

Unit D Master Outline

D. Integumentary System

1H04.01 Explain the structure of the integumentary system.

- A. Layers of the skin
 - 1. Epidermis – outer layer
 - a. Stratum corneum
 - i. Outermost of three epidermal layers
 - ii. Contains keratin
 - b. Stratum germinativum
 - c. Melanocytes and melanin
 - d. Papillae
 - 2. Dermis – inner layer
 - a. Connective tissue
 - b. Blood vessels
 - c. Nerve endings
 - d. Muscles
 - e. Hair follicles
 - f. Oil and sweat glands
 - g. Fat cells
 - 3. Subcutaneous
 - a. Adipose
- B. Appendages
 - 1. Hair
 - a. Cortex and medulla
 - b. Root and shaft
 - c. Hair follicle
 - d. Papilla
 - e. Arrector pili muscle
 - 2. Nails
 - a. Matrix
 - b. Keratin
 - 3. Glands
 - a. Sudoriferous glands
 - i. Sweat = 99% water
 - ii. Location
 - iii. Pores
 - iv. Activated by heat, pain, fever and nervousness
 - b. Sebaceous glands
 - i. Sebum – protects and lubricates skin

1H04.02 Analyze the functions of the integumentary system.

- A. Skin
 - 1. Protection
 - a. Intact skin best protection
 - b. Skin generally too dry for microbial growth
 - c. Most skin bacteria associated with hair follicles or sweat glands
 - d. Best way to prevent spread of disease is handwashing
 - 2. Regulation of body temperature
 - 3. Manufactures vitamin D

4. Sensory perception
 5. Storage
 6. Sun screen
 7. Absorption
- B. Glands
1. Sudoriferous glands (sweat glands)
 - a. Perspiration is 99% water
 - b. Distributed over the entire skin surface, large numbers under the arms, palms of hands, soles of feet and forehead
 - c. Perspiration excreted through pores
 - d. May be activated by heat, pain, fever and nervousness
 - e. Underarm odor caused by bacteria mixed with sweat
 - f. Ave fluid loss = 500 cc/day
 2. Sebaceous glands
 - a. Sebum - oil
 - b. Protects and lubricates skin

1H04.03

Discuss characteristics and treatment of common skin disorders.

- A. Acne
1. Disorder of sebaceous glands
 2. Sebum plugs pores and area fills with leukocytes
 3. Also, blackheads, cysts, pimples and scarring
- B. Albinism – absence of melanin
- C. Alopecia – baldness
- D. Athlete's foot
1. Contagious fungal infection
 2. Usually contracted in public baths and showers
 3. Rx – antifungal agents
- E. Dermatitis
1. Non-specific skin inflammation
 2. Rash – reaction to soap, plants, etc.
 3. Skin blotches – caused by stress
- F. Herpes
1. Genital herpes
 - a. Viral blister in genital area
 - b. Spread through sexual contact
 - c. Periods of remission and exacerbation
 - d. Rx – Acyclovir
 - e. Can be passed to newborn during genital delivery
- G. Skin cancer
1. Associated with exposure to sun (UV rays)
 2. Most common type of cancer in people
 3. Melanoma
 - a. Malignant
 - b. Occurs in melanocytes
 - c. Metastasizes to other areas quickly
 - d. Brown or black irregular patch that occurs suddenly
 - e. Change in existing wart or mole may indicate melanoma
 - f. Rx – surgical removal of melanoma and surrounding area and chemotherapy