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REVIEW SHEET EXERCISE

NAME _____

LAB TIME/DATE _____

The Integumentary System

Basic Structure of the Skin

1. Complete the following statements by writing the appropriate word or phrase on the blank line:

- The superficial region of the skin is the epidermis, composed of stratified squamous epithelial (3 words) tissue.
- The deeper region tissue is the dermis, composed of connective tissue.
- The most numerous cell of the epidermis is the keratinocytes.
- The two primary layers of the dermis are the papillary dermis, composed of areolar connective tissue, and the reticular dermis, composed of dense irregular connective tissue.

2. Four protective functions of the skin are:

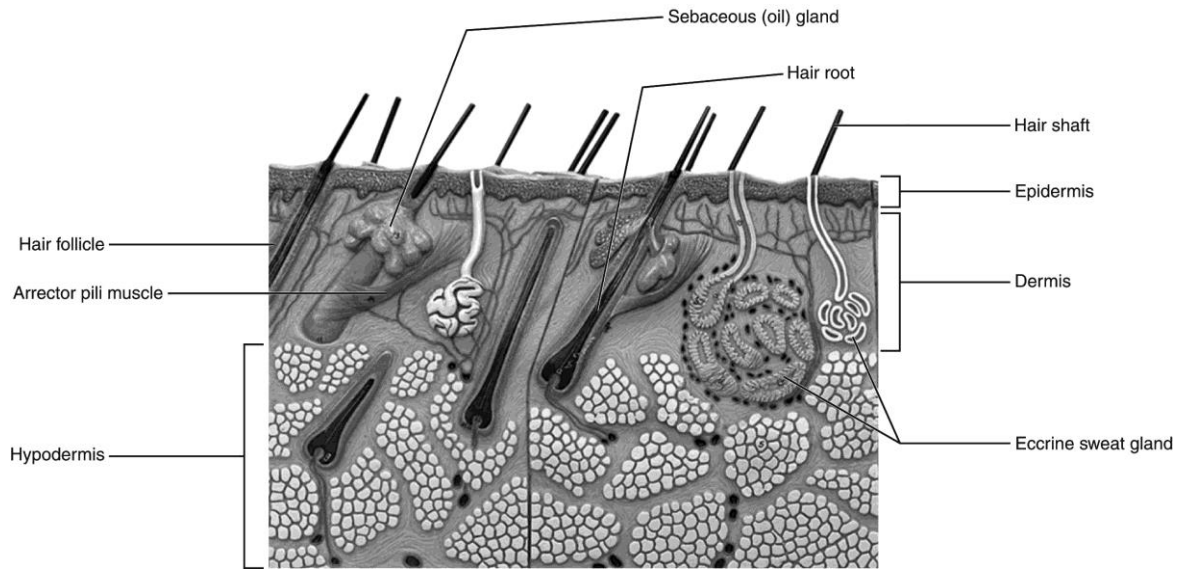
- insulates and cushions the underlying tissue
- protects the body from abrasion
- protects the body from harmful chemicals
- prevents water loss from internal reserves

3. Using the key choices, choose all responses that apply to the following descriptions. Some terms are used more than once.

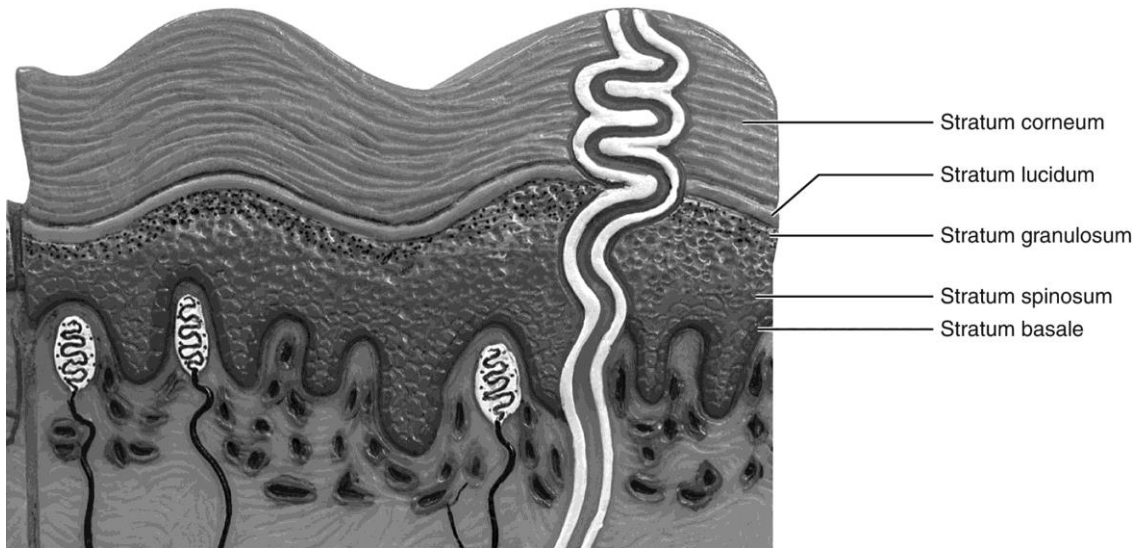
- Key:
- | | | |
|-----------------------|---------------------|---------------------|
| a. stratum basale | d. stratum lucidum | g. reticular dermis |
| b. stratum corneum | e. stratum spinosum | |
| c. stratum granulosum | f. papillary dermis | |

