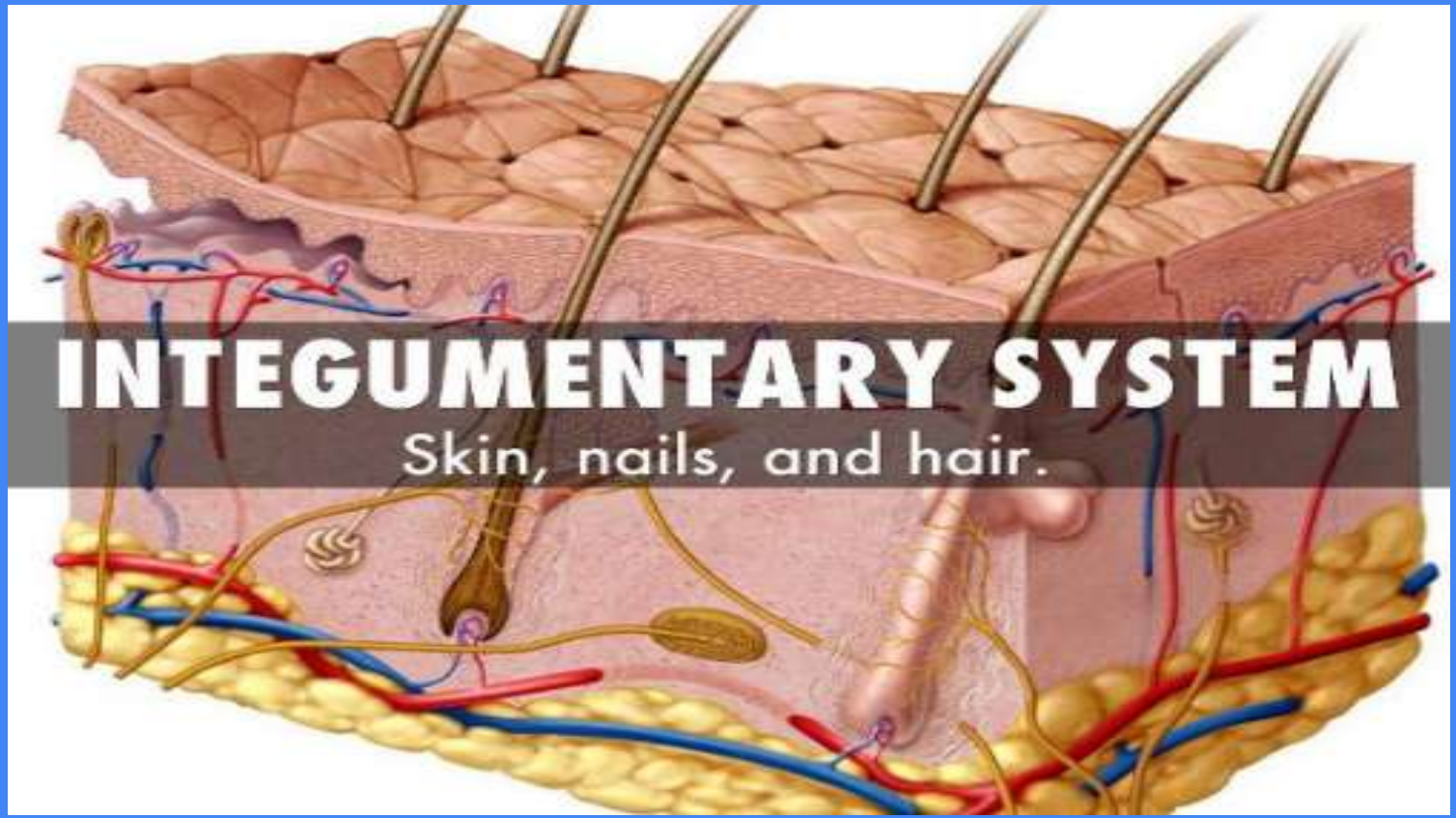

INTEGUMENTARY SYSTEM
Skin, nails, and hair.

