

4

Skin and Body Membranes

PowerPoint® Lecture Slide Presentation by Jerry L. Cook, Sam Houston University



ESSENTIALS OF HUMAN ANATOMY & PHYSIOLOGY

EIGHTH EDITION

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Skin and Body Membranes

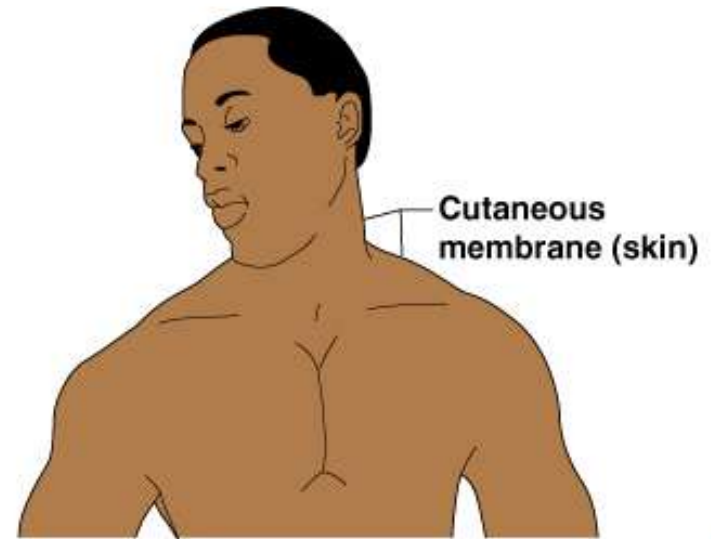
- Function of body membranes
 - Line or cover body surfaces
 - _____ body surfaces
 - _____ body surfaces

Classification of Body Membranes

- Epithelial membranes
 - _____ membrane
 - _____ membrane
 - _____ membrane
- Connective tissue membranes

Cutaneous Membrane

- Cutaneous membrane = skin
 - A _____ membrane
 - Outermost protective boundary
- Superficial epidermis
 - _____
 - _____ epithelium
 - Underlying dermis
- Mostly _____
_____ tissue

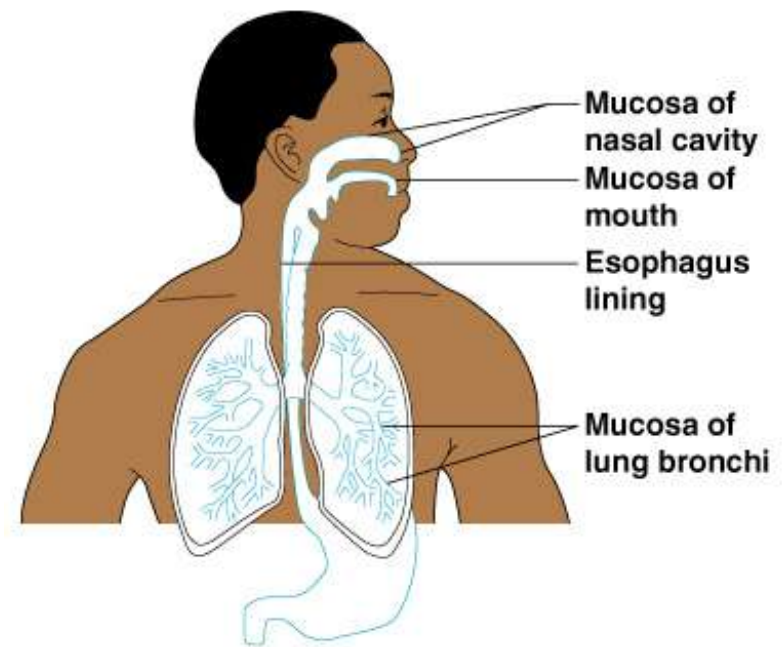


(a) Cutaneous membrane

Figure 4.1a

Mucous Membranes

- Surface epithelium
 - Type depends on site
- Underlying _____
tissue (_____)
- Lines all body cavities
that open to the
exterior body surface
- Often adapted
for _____
or _____



(b) Mucous membranes

Figure 4.1b

Serous Membranes

- Surface _____ epithelium
- Underlying _____ connective tissue
- Lines open body cavities that are closed to the exterior of the body
- Serous layers separated by _____ fluid

