to water and prevent the body from drying out .
- Certain lipid substances can penetrate and used as vehicles for administration the drug

- The skin covers the entire body and provides protection against injuries, infection, and toxic compounds.
- The system contains many nerve endings that act as RECEPTORS for pain, temperature, touch, and pressure.

Anatomy of the Skin

- Upper layer of skin is called EPIDERMIS
EPI- means on top of
DERMIS means skin
- The lower layer of skin is called the DERMIS.

The Epidermis

- Is multilayered.
- Contains is superficial layer of dead skin cells called STRATUM CORNEUM.
- The stratum corneum is composed of cells called KERATIN.
- Is AVASCULAR (no blood vessels)
- Has no nerve tissue (can't feel pain)

The Dermis

- Has two distinct layers:
 1. Papillary Layer (more superficial)
 2. Reticular Layer (deeper)
- Accessory organs begin the dermis.
- Some of the accessory organs end or cross into the epidermis.
- The dermis contains blood vessels and nerve tissue.

Subcutaneous Fat and Superficial Fascia

- The SubQ fat is found deep to the dermis.
- It contains the larger blood vessels of the skin.
- It is composed of adipose (fat) tissue, a form of connective tissue.
- Deep to the subQ layer is the fascial layer that covers the muscles beneath.

Combining Forms

Adip/o

Lip/o

Steat/o



All mean FAT

Cutane/o

Dermat/o

Derm/o



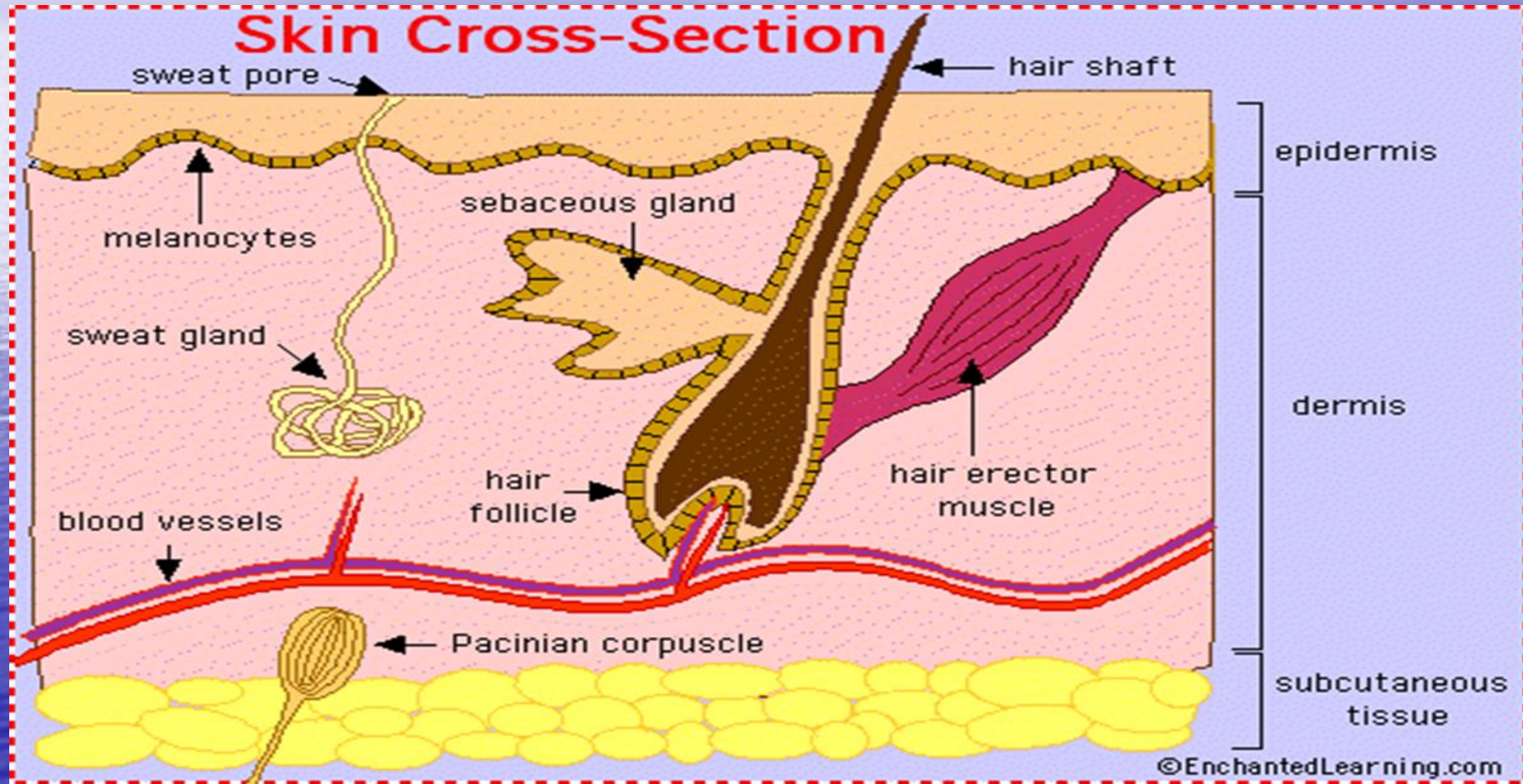
skin

Compound Hair

Remember, the dermis contains the hair follicles, sweat glands, and sebaceous glands (oil glands)



Skin Cross-Section



Glands Of Skin

- The oil secreting glands of the skin are called the SEBACEOUS GLANDS.
- The sweat glands are known as SUDORIFEROUS GLANDS.