Layers and Functions

Layers

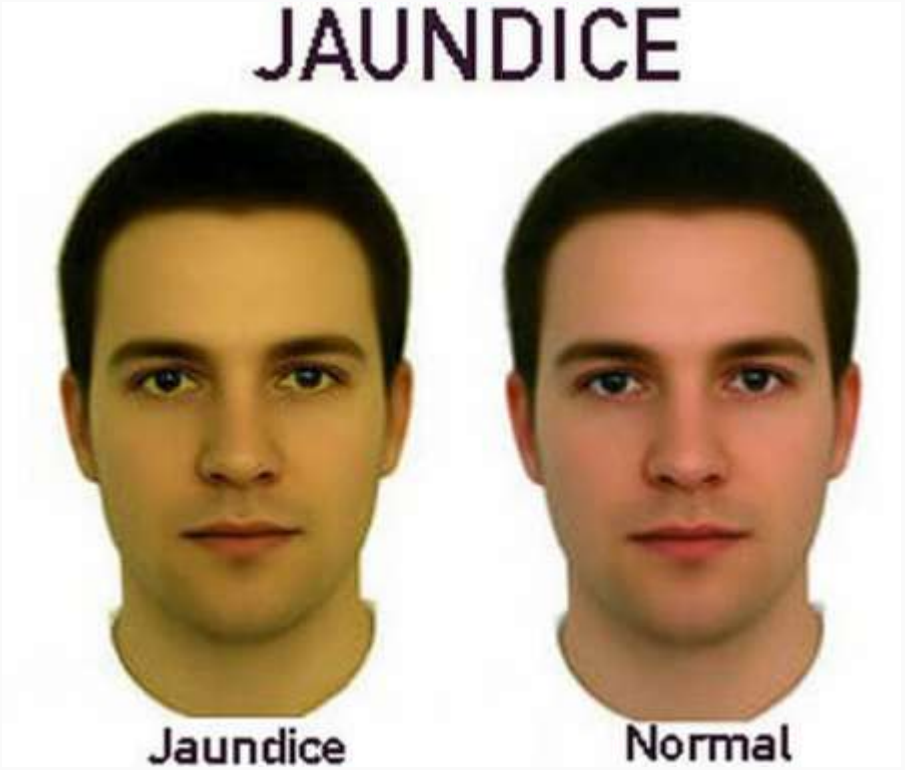
1. **Epidermis**: stratified squamous, avascular
2. **Dermis**: oil, hair, sweat glands found, vascular
3. **Subcutaneous/Hypodermis**: adipose tissue, vascular

Functions

1. Protection
2. Regulate Body Temperature
3. Sensory Receptors
4. Vitamin D Production
5. Excretion/absorption

Skin Color

1. **Cyanosis**: Blue-lack of oxygen
2. **Pallor/Blanching**- pale-low blood flow
3. **Jaundice**- yellow-liver disorder
4. **Bruise**- black, blue-blood clots or tissue hematoma
5. **Carotene**- yellow/orange color
6. **Freckles**- increased melanin production due to UV


JAUNDICE
Jaundice
Normal

Mrs. Morr's Hometown

Skin Appendages

1. **Sebaceous Glands**: secrete oils

Sebum: oil softens skin

Acne: overactive glands (often due to hormones)

Whitehead: blocked by sebum (white blood cell build-up)

