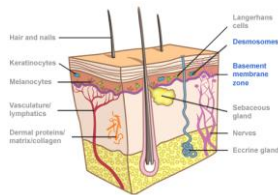


The Integumentary System

The Skin

Structure of the Integument

- Cutaneous Membrane
 - Epidermis
 - Dermis
- Subcutaneous Layer
 - Hypodermis
- Accessory Structures
 - Hair, nails, exocrine glands



Outline

- **Structure and Function**
 - Epidermis
 - Dermis
 - Subcutaneous
- Accessory structures
- Injury and repair
- Diseases and aging

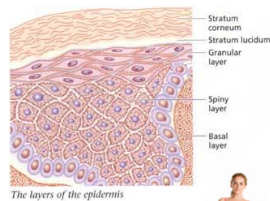


Function

- **Protection:** from impacts, chemicals, infections, and loss of fluids
- **Temp. maintenance:** regulates heat gain/loss
- **Synthesis/storage of nutrients:** makes vitamin D3 and stores lipids
- **Sensory reception:** detect pain, touch, and temp
- **Excretion and secretion:** excretes salts, water, and organic wastes; can produce milk in females

General Structure of the Epidermis

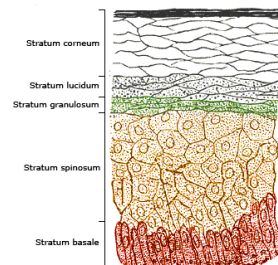
- Stratified squamous epithelium
- Thick skin (palms, soles): 5 layers
- Thin skin (rest of body): 4 layers



The layers of the epidermis

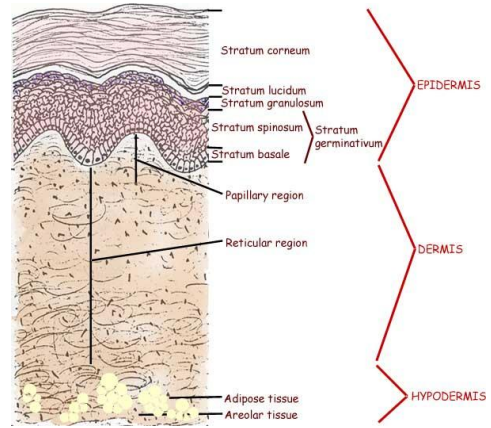
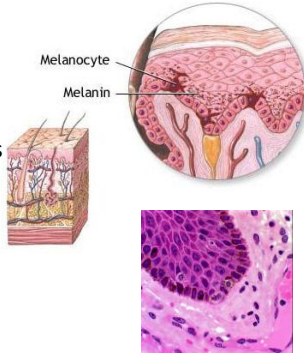
More on the epidermis

- Upper layers dead
- Lower layers living
- Replaced every 35-45 days

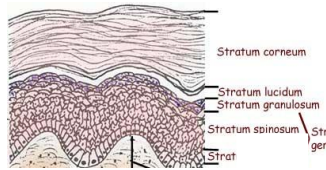


b. Stratum Basale

- Deepest
- 1 cell layer thick
- Nutrition, O₂ via diffusion from tissues below
- Actively dividing
- Contains **melanocytes**



Intermediate Strata

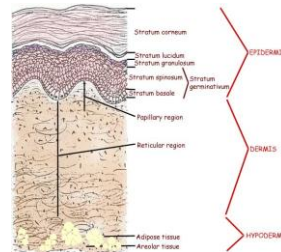


c. Stratum spinosum:

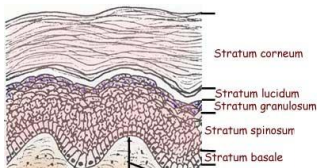
- Several layers
- Still alive, less mitosis
- Flattened, irregular, spine-like projections

Note (add this off to the side):

Basale + Spinosum = Stratum germinativum (growing layers)



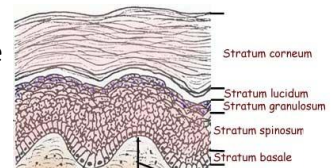
Intermediate Strata



d. Stratum granulosum:

- Thin, 2-3 cell layers thick
- Flatter and thinner
- Keratinization begins here

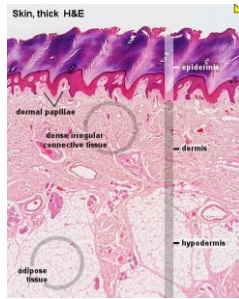
Intermediate Strata



e. Stratum lucidum:

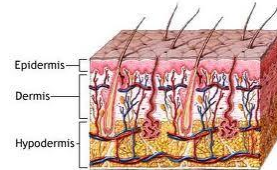
- clear layer
- flattened, dead, densely packed cells
- palms and soles only

The Subcutaneous/Hypodermis



Subcutaneous Layer/Hypodermis

- Mainly adipose (fatty tissue)
- Main function: Insulation
- Infants/elderly: less of this, so more sensitive to cold



Assignment:

- Review wkst