- **NAILS , CALWS AND HOOFS**

- These Structures closing the distal phalanx ,they are basically similar , and serve primarily to protect the underlying tissues .
- **The nail (الأضافر)** of primates grow from the epidermis , covering a curved fold of dermis at its base .
- **The claw (المخالب)** of carnivorous can be likened to a nail that has been laterally compressed and so has obtained a sharp dorsal border
- **The hoof of horse** is the horny covering of the distal end of the digit. It is divide it for description into three parts, termed the wall, sole, and frog.



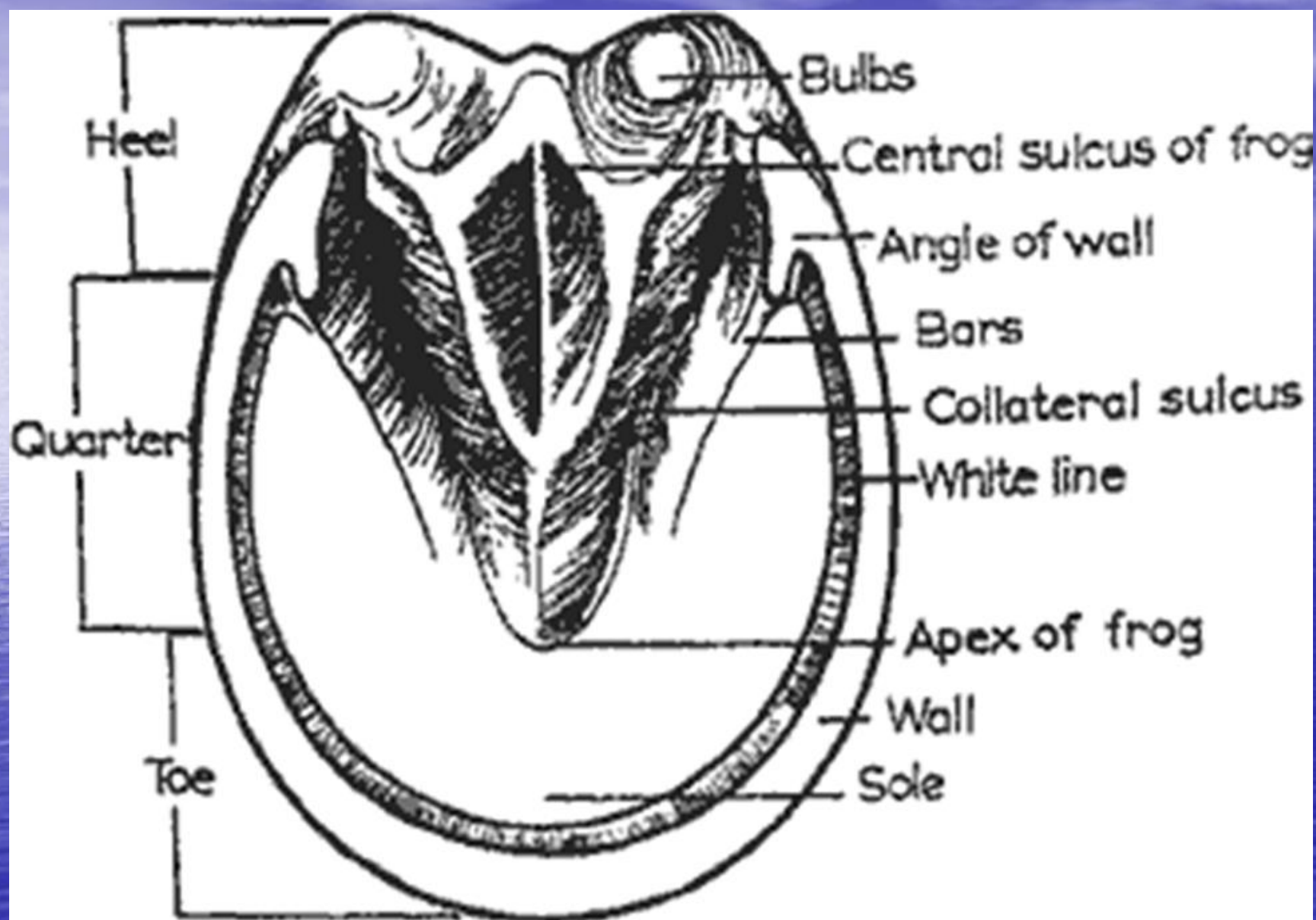
Toe

Quarter

Heel

- **Topographically** The wall may be divided into an anterior part or "toe" , lateral parts or "quarters" and the angles or "heels"). It presents two surfaces and two borders. The outer surface is convex from side to side and slopes obliquely from edge. The curve of the wall is wider on the external than on the internal side. The inferior or ground surface normally arched—and more strongly in the hind than in the fore foot—but the curvature is subject to wide variation.