Blackhead: whiteheads oxidize, dry, and harden

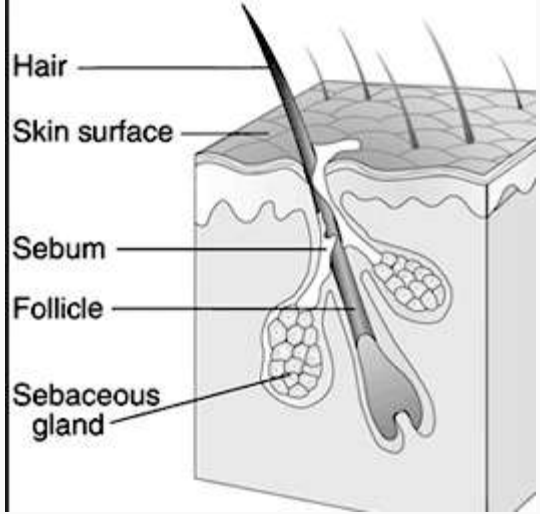
Skin Appendages continued

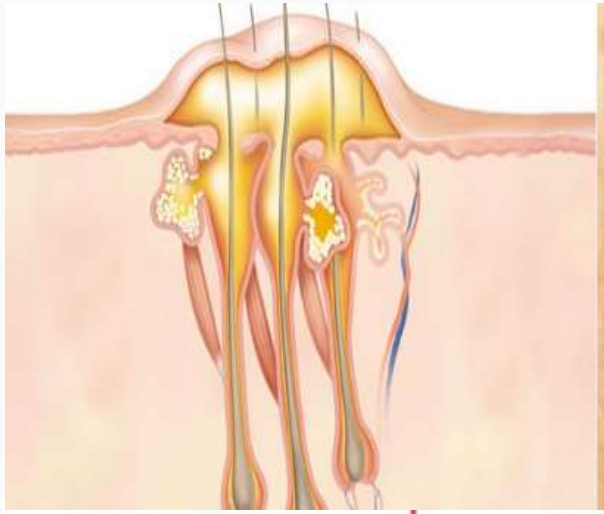
Boil: (furuncle) hair follicle inflammation due to pus and bacteria-caused by Streptococcus bacteria and can spread. Will drain on own and heal within few weeks. Antibiotics may be used.

Carbuncle: cluster of boils

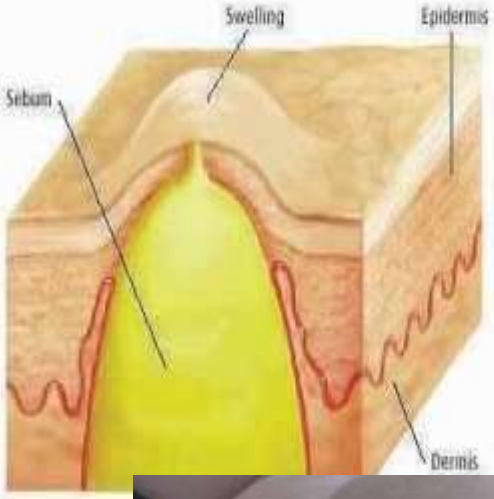
Sebaceous cyst: can form if the duct becomes damaged or blocked

Seborrhea: (cradle cap) yellow, brown crust on head





MILD | MODERATE | SEVERE



Sebaceous cyst

When a sebaceous gland becomes blocked it can fill with a fatty material, forming a cyst.

Skin Appendages continued

2. Sweat Glands:

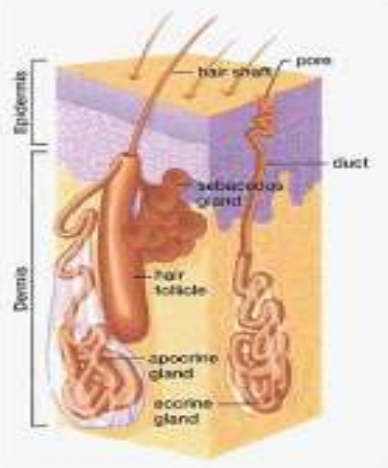
a.) Eccrine: sweat (salt, water, traces of ammonia, urea, lactice acid)

b.) Apocrine: empties fatty acids and proteins into follicles

What's the Difference?

Eccrine Sweat Glands

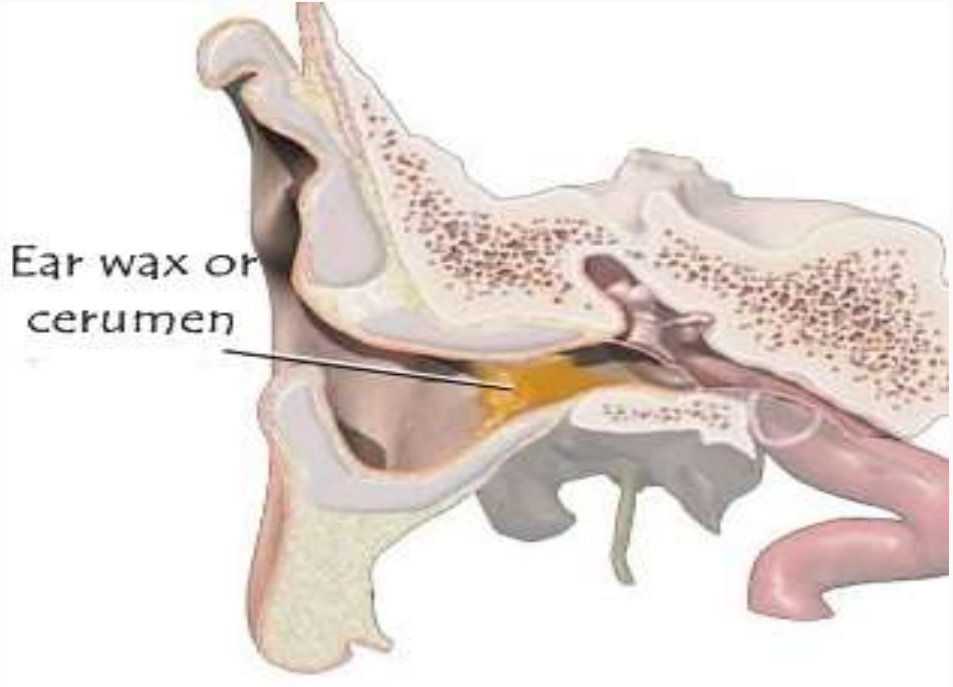
- Much more numerous
- Most abundant on palms, soles & forehead
- Structurally simple:
  - Coiled tubular gland
  - Secretory part lies coiled in dermis
  - Duct opens in pore at skin's surface