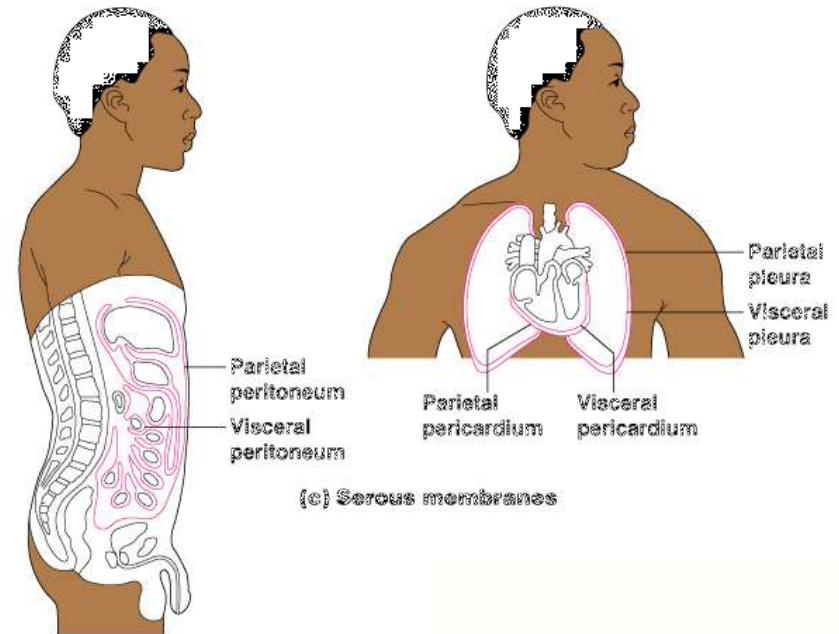


Figure 4.1c

Serous Membranes

- Specific serous membranes

- _____
 - _____
cavity
 - _____
- Around the _____
 - _____
- Around the _____

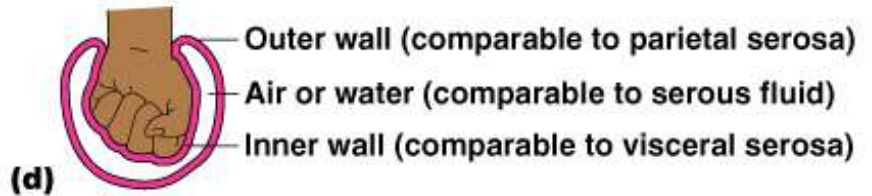


Figure 4.1d

Connective Tissue Membrane

- _____ membrane
 - Connective tissue only
 - Lines fibrous capsules surrounding _____

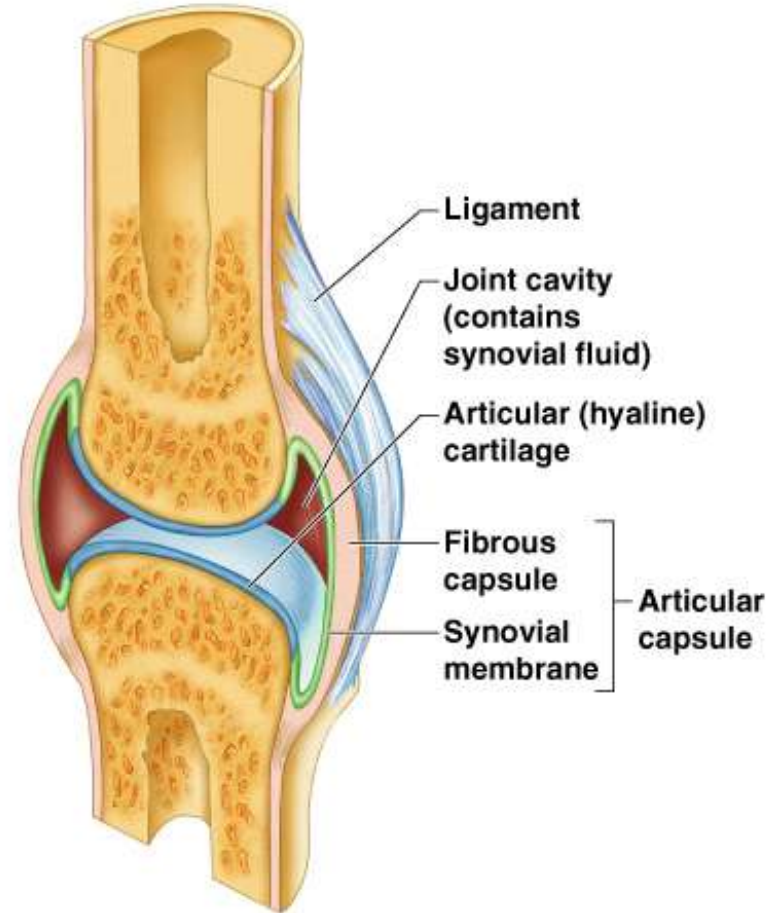


Figure 4.2

Integumentary System

- Skin (_____ membrane)
- Skin derivatives
 - _____ glands
 - _____ glands
 - _____
 - _____

