

## Integumentary System Basics

EQ: How does the structure of the skin allow it to perform its function?

- I. Functions of in maintaining Homeostasis
  - a. Protection
    - i. Cushions the body from:
    - ii. Mechanical damage
    - iii. Chemical damage
    - iv. Thermal damage
  - b. Thermal Regulation
- II. The Skin
  - a. Largest organ in the body contains all tissue types
  - b. 22 square feet
  - c. 1-2 mm thick
  - d. 10 lbs of body weight
- III. Skin Structure
  - a. Epidermis
    - i. Outermost portion of the skin
    - ii. All epithelial tissue
  - b. Dermis
    - i. Deepest layer of skin
    - ii. Mostly connective tissue
  - c. Hypodermis or Subcutaneous Layer
    - i. Areolar connective tissue & adipose
    - ii. Blood vessels & nerves
- IV. Overview of Epidermis
  - a. Stratified squamous epithelium
    - i. Avascular (contains no blood)
    - ii. 5 distinct strata (layers) of cells
- V. Overview of Dermis
  - a. Connective tissue layer composed of collagen & elastic fibers, fibroblasts, macrophages, and fat cells
  - b. Contains hair follicles, glands, nerves, and blood vessels
  - c. Two major regions
    - i. Papillary Region
      1. Upper 20% of dermis
      2. Finger like extensions push into the epidermis called the dermal papillae
      3. Contains pain & touch nerve endings
      4. Causes the finger prints
    - ii. Reticular Region
      1. CT tissue composed of blood vessels, sweat & oil glands, and pressure receptors.
      2. Both collagen & elastic fibers found here (which we lose as we age)
  - d. Tattoo & the Dermis