Apocrine Sweat Glands

- Most common in armpit & anogenital regions
- Larger than eccrine glands
- Ducts empty into hair follicles
- Apocrine sweat has same composition as normal sweat, however it has fatty acids & proteins which makes it more viscous
  - Odorless, however, when decomposed by bacteria on skin a "Body Odor" is created

3. **Curuminous gland:** ears-crumen (ear wax)



Skin Appendages continued

4. Hair/Nails: hair is everywhere on body except palms of hands, soles of feet, nipples, and lips. You are born with all hair follicles

Hair has 3 main parts

1. Medulla
2. Cortex
3. Cuticle--contains keratin, and undergoes abrasion=split ends

Arector pili muscles contract and cause hair to stand up

Alopecia-hair loss

Gray hair caused by lack of melanin

Nails

Non-living material, modified epidermis, keratin, lunula-crescent shape

Normal pink color

Burns

Tissue damage and cell death due to intense heat, UV, electricity or chemicals

a.) body loses fluids-dehydration

b.)infections sets in

c.)immune system becomes depressed

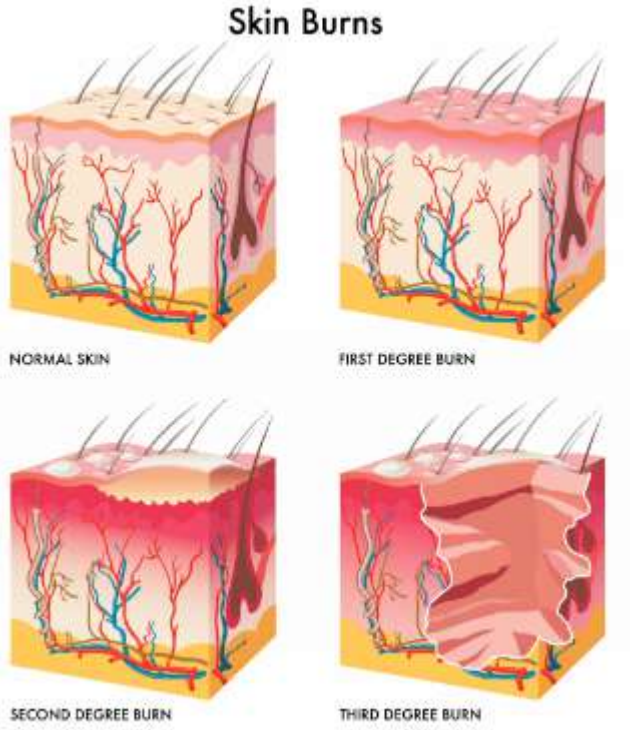
Types of burns

1st degree- red, swollen

2nd degree- red, painful blister affecting epidermis and dermis

3rd--entire thickness burned/charred black, grafting needed, deep tissue affected