Skin Functions

- Protects deeper tissues from:
 - _____ damage
 - _____ damage
 - _____ damage
 - _____ damage
 - _____
 - _____

Skin Functions

- Aids in heat regulation
- Aids in excretion of _____ and _____ acid
- Synthesizes _____

Skin Structure

- _____ – outer layer
 - Stratified squamous epithelium
 - Often keratinized (hardened by _____)
- _____
 - Dense connective tissue

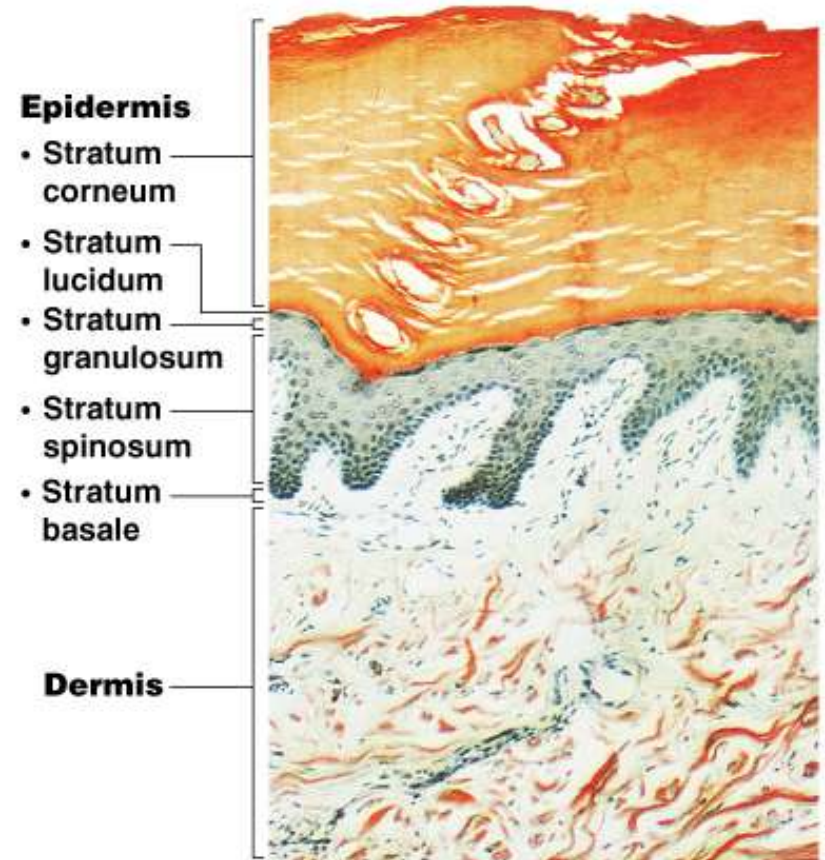


Figure 4.3

Skin Structure

- Deep to dermis is the _____
 - Not part of the skin
 - Anchors skin to underlying organs
 - Composed mostly of _____ tissue

Layer of Epidermis

- _____
 - Cells undergoing _____
 - Lies next to dermis
- _____
- _____

Layer of Epidermis

- _____
 - Occurs only in _____
 - Located- _____
- _____
 - Shingle-like _____

Melanin

- Pigment (melanin) produced by _____
- Color is _____ to _____ to _____
- Melanocytes are mostly in the stratum

- Amount of melanin produced depends upon
_____ and _____

Dermis

- Two layers
 - _____ layer
 - Projections called _____
 - _____
 - Capillary loops
 - _____ layer
 - Blood vessels
 - _____
 - _____

