

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 ("os coxae") = ilium + ischium + pubis
"bone" "hip"

Pelvis ≠ pelvic girdle

"basin"

↓

2 os coxae 2 os 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) + endo/periosteum, metaphysis
- 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 malformation, not inflammation of bursa

C. Fractures (Fx) Fig. 4.13

- 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
vs.
- 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)