

The Integumentary System

Chapter 15 Lesson 1

Functions of the Skin

- Your skin is the primary organ in your *integumentary system*. This is the body system that includes your skin, hair, nails, sebaceous glands, and sweat glands. The skin serves a number of vital functions that are critical to your survival including:
 - **Providing a protective covering for your body-** Your skin acts as the main barrier between your internal organs and the outside world. It shields them from injury, invasion by pathogens, and the sun's harmful UV rays. Your skin is water proof. It has a water-holding capacity that contributes to its elasticity and helps maintain the body's balance of fluid and electrolytes.

Functions of the Skin cont.

- **Regulating body temperature-** When your body is hot, tiny blood vessels in the skin enlarge, permitting internal heat to escape through a process called *radiation*. The sweat glands also become active, releasing perspiration, which cools the skin as it evaporates. As your internal temperature drops, blood vessels in the skin narrow, conserving heat.
- **Enabling you to sense the world around you-** The skin is a major sense organ that serves as a means of communication with the outside environment. Nerve endings in your skin are responsive to touch, pain, pressure, and temperature.

Structures of the Skin

- Your skin has two main layers. The **epidermis**- *the outer, thinner layer of skin*, and the **dermis**- *the inner, thicker layer of skin*.
- **Epidermis**- is made up of both dead and living cells. The outermost part is composed of dead cells that form a tough, protective coating. The epidermis contains a fatty substance called lipids that make the skin waterproof. The dead cells of the epidermis are shed off when you wash and when your skin rubs against your clothes. As these dead cells are worn away, they are replaced by new cells about once a month. New cells then rise to the surface to replace the old ones.

Structures of the Skin

cont.

- **Melanin-** *the pigment that gives the skin, hair, and iris of the eyes their coloring.*
- Skin color in humans is determined largely by the amount of melanin in the skin. The more melanin, the more protection from the sun and its ultraviolet rays, which have been linked to skin cancer.
- **Dermis-** the inner layer of skin, is made up of connective tissue that gives the skin its elasticity, or spongy, flexible quality. Nerve endings and hair follicles extend into the dermis. So do sweat glands and sebaceous glands. Below the dermis is tissue called the hypodermis. The hypodermis is not part of your skin, but it attaches the skin to bone and muscle.

Skin Care

- Good hygiene and a balanced eating style promote healthy skin. Daily washing slows the growth of bacteria that cause body odor. Vitamin A helps promote healthy skin. Good sources of vitamin A include milk, egg yolks, liver, green leafy and yellow vegetables, and yellow fruits.

Problems of the Skin

- **Impetigo-** a streptococcal infection in which bacteria enter a small break in the skin. This infection is highly contagious.
- **Blisters-** raised areas filled with a watery fluid. They usually result from skin being rubbed or burned. A blister should be protected to keep it from breaking and left to heal on its own. A broken blister can become infected.
- **Callus-** a callus is a thickened area of skin that is the result of continued friction or pressure. Musicians who play stringed instruments often develop calluses on their finger-tips. Calluses can be reduced by rubbing them with a porous stone called pumice.
- **Corn-** a corn is a callus on a toe caused by the pressure of a tight fitting shoe. Spongy corn pads can relieve the pressure that makes corns painful. Wearing shoes that fit properly is the main way to prevent corns.