Skin Structure

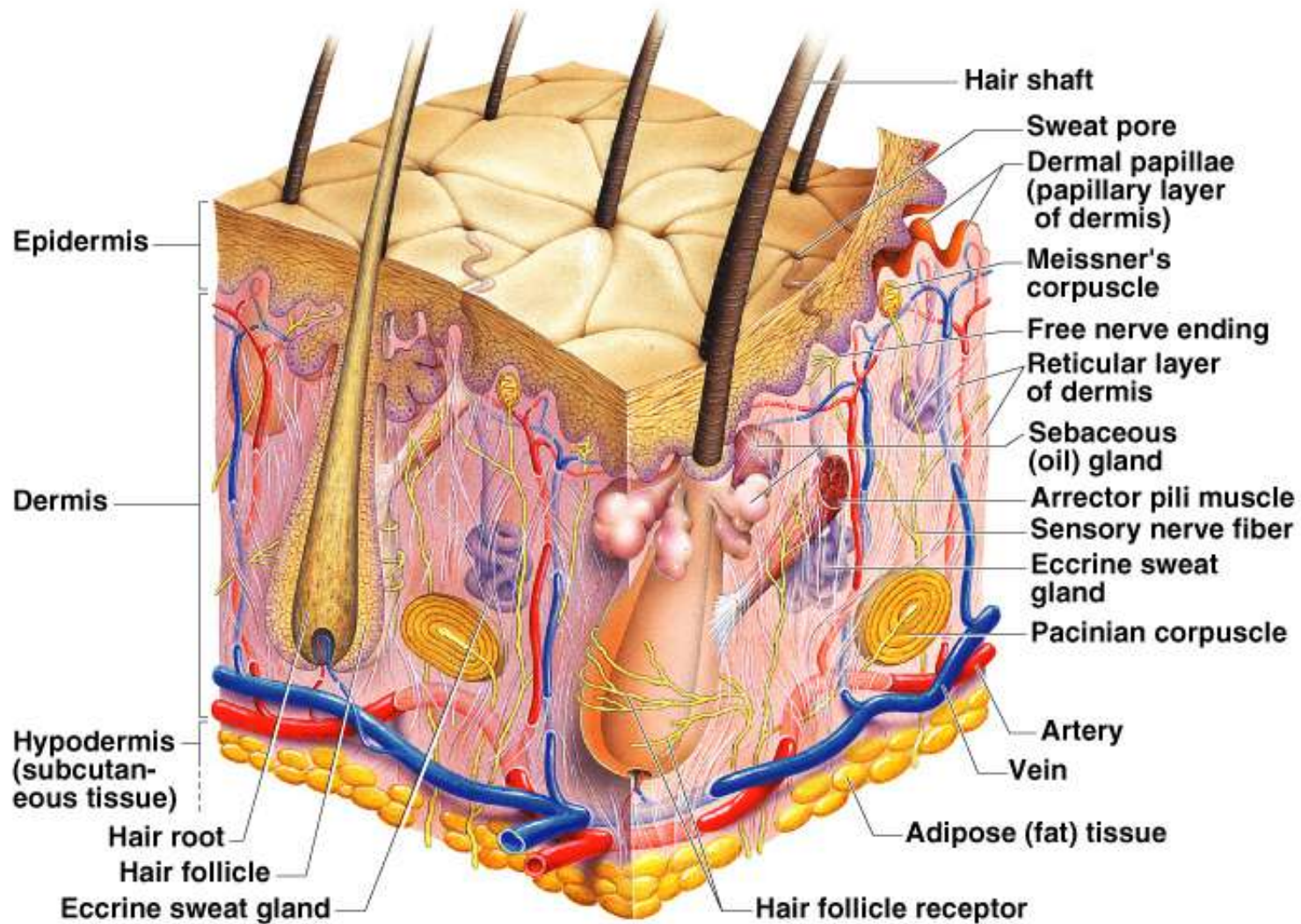


Figure 4.4

Normal Skin Color Determinants

- _____
 - Yellow, brown or black pigments
- _____
 - _____ pigment from some vegetables
- _____
 - _____ coloring from blood cells in dermis capillaries
 - _____ content determines the extent of red coloring

Appendages of the Skin

- _____ glands
 - Produce _____
 - Lubricant for skin
 - Kills _____
 - Most with ducts that empty into _____
follicles
 - Glands are activated at _____

Appendages of the Skin

- Sweat glands
 - Widely distributed in skin
 - Two types
 - _____
 - Open via duct to pore on skin surface
 - _____
 - Ducts empty into hair follicles

