

INTEGUMENTARY SYSTEM

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http://Biology.clc.uc.edu/Fankhauser/Labs/Anatomy_&_Physiology/A&P201/Integumentary/Integument.htm

The skin is the largest organ of the body. It gets its strength and nourishment from the underlying dermis, a dense irregular connective tissue (previously seen in the *Connective Tissues Lab*). It is protected by an outer covering of epidermis, a keratinized stratified squamous epithelial tissue. Numerous accessory organs are associated with it, notably sweat glands, hair follicles, sebaceous glands, and nerve endings. Note that all but the nerve endings originate from the epithelial layer. We will spend considerable time studying a single slide to understand the structure and functioning of the features of this crucial barrier between the external environment and our vital inner organs.

Make *three* illustrations:

1. 100x view showing the overall relationships of the epidermis, dermis and accessory structures as listed in the left column below.
2. 400x view of a strand of hair (can be same page as epidermis, 400x).
3. 400x view of the epidermis, labeling its various layers, according to the list in the right column.

Contrast epidermis with the mucous membrane of the esophagus, a non-keratinized stratified squamous epithelium which you studied as part of the *Epithelial Tissues Lab* (slide #5).

(slide 15) **Skin**, mammal, (VE's 9th: pp 143-149)

1) **Hair follicle & accessory organs:**

(VE:fig 9-4, p 143)(100x illust.)

epidermis
dermis
sweat gland (only in c.s.?)
hair follicle:
epithelial lining
hair bulb
papilla of follicle (continuous with dermis)
matrix of hair
hair medulla
hair cortex
sebaceous gland
arrector pili

2) **Cross section of a hair** at 400x:

flattened, flaking cells on outside
cuticle
cortex
medulla

3) **Features of the epidermis *per se*:**

(VE:fig 9-11, p 149)
(400x illustration)

epidermis and its layers:
stratum corneum
stratum lucidum (barely visible in these thin skin sections)
stratum granulosum
stratum germinativum including:
stratum spinosum
stratum basale
(any mitotic figures?)
dermis and its features:
fibroblasts
collagenous fibers
capillaries
[dermal papilla?]
sweat gland excretory duct (only cs?)