- | | |
|-----------------------------------------------|--------------------------------------------------------------------------------------|
| <u>d; stratum lucidum</u> | 1. layer of translucent cells in thick skin containing dead keratinocytes |
| <u>b; stratum corneum, d; stratum lucidum</u> | 2. two layers containing dead cells |
| <u>f; papillary dermis</u> | 3. dermal layer responsible for fingerprints |
| <u>a; stratum basale</u> | 4. epidermal layer exhibiting the most rapid cell division |
| <u>b; stratum corneum</u> | 5. layer including scalelike dead cells, full of keratin, that constantly slough off |
| <u>c; stratum granulosum</u> | 6. layer named for the numerous granules present |
| <u>a; stratum basale</u> | 7. location of melanocytes and tactile epithelial cells |
| <u>e; stratum spinosum</u> | 8. area where weblike pre-keratin filaments first appear |
| <u>g; reticular dermis</u> | 9. deep layer of the dermis |
| <u>c; stratum granulosum</u> | 10. layer that secretes a glycolipid that prevents water loss from the skin |

4. Label the integumentary structures and areas indicated in the diagram.



5. Label the layers of the epidermis in thick skin. Then, complete the statements that follow.



- Glands that respond to rising androgen levels are the sebaceous oil glands.
 - Dendritic or Langerhans cells are epidermal cells that play a role in the immune response.
 - Tactile corpuscles are located in the papillary layer.
 - Lamellar corpuscles are located deep in the dermis.
6. What substance is manufactured in the skin and plays a role in calcium absorption elsewhere in the body? Vitamin D
7. List the sensory receptors found in the dermis of the skin. Free nerve endings (for pain, temperature), tactile corpuscles (for touch in hairless skin), lamellar corpuscles (for pressure)

Accessory Organs of the Skin

8. Match the key choices with the appropriate descriptions. Some terms are used more than once.

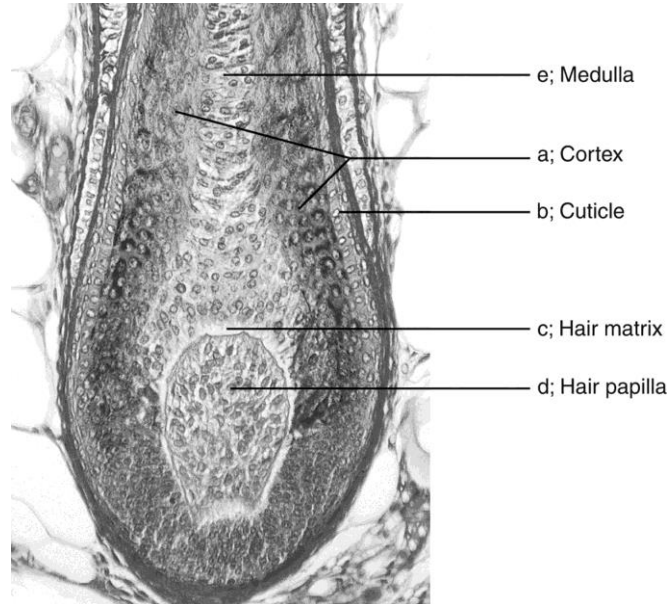
- Key: a. arrector pili d. hair follicle g. sweat gland—apocrine
 b. cutaneous receptors e. nail h. sweat gland—eccrine
 c. hair f. sebaceous glands

- a; arrector pili 1. tiny muscles, attached to hair follicles, that pull the hair upright during fright or cold
- h; sweat gland—eccrine 2. sweat gland with a role in temperature control
- d; hair follicle 3. sheath formed of both epithelial and connective tissues
- g; sweat gland—apocrine 4. less numerous type of sweat-producing gland; found mainly in the pubic and axillary regions
- c; hair, e; nail 5. primarily dead/keratinized cells (two responses from key)
- b; cutaneous receptors 6. specialized nerve endings that respond to temperature, touch, etc.
- f; sebaceous gland 7. secretes a lubricant for hair and skin

9. Describe two integumentary system mechanisms that help regulate body temperature. (1) When capillary blood flow to the skin is enhanced (by nervous system controls), heat radiates from the skin surface; restriction of blood flow conserves body heat. (2) Activity of sweat glands (i.e., when perspiration evaporates from the skin surface, heat is lost).

10. Several structures of the hair are listed below. Identify each by matching its letter with the appropriate area on the photomicrograph.

- a. cortex
 b. cuticle
 c. hair matrix
 d. hair papilla
 e. medulla



Dermography: Fingerprinting

14. Why can fingerprints be used to identify individuals? Everyone's fingerprints are genetically distinct.

15. Name the three common fingerprint patterns. loops, arches, and whorls.

16. Henna tattoos are temporary tattoos that last about 2 weeks. Hypothesize why henna tattoos do not last as long as permanent tattoos. Henna tattoos utilize a superficial application and only stain or color the cells of the epidermis. The color fades and disappears as these cells are pushed to the surface of the skin and replaced. This is not the case with permanent tattoos as the ink is injected into the dermal layer of the skin, using a needle, where it is retained for a much longer time.

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