Sweat and Its Function

- Composition
 - Mostly water
 - Some metabolic waste
 - Fatty acids and proteins (_____ only)
- Function
 - Helps _____
 - Excretes waste products
 - _____ nature inhibits bacteria growth
- Odor is from associated _____

Appendages of the Skin

- Hair
 - Produced by

 - Consists of hard

 - epithelial cells

 - provide pigment

 - for hair color

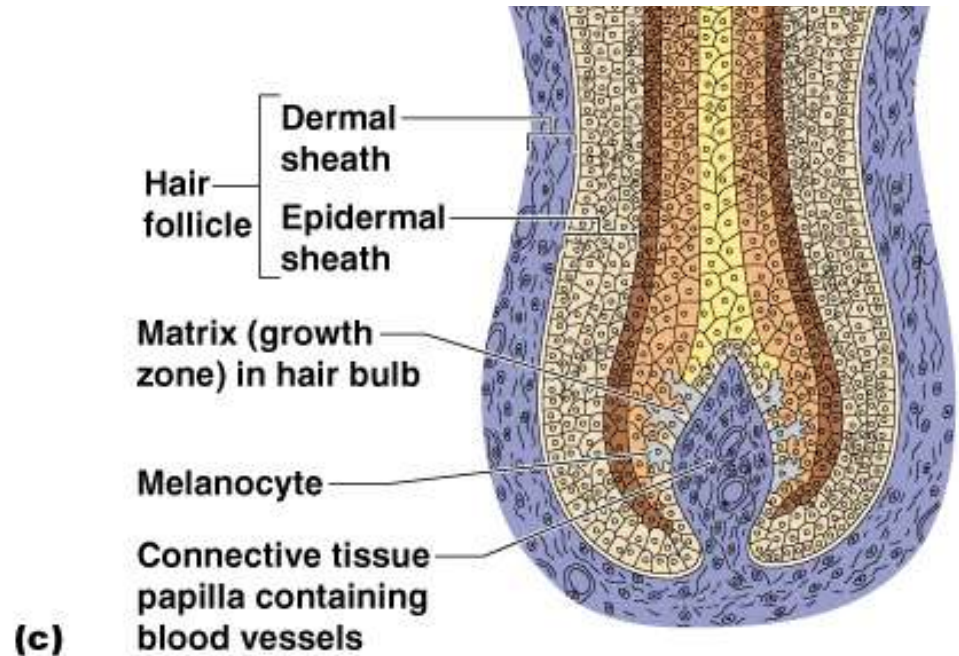


Figure 4.7c

Hair Anatomy

- Central _____
- _____ surrounds medulla
- _____ on outside of cortex
 - Most heavily keratinized

