

# INTEGUMENTARY SYSTEM WORKSHEET #1

Write true if the statement is true, correct the statement if it is false.

- \_\_\_\_\_ 1. The skin is the body's largest organ.  
 \_\_\_\_\_ 2. Subcutaneous tissue lies underneath the dermis.  
 \_\_\_\_\_ 3. The epidermis has lots of blood vessels.  
 \_\_\_\_\_ 4. Melanocytes are located in the bottom layer of the epidermis.  
 \_\_\_\_\_ 5. The epidermis contains the hair follicles.  
 \_\_\_\_\_ 6. If a sebaceous gland becomes plugged and infected, it develops into a pimple.  
 \_\_\_\_\_ 7. The subcutaneous tissue contains about 90 percent of the body's fat.  
 \_\_\_\_\_ 8. The evaporation of sweat helps increase the temperature of the skin surface.  
 \_\_\_\_\_ 9. The skin makes vitamin A through exposure to UV radiation.  
 \_\_\_\_\_ 10. UV radiation hurts DNA molecules in skin cells.  
 \_\_\_\_\_ 11. Sweating helps lower body temperature, and people without sweat glands can die of heat stroke.  
 \_\_\_\_\_ 12. Heredity is the biggest factor in the overall aging of skin.  
 \_\_\_\_\_ 13. The skin helps regulate body temperature by producing sweat when we are hot and by dilating blood vessels in the skin when we are cold.

## Functions of Skin: Skin and Homeostasis

The skin has multiple roles in homeostasis, including protection, control of body temperature, sensory reception, water balance, synthesis of vitamins and hormones, and absorption of materials. The skin's main functions are to serve as a barrier to the entry of microbes and viruses, and to prevent water and extracellular fluid loss. Acidic secretions from skin glands also stop the growth of fungi on the skin. Melanocytes form a second barrier: protection from the damaging effects of UV radiation. When a microbe gets into the skin (or when the skin is cut) an immune system reaction occurs.

Heat and cold receptors are located in the skin. When the body temperature rises, the hypothalamus sends a nerve signal to the sweat-producing skin glands, causing them to release sweat onto the skin surface. The evaporation of sweat helps reduce the temperature of the skin surface which cools the body. The hypothalamus also causes dilation of the blood vessels of the skin, allowing more blood to flow into those areas, causing heat to be released from the skin surface. When body temperature falls, the sweat glands constrict and sweat production decreases. If the body temperature continues to fall, the body will start to generate heat by raising the body's metabolic rate and by causing the muscles to shiver.

The homeostatic functions of the skin include: Protection of the body's internal tissues and organs, Protection against invasion by infectious organisms, Protection of the body from dehydration, Protection of the body against large changes in temperature, Excretion of wastes through sweat, Acts as a receptor for the senses of touch, pressure, pain, heat, and cold, Makes vitamin D through exposure to UV radiation, Stores water, fat, and vitamin D.

## Questions

1. What do acidic secretions from skin glands do? \_\_\_\_\_
2. How does dilation of the blood vessels of the skin reduce the temperature of the skin surface? \_\_\_\_\_
3. What can the muscles do to help raise the body's temperature? \_\_\_\_\_
4. How does the skin excrete wastes? \_\_\_\_\_

## Multiple Choices

8. \_\_\_\_\_ The skin shields the body against \_\_\_\_\_.
- a. heat                      b. light                      c. injury                      d. all of the above

9. \_\_\_\_ The epidermis contains \_\_\_\_\_.  
 a. hair follicles      b. blood vessels      c. sweat glands      d. keratin
10. \_\_\_\_ Which of the following is composed of keratin?  
 a. cuticle      b. nail plate      c. lunula      d. none of the above
11. \_\_\_\_ What type of hair covers the entire body of fetuses?  
 a. vellus hair      b. terminal hair      c. lanugo      d. none of the above
12. \_\_\_\_ Which is not a function of the skin?  
 a. Protection against mechanical injury      c. Protection against foreign invaders  
 b. Regulation of body heat      d. All of the above are functions
13. \_\_\_\_ The layer of skin that lacks blood vessels is:  
 a. Subcutaneous      b. Dermis      c. Integument      d. Epidermis
14. \_\_\_\_ The dermis does not contain:  
 a. Sebaceous glands      b. Hair follicles      c. Mucous glands      d. Nerves
15. \_\_\_\_ The color of human skin depends upon:  
 a. Whether the blood within the skin is well oxygenated      c. carotene  
 b. The kind and amount of pigment      d. All of the above
16. \_\_\_\_ Which layer of epidermis would be gradually shed through bathing?  
 a. Stratum granulosum      b. Stratum corneum      c. Stratum basale      d. Stratum lucidum
17. \_\_\_\_ The dermis is primarily composed of which tissue type?  
 a. Nervous      b. Muscle      c. Connective      d. Epithelial
18. \_\_\_\_ Which epidermal layer is closest to a blood supply? (pg. 117)  
 a. Stratum basale      b. Stratum spinosum      c. Stratum granulosum      d. Stratum corneum
19. \_\_\_\_ Which of the following is **not** true about the integumentary system?  
 a. The average adult's skin weighs about 6 pounds      c. The thickest skin on our body is on our face  
 b. Skin is flexible and rugged      d. The thinnest skin is on our eyelids

### Matching

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|------------------------------|---|
| ____ 1. Dermis               | a. The organ system consisting of skin, hair, and nails.                              |
| ____ 2. melanin              | b. The outermost layer of the skin.   |
| ____ 3. epidermis            | c. Secretes an oily substance into the hair follicle.                                 |
| ____ 4. integumentary system | d. Lies below the dermis and contains fat and loose connective tissue.                |
| ____ 5. reticular region     | e. The layer of skin directly under the epidermis                                     |
| ____ 6. sebaceous gland      | f. An oily substance secreted by sebaceous glands.                                    |
| ____ 7. sebum                | g. Part of the dermis that contains touch receptors.                                  |
| ____ 8. subcutaneous tissue  | h. The brown pigment that gives skin, hair and eyes their color.                      |
| ____ 9. papillary region     | i. Part of the dermis that contains the hair follicles and roots, nerves, and glands. |

### Matching

- |                           |   |
|---------------------------|---|
| ____ Stratum corneum      | A. A clear, transparent layer through which light can pass.                                 |
| ____ Stratum lucidum      | B. Cells look like granules, and they are pushed to surface to replace cells that are shed. |
| ____ Stratum granulosum   | C. has a layer of oil to help make this layer a protective, waterproof layer.               |
| ____ Stratum germinativum | D. The deepest layer of epidermis, responsible for the growth of the epidermis.             |