Types of Burns
First Degree Burn
Second Degree Burn
ThirdDegree Burn

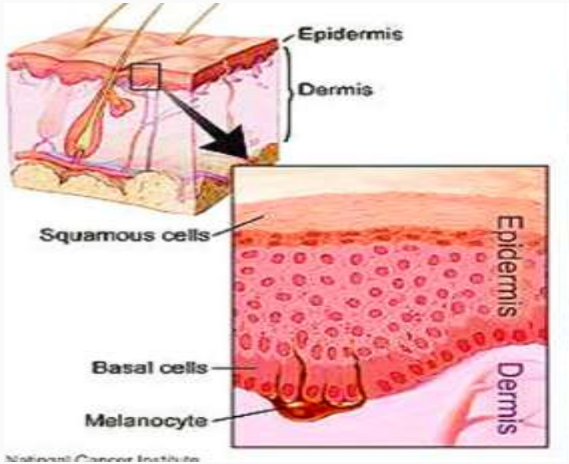

Skin Burns
NORMAL SKIN
FIRST DEGREE BURN
SECOND DEGREE BURN
THIRD DEGREE BURN

Skin Cancer

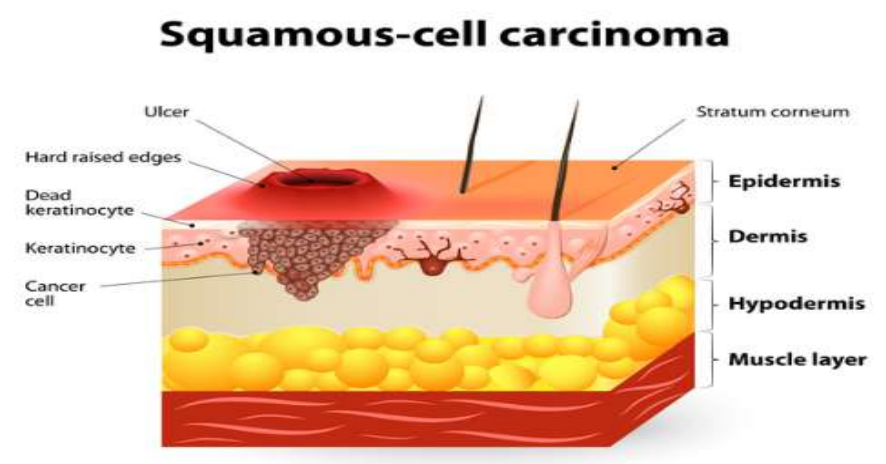
The cause is unknown. Usually overexposure to UV light, skin infections, chemicals or trauma

3 types of skin cancer

1. Basal Cell Carcinoma-least threatening, slow growing, shiny dome-shaped



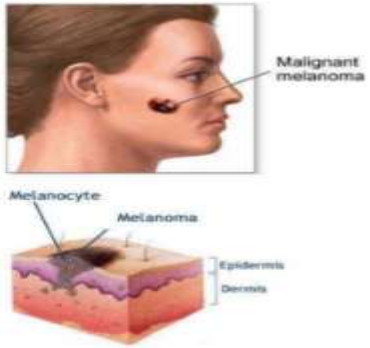
2. Squamous Cell Carcinoma- scaly, red on scalp, ears, hands, and raised border

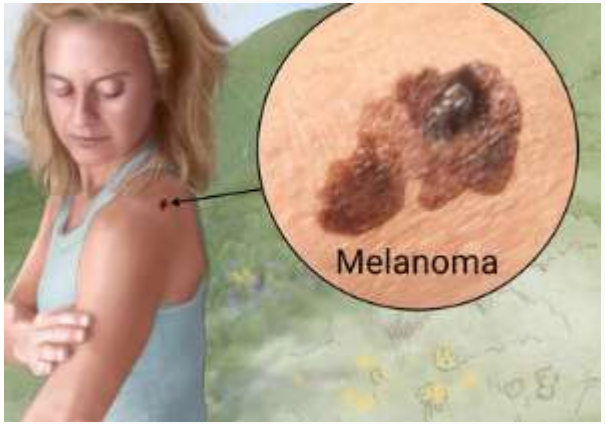


3. Malignant melanoma-spreading brown or black patch

What is Melanoma

- *Melanoma* is a very serious form of skin cancer.
- Melanoma is cancer of the *melanocytes*.
- Melanocytes are located in the *Stratum Basale* and produce *melanin*.





“ABCD” rule for recognizing skin cancer

1. **Asymetry**-sides don’t match
2. **Border irregularity**-border isn’t smooth
3. **Color**-different colors throughout
4. **Diameter**- larger than the size of a pencil eraser

Cosmetic Anti-Aging Treatments for skin

1. Microdermabrasion- tiny crystals under pressure exfoliate dead skin cells
2. Chemical peel- glycolic acid that blisters skin and it peels off
3. Laser resurfacing- removes top layer of skin
4. Dermal fillers- collagen that fills in wrinkles
5. Botox- botulism
6. Facelift, brow lift, neck lift-skin removal