**IS - Appendages and Imbalances**

**The Integumentary System**

**Appendages & Imbalances**

**Nails**
- **function**: protective covering on the ends of fingers and toes
- **structure**
  - nail plate = nail covering skin
  - nail bed = skin under the nail
  - lunula = whitish, thickened, half-moon shaped region which covers the most actively growing area of nail
- **Did you know...**
  - thumbnail grows the slowest
  - middle finger grows the fastest

**Hair Follicles**
- **hair** covers the whole body EXCEPT for the palms of hands, soles of feet, lips, nipples, and some external reproductive organs
- **hair** = dead epidermal cells that originate in a hair follicle (dermis)
- **arrector pili muscle** = smooth muscle fibers attached to each hair; contraction causes hair to stand up = “goosebumps” emotionally upset or cold

**Hair Color**
- determined by genes that direct the type and amount of pigment melanocytes produce
  - lots of melanin = dark
  - intermediate = blonde to brown
  - no pigment = white
  - trichosiderin = red
  - mix of pigment and no pigment = grey
**Sebaceous Glands**
- a.k.a. oil glands
- specialized epithelial cells associated with a hair follicle
- holocrine gland that secretes an oily mixture of fatty materials and cellular debris called sebum
- sebum helps keep hair soft, pliable, and waterproof
- acne can result from clogged sebaceous glands

**Sweat Gland - Eccrine**
- a.k.a. sudoriferous glands
- found all over the body
- "sweat" to decrease body temperature
- "sweat" releases water
  - if you're thirsty, you've already lost enough water to compromise some body functions.....DRINK WATER!!!!
- "sweat" releases salt, but not enough to lower salt levels in the body
- "sweat" also releases trace amounts of vitamin C which helps prevent bacterial growth on skin
  - HOW?...by making skin acidic

**Sweat Glands - Apocrine**
- located in armpit and groin
- secrete sweat + fatty acids
  - fatty acids = body odor (BO)
  - fatty acids attract bacteria that breakdown the fatty acids (byproduct of this metabolism makes you smell)
- Did you know...the average square inch of skin holds 650 sweat glands, 20 blood vessels, 60,000 melanocytes, and more than 1,000 nerve endings

**What is a Burn?**
- burn = damage to skin or other body parts caused by extreme heat, flame, contact with heated objects, or chemicals
- categorized as first, second, or third degree
- treatment depends on depth, area, and location of burn
  - additional factors - materials burned into or onto skin

**Degrees of Severity**
- **First Degree**
  - superficial burn
  - epidermis intact and functioning properly
- **Second Degree**
  - partial-thickness burn
  - damage extends into dermis; most painful blisters
  - w/o epidermis victims begin to lose fluids, heat, and the ability to block infection
- **Third Degree**
  - full-thickness burn
  - both dermis and epidermis destroyed
  - nerve ending destroyed;
  - NO feeling of pain
  - lose fluid, heat, and ability to block infection
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RULE OF NINES
- body surface area varies with height and weight
- assessment tool used to determine the approximate extent of body surface area burned
- body divided into 11 regions
- each region accounts for 9% of skin surface area
  = 99%
- remaining 1% accounts for the groin

RULE OF NINES - 11 BODY REGIONS
- head
- right arm
- left arm
- chest
- abdomen
- upper back
- lower back
- right thigh
- left thigh
- right leg (below the knee)
- left leg (below the knee)

WHAT IS A SUNBURN?
- sunburn = a burn to the skin caused by ultraviolet (UV) radiation
- sun gives off UVA & UVB rays
  both are damaging to skin
  UVA = aging
  UVB = burns
- symptoms
  redness and irritation
  blistering
  overexposure can lead to shock (vital organs do not function properly) and even death (sun poisoning)

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