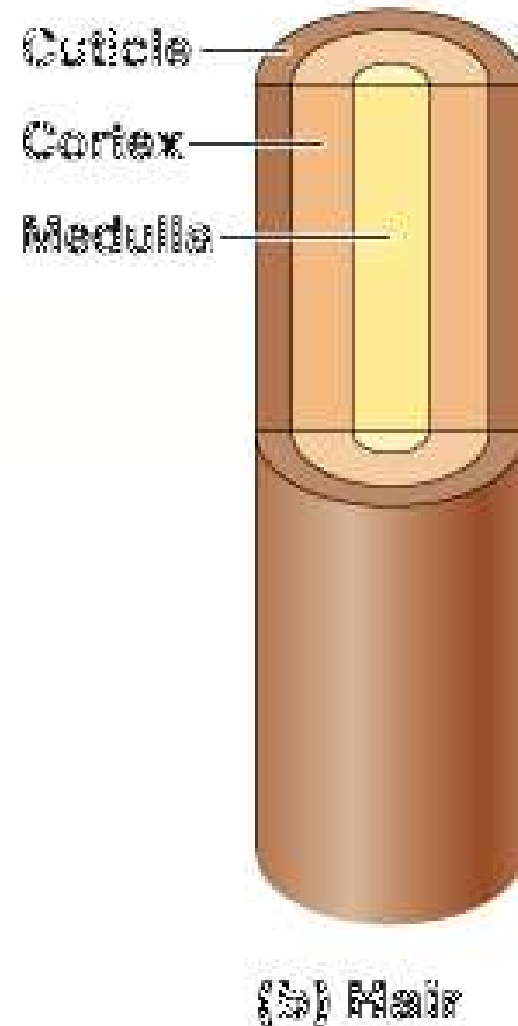
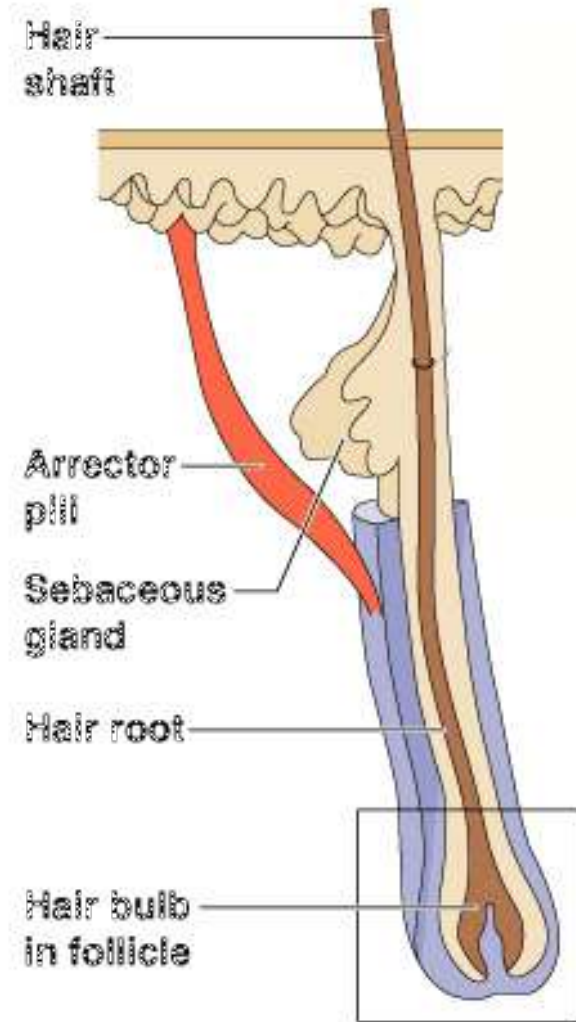


Figure 4.7b

Associated Hair Structures

- Hair follicle
 - Dermal and epidermal sheath surround hair root
- _____
- _____ control
- _____ gland
- _____ gland



(a)

Figure 4.7a

Appendages of the Skin

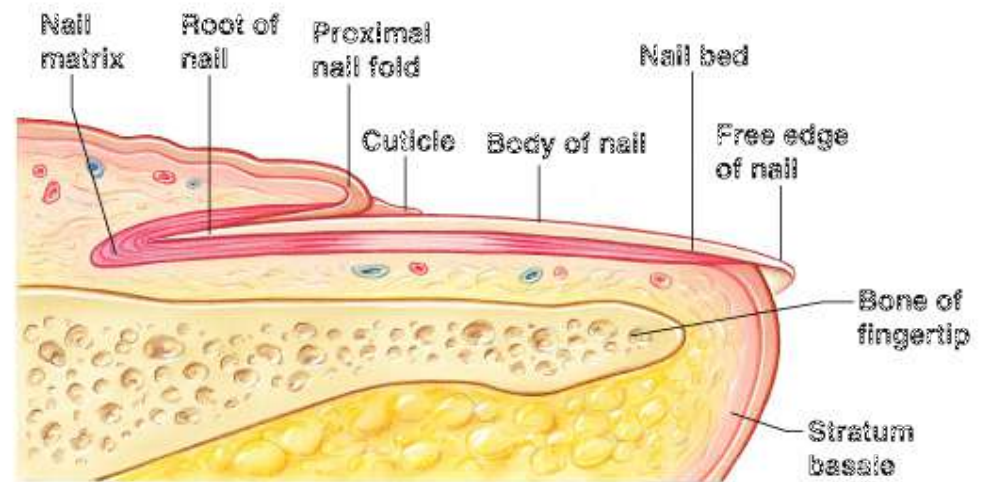
- Nails
 - Scale-like modifications of the _____
 - Heavily keratinized
 - Stratum _____ extends beneath the nail bed
 - Responsible for growth
 - Lack of _____ makes them colorless

Nail Structures

- Free edge
- _____
- _____ of nail
- _____ proximal nail fold that projects onto the nail body



(a)



(b)

Figure 4.9

Skin Homeostatic Imbalances

■ Infections

- _____ = TINEA PEDIS
 - Caused by _____ infection
- Boils and carbuncles
 - Caused by _____ infection
- _____
 - Caused by _____