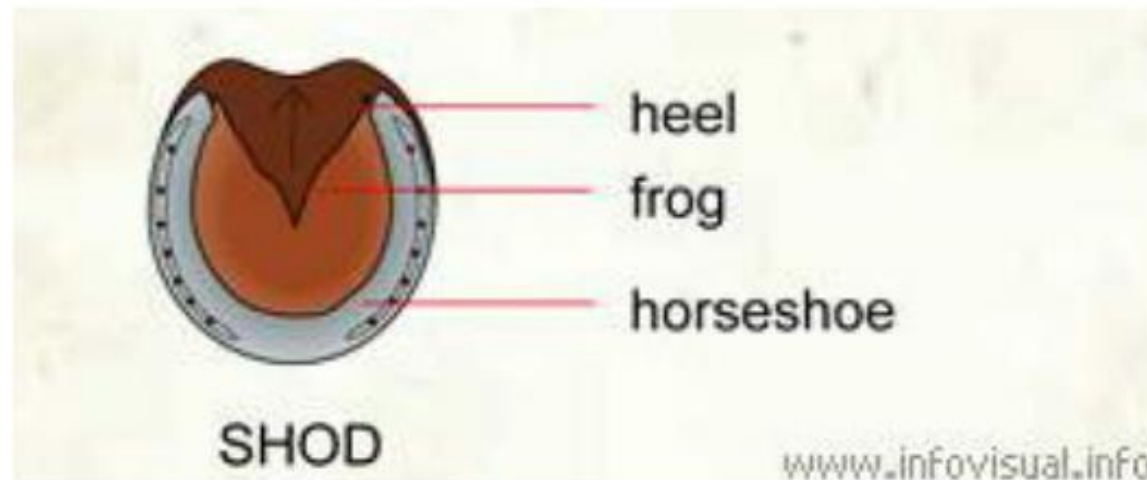
- The wall of horse hoofs in addition strongly curved , the sides is sharply inflected (مقوس بشكل حاد) to form so called bars . The space between the bars is occupied by the frog , the part of footpad that makes contact with the ground . The sole horns that fills the ground surfaces between the wall and frog meet the wall at a junction known as the white line . The white line marks the border between the sensitive and insensitive sole. It serves as a guide to show where nails should be driven when shoeing the horse



- The wall grows distally from the epidermis regions of the dermis; the combination of horn types gives the tissue a finely striated appearance. The (laminar) epidermis deep to the wall arranged as several hundred well formed laminae that tightly interdigitate with an equal number of dermal laminae bonding the wall to the underlying distal phalanx.

Heel

- ▶ The heel is the part behind the horses hoof



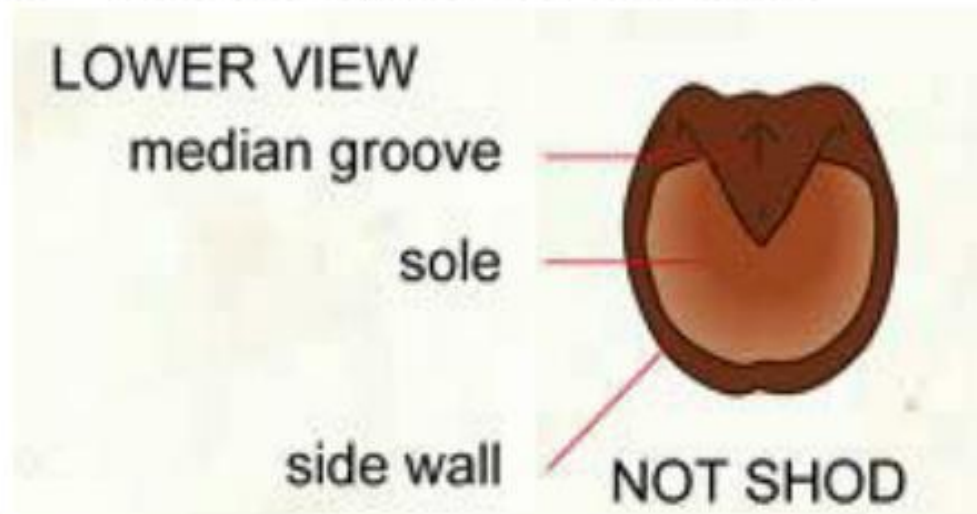
Frog

- ▶ The frog is a piece of soft flexible horn under the hoof



Median Groove, Sole, Sidewall

- ▶ Median Groove– Groove at the center of the hoof
- ▶ Sole– Hard horny bottom of the hoof
- ▶ Sidewall– external part of the hoof





Thank You