

CONCEPT: OVERVIEW OF THE INTEGUMENTARY SYSTEM

Layers of the Skin

◆ **Integumentary System:** set of organs consisting of _____ & its accessories (hair, nails, sweat, & sebaceous glands).

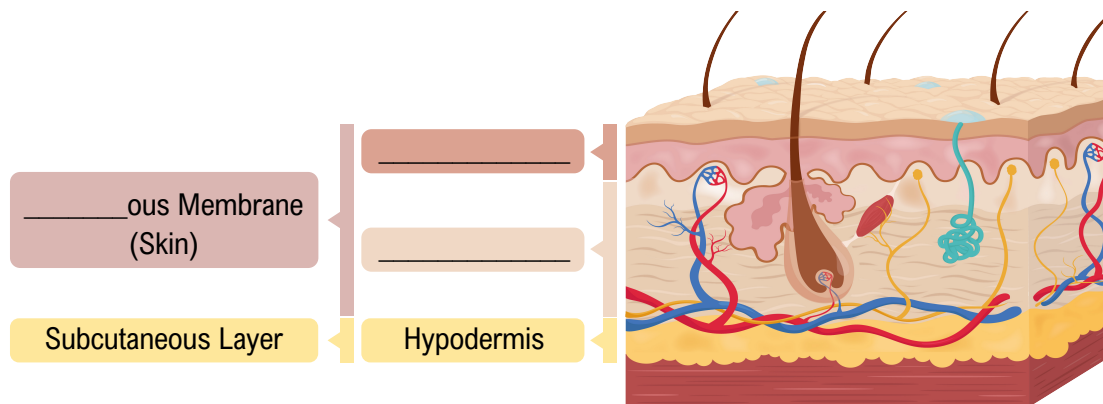
◆ Skin is the largest organ of the human body and composed of _____ layers:

① **Epidermis:** _____ layer, insensitive and avascular (lacks its own blood supply).

② **Dermis:** inner layer, composed of _____ tissue.

- Has blood vessels, _____ endings, hair follicles, sweat glands, and sebaceous glands.

▪ **Subcutaneous Layer (_____ dermis):** fatty layer, separates the dermis from the deeper tissue.



EXAMPLE

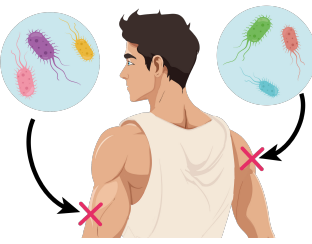

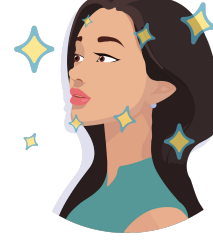

Identify the incorrect statement.

- a) The epidermis is the outermost layer of the skin and lacks its own blood supply.
- b) The dermis is a connective tissue that binds the epidermis to deeper muscles.
- c) The primary organ of the integumentary system is the largest organ of the human body.
- d) Cutaneous membrane is a collective name for the epidermis and the dermis.

CONCEPT: OVERVIEW OF THE INTEGUMENTARY SYSTEM

Integumentary System Functions

◆ Serves the following main functions:

1. Protection	2. Regulation	3. Secretion	4. Sensation
			
◆ Chemicals & pathogens. ◆ Loss of critical _____.	◆ _____ evaporation. ◆ Vasoconstriction & vasodilation.	◆ Sebaceous secretions _____ hair & skin.	◆ Temperature, _____, touch, & pressure.

EXAMPLE

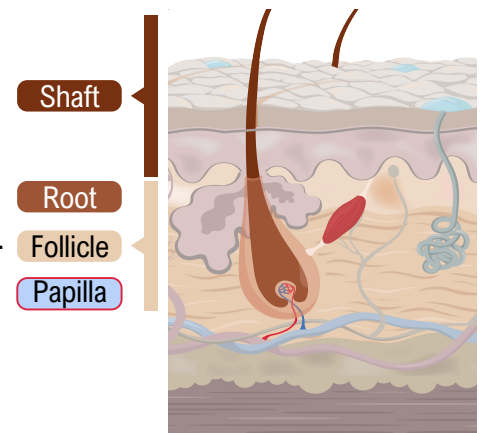
Which of the following statements is incorrect about the functions of the skin?

