Lesson 21.4: Critical Reading

Read these passages from the text and answer the questions that follow.

Functions of the Skin

The skin has multiple roles in the body. Many of these roles are related to homeostasis. The skin’s main functions are preventing water loss from the body and serving as a barrier to the entry of microorganisms. In addition, melanin in the skin blocks UV light and protects deeper layers from its damaging effects.

The skin also helps regulate body temperature. When the body is too warm, sweat is released by the sweat glands and spreads over the skin surface. As the sweat evaporates, it cools the body. Blood vessels in the skin also dilate, or widen, when the body is too warm. This allows more blood to flow through the skin, bringing body heat to the surface, where it radiates into the environment. When the body is too cool, sweat glands stop producing sweat, and blood vessels in the skin constrict, or narrow, thus conserving body heat.

Questions

1. What are the skin’s two main functions?

2. What is the function of melanin in the skin?

3. How does sweat regulate body temperature when the body is too warm?

4. How do blood vessels in the skin regulate body temperature when the body is too cool?
3. Figure 4–2 depicts a longitudinal section of the skin. Label the skin structures and areas indicated by leader lines and brackets on the figure.

1. Arrector pili muscle
2. Adipose tissue
3. Hair follicle
4. Nerve fibers
5. Sweat (sudoriferous) gland
6. Sebaceous gland

**Figure 4–2**