MUSCULOSKELETAL SYSTEM (Ch. 4)
Medical Terminology

I. Anatomically 2 separate systems
   Skeletal, including articulations
   +
   Muscular
   Skeletal
   Cardiac & smooth

II. Bones → Know Fig 4.1
    NOTE THAT BONE NAMES ARE NOT INCLUDED IN THE SUMMARY OF TERMS LIST (p.185 ff)
    + ADDITIONAL SKELETAL COMBINING FORMS (website)

A. Axial skeleton → in blue
   Skull & hyoid bone
   +
   Sternum & ribs
   +
   Vertebral column = stack of vertebrae
   --Know types & number of each (Fig. 4.3)
   Coccyx = 3-5 fused
   Sacrum = 5 fused
   NRF xiphoid process, manubrium

B. Appendicular skeleton → Fig. 4.1 in tan
   1. Pectoral girdle → 4 bones = 2 clavicles + 2 scapulae
   2. Upper limb: humerus + radius + ulna
      (thumb) (pinky)
      Phalanx = 1 bone of a digit
      Phalanges = >1
      ( don’t confuse with dactyl/o = entire digit)
   3. Pelvic girdle – 2 coxal bones ("ossa coxae") = ilium + ischium + pubis
      "bone" "hip"
      Pelvis ≠ pelvic girdle
      "basin"
      ↓
      2 ossa coxae 2 ossa coxae only
      +
      Sacrum & coccyx
      ↓
      Complete bony ring

   4. Lower limb: femur + tibia + fibula
      NRF trochanter, calcaneus, iliac crest
III. Bone structure – Know Fig. 4.4
   A. Long bone (know all except epiphyseal line)
      + endo/periosteum, metaphysis (growth plate)
   B. Bone shapes (4) + sesamoid (within tendons)
      long, short, flat, irregular

IV. Joints = Articulations  (arthr-/articul/o)
   A. Synovial joints include small fluid-filled cavity  (Fig. 4.5)
      • Often have bursae = small sacs of synovial membrane that reduce friction
      • ligaments → connect bone-to-bone
   B. Cartilaginous joints lack cavity
      Ex.: intervertebral disc → Fig. 4.6
      CORRECT p. 156: nucleus pulposus is NOT the fibrocartilagenous portion

V. Muscles ("my/o, muscul/o, myos/o")
   A. Three types
      1. Skeletal = rhabdomy-
         “rod”
         • striated & voluntary
      2. Cardiac – "myocardium"
         • striated, branched, involuntary
      3. Smooth = leiomy-
         “smooth”
         • nonstriated, involuntary
         "Visceral" muscle
   B. Skeletal muscles wrapped in layers of c.t called fascia & attached to bones by bands of c.t. called tendons (muscle → bone).
      -- origin vs. insertion
   C. Terminology for muscle movements → Fig. 4.9
      --based on anatomical position
      --learn in antagonistic pairs
      Abduction ↔ adduction: FIX DEF.: …body’s midline
      --fix inversion/eversion: sole of foot turns inward/outward. Fig. is poor!
      --correct plantarflexion → depress distal foot (at ankle joint, not toes)
      dorsiflexion → elevate distal foot
      --fix “rotation” → turning around an axis,
      not circular movement (= circumduction)
   D. Naming skeletal muscles – NRF Fig. 4-2
      Gives information about location, size or other
      Ex.: extensor carpi radialis longus
VI. Body planes & directional terms → Know Fig. 4.7
   A. Anatomical position is point of reference
   B. Planes serve as reference for movements
      - note alternate names
   C. Directional terms
      - learn in pairs
      - correct “medial”, should be median? = (midsagittal)

VII. Diagnostic terms
   A. Arthritis
      3 Major forms
      1. osteoarthritis (OA, DJD) – Fig. 4.11
      2. rheumatoid arthritis (RA) – Fig. 4.12
      3. gouty arthritis
   B. Correct (p. 166): bunion caused by skeletal and soft-tissue malformation, not inflammation of bursa
   C. Fractures (Fx) → KNOW Terminology in Fig. 4.13a
      • open vs. closed
      • simple vs. complex
   D. Tumors
      • Don’t confuse leiomyoma = "uterine fibroids" → benign
        with
        leiomyosarcoma = highly malignant tumor w/smooth muscle cells
        "flesh"
      • Don’t confuse myoma with myeloma or with myelography or electromyography
        "marrow" or "spinal cord"

VIII. Diagnostic tests & procedures
   → Review imaging, Ch. 2

IX. Operative terms
   • open reduction, internal fixation (ORIF) → Fig. 4.20
   • closed reduction, external fixation (Why don’t they abbreviate this?!)  
      3 types:
      1. casting
      2. splinting (less support but adjustable)
      3. traction (Tx → don’t confuse with “treatment”)  
   vs.
   • closed reduction, percutaneous fixation (Fig. 4-24)

✓ orthosis (braces) vs. prosthesis (artificial limbs)
   (Fig. 4-25) (Fig. 4-26)