Teach, *continued*

Teaching Key Ideas

Hair Growth Tell students that the rate of hair growth differs in different regions of the body, and differs with age and sex. People have an average of 120,000 scalp hairs, and an average of about 100 scalp hairs fall out every day. People with blonde hair tend to have more hair than people with red or brown hair. Factors that can increase hair loss include poor diet, high fever, stress, drugs, radiation, and pregnancy.

READING TOOLBOX

Analogies fungus LS Verbal

Close

Formative Assessment

Melanin is produced in the _____.

A. upper layer of the epidermis (Incorrect. This layer is made of dead cells.)

B. lower layer of the epidermis (Correct! The cells that produce melanin are found in this layer.)

C. dermis (Incorrect. This layer does not contain the cells that produce melanin.)

D. subcutaneous tissue (Incorrect. This layer is mainly fat and does not contain the cells that produce melanin.)







Figure 13 Skin disorders can have a variety of causes. Malignant melanoma (*left*) is usually caused by overexposure to UV radiation in sunlight. Athletes foot (*middle*) is caused by a fungus. Psoriasis (*right*) is a hereditary condition.

SCILINKS
www.scilinks.org
Topic: Skin Cancer
Code: HX81401

READING TOOLBOX

Analogies Use information on this page to solve the following analogy.
skin cancer : radiation :: ringworm : ___

Disorders of Skin

Skin diseases and disorders have a variety of causes. **Skin disorders can be genetic, the result of infections or parasites, or a result of changes that occur within the body over time.** Some common skin disorders are shown in **Figure 13.**

Acne Oil glands are especially active during adolescence. Acne results when pores become clogged and infected with bacteria. These bacteria produce pus, which causes pimples. Often, acne can be controlled by washing gently twice a day and using a topical acne treatment. Serious acne may need to be treated with antibiotics.

Skin Cancer The most common types of skin cancer are carcinomas (KAHR suh NOH muhz), which develop in epidermal cells that do not produce melanin. Carcinomas can be treated if they are detected early. Cancer that occurs in pigment-producing epidermal cells are called *melanomas* (MEL uh NOH muhz). This type of cancer tends to grow very quickly and spread to other parts of the body. About 8 out of 10 skin cancer deaths are from malignant melanomas. Avoiding UV radiation can help reduce your risk of skin cancer.

Other Disorders Fungal infections of the skin include athlete's foot and ringworm. *Psoriasis* is a hereditary skin disorder that causes red, scaly patches. These patches tend to appear during cold weather, when the skin is irritated, or when the body's immune system is stressed.

Section 4 Review

KEY IDEAS

1. **Describe** the structures found in each layer of skin.
2. **List** four important roles that skin plays in the body.
3. **Name** the structures that form hair and nails.
4. **Identify** four possible causes of skin diseases and disorders.

CRITICAL THINKING

5. **Making Inferences** Why can a third-degree burn, which destroys the epidermis and dermis of the skin, be a deadly injury?
6. **Evaluating Viewpoints** Your friend tells you that because she tans easily, she does not need to wear sunscreen. Evaluate this statement. Does this viewpoint seem valid? Why or why not?

USING SCIENCE GRAPHICS

7. **Pie Graph** About 7% of your body weight is skin. What percentage of your body weight is made up by the rest of your body's systems? Draw a pie graph to represent this information.

Answers to Section Review

1. epidermis: dead epithelial cells make up the top layer, and pigment-producing cells are found at the bottom; dermis: contains blood vessels, hair follicles, sweat glands, oil glands, nerve cells, connective tissue; subcutaneous tissue: connective tissue made mostly of fat
2. protects the body from UV radiation, protects the body from disease, helps regulate body temperature, and prevents the body from drying out
3. hair: hair bulb; nails: lunula
4. Accept any four discussed in this section.
5. Without these layers, pathogens can enter the body, fluids are lost to the outside, the person cannot sense stimuli from the environment, and organs such as muscles are not protected.
6. Students should recognize that even people who tan easily can sustain damage from UV radiation and develop skin cancer.
7. Students should draw a circle graph that shows a small section representing 7%, and the rest of the chart representing 93% of the body's weight.