BODY ATLAS **- PROGRAM 5: SKIN**

Kadamba, sunbathes, swims and brushes her hair. Through her we see the effects of the sun on the skin and how skin and hair grow and are replenished. We see how the skin protects the body, regulates body temperature, reacts to sensations, and synthesizes vitamins. We see also how hair grows and is distributed and how nails develop. Considering what the skin does to protect us, we should exercise more caution to protect it.

**Outline of Major Concepts:**

The skin constitutes about \_\_\_\_ lbs. of the body's weight and covers an area of some \_\_\_\_ sq. ft.

One sq. in. of a hand's skin contains 9 ft. of blood vessels, 30 hairs, 134 yds. of nerves, 600 pain sensors, 36 heat sensors, 75 pressure sensors, and \_\_\_\_\_\_\_\_\_\_ nerve endings.

The skin is multi-layered. The outer layer, the \_\_\_\_\_\_\_\_\_\_\_, is about half the thickness of a \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_. Cells are constantly pushing up from below to replace the epidermis.

The skin cells we touch have hardened and died. Every day we shed 10 million dead skin cells,

\_\_\_\_ lbs. in a lifetime. We grow a new skin about every six weeks.

Skin cells produce a protective substance, \_\_\_\_\_\_\_\_\_\_\_\_\_. It is the skin's protection against sunburn. It is more active in dark-skinned people. Fair-skinned people are more vulnerable to sunburn and, therefore, suffer more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The second layer of skin, dermis, is the "machine" in the world of flesh. It consists of flexible fibers, \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_.

**TURN OVER 🡪**

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The skin controls body temperature with sweat glands playing the crucial role. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of sweat cools the skin. It is possible for a person to sweat \_\_\_\_ gallons in a day.

Blood vessels dilate, increasing blood flow to the surface releasing heat. Sweat, air currents and radiation carry the heat away.

In cold weather heat sensors are the body's thermostat, switching on and off. The sensors tell muscles to pull hair upright which traps the warmer air close to the body's surface.

Messages from touching reach the brain in less than 1/100 of a second. The sensors are closest together at the finger tips, about \_\_\_\_\_\_\_\_ of an inch apart.

Hair is made from the same fibers as skin and is dead above the skin's surface. It grows from tiny pits, called\_\_\_\_\_\_\_\_\_\_\_\_\_. There are up to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ hairs on the human head.

Eyelashes protect from dirt and dust particles. Eyebrows keep sweat out of the eyes. Ear hair wax filters out dust and insects.

In aging, hair follicles shrink producing fine hairs, the pigmentation process slows causing hair to grey, and the skin gets thinner losing its elasticity which results in wrinkles.

Photo-aging is caused by the sun's \_\_\_\_\_\_\_\_\_\_\_\_ radiation which hardens the skin's \_\_\_\_\_\_\_\_\_\_\_\_. This is the leading contributor to skin cancer.

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