

Chapter 8: The Integumentary System

I. INTRODUCTION

- A. Comprised of the _____ and its accessory components, including hair, nails, and associated glands
- B. Functions
1. Protects from _____
 2. Balances fluid levels
 3. Stores fatty tissue for energy supply
 4. Produces vitamin D (with help from the sun)
 5. Provides sensory input
 6. Helps to regulate body _____

II. THE SKIN

- A. The skin is the largest organ, weighing approximately _____ pounds and covering an area about 20 square feet on an adult
- B. A cross-section of skin reveals three layers:

1	Epidermis	<ol style="list-style-type: none"> a. The _____ layer of skin; five sublayers b. No _____ vessels c. Deepest layer: new cells born every 2 to 4 weeks d. Surface layer: <ol style="list-style-type: none"> i. Dead cells—flat, scaly, keratinized epithelial cells ii. Sloughed off iii. Replaced by cells from deeper layers e. Melanocytes, make pigment _____
2	Dermis	<ol style="list-style-type: none"> a. Inferior to epidermis b. Connective tissue c. Contains accessory structures <ol style="list-style-type: none"> i. Capillaries ii. Involuntary muscles iii. _____ vessels iv. _____ follicles v. Sudoriferous (_____) glands <ol style="list-style-type: none"> a. Body has 3 million sweat glands b. Sweat has no odor, but bacteria degrade the substances in the sweat over time into chemicals that give off strong smells commonly known as body odor vi. Sebaceous (_____) glands <ol style="list-style-type: none"> a. Secrete sebum (oil) b. Sebum keeps skin from drying out and (because of its acid nature) helps destroy some pathogens on skin's surface
3	Subcutaneous Fascia	<ol style="list-style-type: none"> a. Deepest layer of skin b. Elastic and fibrous connective tissue and fatty tissue c. Insulation and attachment

C. Skin color

1. Melanocytes
 - a. Located deep in the epidermis
 - b. Produce _____ skin pigment
 - c. Skin color determined by distribution and abundance of melanin
2. Carotene, another form of pigment, gives a _____ hue to skin.
3. A pinkish hue derives from the hemoglobin in the _____
4. Effect of disease on skin color
 - a. When liver disease occurs, the skin turns a _____ color.
 - b. Malfunctioning adrenal gland can cause the skin to turn bronze because of excessive melanin.
 - c. Excessive bruising could indicate skin, blood, or _____ problems.
 - d. Cyanosis, or a blue coloring, results from a drop in _____.

III. SKING HEALING

- A. Blood clots, on skin surface, exposed to air—becomes a _____
- B. Repair progresses in same way as generalized tissue repair
- C. The wound ideally starts to heal from the _____ out.

IV. BURNS

- A. Heat, chemicals, electricity, and radiation can cause burns.
- B. Classification

1. Depth

	Degree Burns	Description
a	_____ -degree burns damage only the outer layer, or epidermis.	i. Only epidermis ii. Redness, pain, no blister iii. No scarring
b	_____ -degree burn	i. Entire epidermis, portion of dermis ii. Blistering iii. Scarring iv. Often need medical attention
c	_____ -degree burn	i. All three layers ii. Black, brown, tan, or white iii. Little pain initially iv. Destroys accessory structures v. Must have medical attention
d	_____ -degree burn	i. Most severe ii. Penetrates to bone

2. Amount of area damaged: the rule of nines

- a. Head and neck: _____ %
- b. Each upper limb: 9% (X 2 = _____ %)
- c. Front of trunk: 18%
- d. Back of trunk and buttocks: 18%
- e. Perineum (including anus and urogenital region): 1%

f. Each lower limb 18% (X 2 = _____ %)

C. Clinical concerns of burns

1. Bacterial _____
2. Fluid loss
3. Heat loss

D. Treatment for severe burns

1. Damaged skin must be removed.
2. _____ grafting

V. NAILS

A. Specialized epithelial cells originating from the nail root

B. Keratinized

C. The cuticle: fold of tissue that covers the nail root

D. Nail _____; visible portion of nail

E. Nails can be used to assess peripheral perfusion.

1. If you pinch one of your fingers, the pink color should return within _____ seconds (usually within 3 seconds) if you have good perfusion, after you release the pressure.
2. If the normal color takes longer to return, it may indicate a problem.
3. Blood clots or vascular spasm can decrease blood flow, as can hypothermia, making peripheral refill slower.
4. Reduced levels of _____ can cause a blue color to nail beds.

VI. HAIR

A	Purpose of Hair	<ol style="list-style-type: none"> 1. Body _____ regulation 2. Sensor 3. Protect eyes and nose from foreign objects
B	Anatomy of a Hair	<ol style="list-style-type: none"> 1. Hair made of _____ 2. Shaft: visible portion of hair; dead cells 3. Root extends down into the dermis to the follicle 4. _____: cells grow and divide there 5. A sebaceous gland is associated with each hair follicle. 6. Sebum production decreases with age.
C	Hair Color and Texture	<ol style="list-style-type: none"> 1. Dependent on the amount of melanin you produce 2. The more melanin, the _____ the hair 3. White hair occurs in the absence of melanin. 4. Red hair is the result of hair that has melanin with _____ in it. 5. Flat hair shafts produce _____ hair, whereas round hair shafts produce _____ hair. 6. The life span of hair is dependent on location: Eyelashes last 3 to 4 months; hair on the head lasts 3 to 4 years.
D	Forensics and Hair	<ol style="list-style-type: none"> 1. Hair can reveal to a pathologist if an individual ingested certain _____ or other substances, such as lead or arsenic. 2. Trace amounts of ingested substances can become part of the hair's composition.

		<p>3. Analysis of a hair sample can reveal what and how long ago toxins or drugs were ingested.</p> <p>4. The longer the length of hair, the longer the record of what was consumed by that individual.</p>
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VII. TEMPERATURE REGULATION

- A. Change in size of _____ vessels
 - 1. Vasodilation exposes heated blood to external cooling air.
 - 2. _____ keeps cooling of blood to a minimum in cold temperatures.
- B. Sweat glands excrete water onto the skin’s surface, allowing cooling through _____.
- C. _____: muscle contractions produce heat.
- D. Hairs on your skin stand erect, causing goose _____; these hairs insulate you from cooler surroundings.

VIII. DISEASES OF THE SKIN

- A. Melanoma: deadliest form of _____
- B. Lesion: any pathological change in skin

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Complete the Following:

- 1. Main Layers**
 - a. Epidermis
 - b. Dermis
 - c. Subcutaneous Fascia (Hypodermis)
- 2. Functions of the Integumentary**
 - a. Prevention of Fluid Loss
 - b. Prevention of Infection
 - c. Vitamin D Production
 - d. Temperature Regulation
 - e. Sensory Input
 - f. Fat Storage

Multiple Choice:

- 3. 4. 5.

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Multiple Choice:

- 1. 2. 3. 4.

Review Questions:

Multiple Choice:

- 1.
- 2.
- 3.
- 4.
- 5.

Fill in the Blanks

1. –
2. –
3. –
4. –
5. --

Short Answer

1. –

2. –

3. –

4. –