INTEGUMENTARY SYSTEM (Ch. 3)
Medical Terminology

I. Overview
   A. integument = “skin”
      derm/o or cutane/o
   B. true system
      skin + subcutaneous tissue + glands + hair + nails
      (an organ)
   C. Major functions
      1. protection (from physical injury and pathogens)
      2. sensory perception
      3. thermoregulation

II. Skin = 2 layers, not 3 as text ⇒ Fig. 3.1, p. 100
   A. Epidermis
      --thin, outer layer of skin
      --stratified squamous epithelium
         "layer" "scale"
      --cells constantly renewed from basal layer (stratum germinativum)
      --pushed superficially, accumulate keratin → fibrous, intracellular protein
      --dead, squamous cells at surface (stratum corneum)
      --basal layer includes melanocytes
         -Produce melanin (="black") → absorb UV, protect from cancer
   B. Dermis
      --deep to epidermis
      --connective tissue layer
      --primarily collagen → fibrous, extracellular protein: makes skin tough,
         but NOT elastic (text is misleading!)
      --vascular, sensory organs, glands, hair

III. Subcutaneous tissue or Hypodermis
   --primarily lipocytes (adipocytes)
   --considered part of skin by dermatologists; but NOT by anatomists

IV. Accessory organs
   A. Hair = trich/o or pil/o
      --grows from base within hair follicle

      furuncle (boil) – *Staphylococcus* inflammation of follicle
      carbuncle = cluster of furuncles
      pilomotor muscle = “goosebumps”
B. Nails = onych/o
   onychophagia = “nail-biting”

C. Sebaceous glands
   --secrete oil = sebum, steat-
   Why? → Flexible hair/skin
   --infection = acne

D. Sudoriferous (sweat) glands = hidr/o
   --most produce watery fluid (hidropoiesis) for thermoregulation

--Physical exam of skin is a powerful diagnostic tool.

V. Lesions → KNOW Fig. 3.2
   - any area of pathologically altered skin
   eruption: appearance of a lesion

A. Primary → arise from previously normal skin [Fig. 3.3]
   1. Flat, nonpalpable (changes in skin color)
      < 1 cm = macule/macula [ex.: freckle]
      > 1 cm = patch [ex.: vitiligo]

   2. Elevated, palpable, solid → classified based on size/depth
      < .5 cm = papule [ex.: nevus/“mole”]
      > 1 cm, epidermis only = plaque
      > 1 cm, into dermis = nodule
      > 1-2 cm = tumor
      wheals = localized swellings (edema = fluid between cells, not within a cavity)

   3. Elevated, fluid-filled cavities
      < .5 cm = vesicle
      > .5 cm = bulla (both vesicles & bullas = “blisters”)
      pus-filled = pustule [ex.: pimple]

B. Secondary → result in changes from primary lesions [Fig. 3.4]
   1. Loss of skin surface
      erosion = no bleeding
      ulcer = deeper, may bleed
      excoriation = “scratch”
      fissure = linear crack

   2. Material on skin surface
      scale = flake of epidermis [ex.: dandruff]
      crust = dried residue

C. Vascular lesions [Fig. 3.5] → blood vessels, not skin proper
   cherry angioma – typically on trunk
   telangiectasia/spider angioma – typically on face, neck, chest
D. Purpuric lesions/Purpuras (= purple) or “bruises”
subcutaneous hemorrhages, i.e. bleeding under skin (ruptured blood vessels)
- petechiae or ecchymosis
- flat pinpoints or larger

E. Scar formations
- cicatrix vs. keloid – thick overgrowth

F. Epidermal tumors
- nevus (“mole”) – overactive melanocytes
dysplastic if precancerous
- verruca (“wart”)

VI. Diagnostic terms
A. Burns
- 1st degree → epidermis only
- 2nd degree → epidermis & dermis (blisters)
- 3rd degree → epidermis, dermis & subcutaneous or deeper

B. More on cancer
- malignant cutaneous neoplasm = “skin cancer”
carcinoma → derived from epithelial cells
Ex.: squamous cell carcinoma (SCC)
- basal cell carcinoma (BCC) → most common
malignant melanoma
sarcoma → derived from connective tissue or muscle
Ex.: Kaposi’s sarcoma: tumor of blood vessel walls
- characteristic of AIDS

VII. Therapeutic drugs
Antimicrobials → broad term for anything that kills/inhibits growth of microorganisms (bacteria/fungi/parasites)
- antibiotics vs. antiseptics
  - based on a naturally-occurring compound
  - Ex.: iodine
- Ex: penicillin, amoxicillin

VIII. Operative terms
cautery – any agent/device for scarring/burning/cutting skin (or other tissues) by means of electricity/heat/cold/chemicals
A. electrosurgical procedures (arbitrary distinctions)
- electrocautery
electrodessication
fulguration
-all use electricity to destroy tissue, followed by curettage/debridement
  - scraping w/ curette → removal of dead tissue
B. Skin grafting
   1. autograft – own skin
   2. heterograft (xenograft) – animal skin (pig)
      ↩️“other, different”
   3. homograft (allograft) – from another person
      ↩️“other, different”