- a) Sweat produced by sweat glands evaporates on the skin to help cool it down.
- b) Sebum lubricates the skin and helps to keep it moisturized.
- c) The skin can sense temperature through the nerve endings in its outer layer.
- d) The skin acts as a barrier and prevents pathogens from entering the body.

CONCEPT: OVERVIEW OF THE INTEGUMENTARY SYSTEM

Accessory Structures: Hair

- ◆ Anatomical structures made up of _____ keratinized cells.
- ◆ Composed of a _____ and a root (embedded within the hair follicle).
 - Roots get nourishment from a loop of capillaries called _____.
- ◆ Contraction of **arrector pili** (a slip of smooth muscle) causes _____ bumps.



EXAMPLE

_____ is the protein that makes up most of the hair.

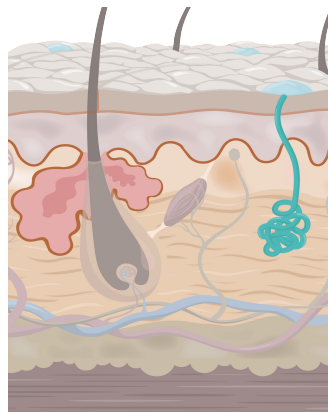
- a) Collagen
- b) Melanin
- c) Albumin
- d) Keratin

Accessory Structures: Sweat & Sebaceous Glands

- ◆ Sweat & sebaceous glands are _____ crine glands.

Sebaceous Glands

- ◆ Sebum lubricates skin & hair.
- ◆ Production ____ during adolescence & ____ in old age.



Sweat Glands

- ◆ Sweat is secreted through a _____ onto the surface of the skin.
- ◆ Aids in excretion of _____.

EXAMPLE

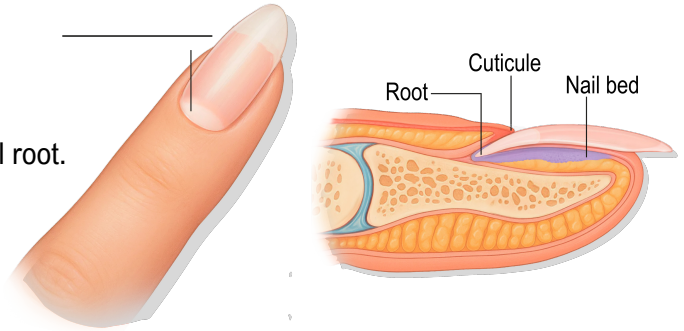
Identify the statement that correctly describes the sweat and sebaceous glands.

- a) Sweat is secreted into hair follicles while sebaceous glands secrete sebum onto the surface of the skin.
- b) Sebaceous glands help to keep skin lubricated while sweat glands help to regulate body temperature and remove waste products.
- c) Sweat glands become less active with age while sebum production remains the same.
- d) Sebaceous and sweat glands are both ductless but differ in where they deliver their secretions.

CONCEPT: OVERVIEW OF THE INTEGUMENTARY SYSTEM

Accessory Structures: Nails

- ◆ Flat plate of _____ covers the ends of fingers & toes.
 - Connected to the deeper tissue by the nail _____.
- ◆ **Cuticle:** A soft tissue at the base of the nail, _____ the nail root.
- ◆ **Lunula:** Light-colored half-_____ at the base of the nail.



EXAMPLE

Which of the following statements about the integumentary system accessory structures is correct?

- a) Papillae at the base of the nail provide oxygen and nutrients for growth.
- b) Arrector pili provides structural strength to the dermis.
- c) The cuticle provides structural support to the base of the nail.
- d) Goosebumps are caused by a small muscle attached to the hair follicle.

PRACTICE

Which of the following statements about the accessory structures of the integumentary system is correct?

- a) Hair is composed of living keratinized cells and gets nourishment from a loop of capillaries called papilla.
- b) Nails are composed of a hard protein called keratin and are connected to the deeper tissue by the cuticle.
- c) The arrector pili muscle located in the epidermis contracts to produce goosebumps.
- d) Sweat glands help with waste removal in addition to temperature regulation.