Skin Homeostatic Imbalances

- Infections and allergies



- Exposures cause allergic reaction



- Caused by _____ infection



- Cause is unknown

- Triggered by _____, _____, and

- _____

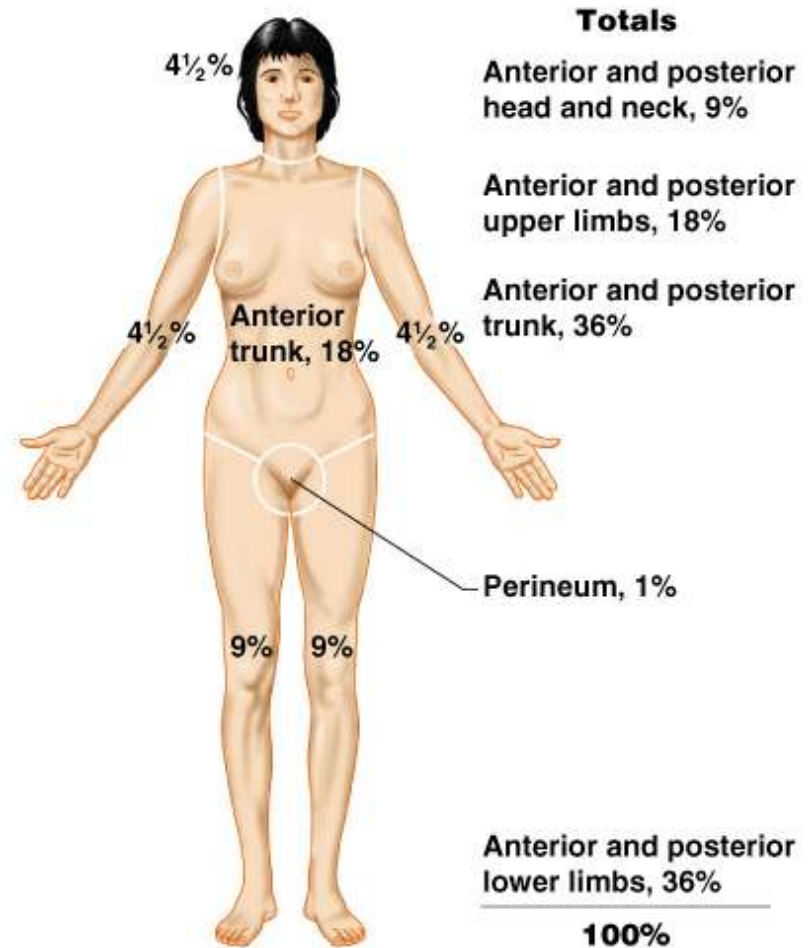
Skin Homeostatic Imbalances

- Burns
 - Tissue damage and cell death caused by _____, _____, UV radiation, or chemicals
 - Associated dangers
 - _____
 - _____
 - _____

Rule of Nines

- Way to _____

- Body is divided into _____ areas for quick estimation
 - Each area represents about _____



(a)

Figure 4.11a

Severity of Burns

- First-degree burns
 - Only _____ is damaged
 - Skin is _____ and _____
- Second degree burns
 - _____ and _____ are damaged
 - Skin is red with _____
- Third-degree burns
 - Destroys entire skin layer
 - Burn is _____ or _____

Critical Burns

- Burns are considered critical if:
 - Over _____ of body has second degree burns
 - Over _____ of the body has third degree burns
 - There are third degree burns of the _____, _____, or _____

Skin Cancer

- Cancer – _____
- Two types
 - _____
 - Does not spread (encapsulated)
 - _____
 - _____ (moves) to other parts of the body
- _____ is the most common type of cancer

Skin Cancer Types

- _____ cell carcinoma
 - Least _____
 - Most common type
 - Arises from _____
- _____ cell carcinoma
 - Arises from _____
 - Metastasizes to _____
 - Early removal allows a good chance of cure

Skin Cancer Types

- Malignant melanoma
 - Most deadly of skin cancers
 - Cancer of _____
 - Metastasizes rapidly to lymph and blood vessels
 - Detection uses _____ rule

ABCD Rule

- A = _____
 - Two sides of pigmented mole do not match
- B = _____
 - Borders of mole are not smooth
- C = _____
 - Different colors in pigmented area
- D = _____
 - Spot is larger than 6 mm in diameter