

## Ch. 1 continued

### A. Directional terms

- a. Medial
- b. Lateral
- c. Median
- d. Dexter - "Dexter thinks he's right"
  - i. Right side
- e. Sinister
  - i. Left side
- f. Prone
  - i. Lying face downward; stomach
- g. Supine - "you could eat soup"
  - i. Lying on the back; face up
- h. Dorsal
  - i. Back
- i. Ventral
  - i. Belly/abdomen/front
- j. Palmar
  - i. Palm of hand
- k. Volar
  - i. Palm of hand & sole of foot
- l. Plantar
  - i. Sole of foot
- m. Fibular
  - i. Fibular (lateral) side of leg
- n. Tibial
  - i. Tibial (medial) side of leg
- o. Radial
  - i. Radial (lateral) side of arm
  - ii. In anatomical position
  - iii. Thumb side = radial side
- p. Ulnar
  - i. Ulnar (medial) side of arm
- q. Scapular plane
  - i. In line with normal resting position of scapula as it lies on posterior rib cage, movements in scapular plane are in line with scapular, which is at angle of 30 to 45 degrees from frontal plane.

### B. Alignment Terms

- a. Anteversion
  - i. Abnormal or excessive rotation **forward** of a structure, such as femoral anteversion - often occurs in the femur; toes in
- b. Retroversion
  - i. Abnormal or excessive rotation **backward** of a structure, such as femoral retroversion - often occurs in the femur; toes out

- c. Kyphosis
  - i. Increased curving of spine of the spine outward or backward in the sagittal spine – upper back; thoracic area
- d. Lordosis
  - i. Increased curving of the spine inward or forward in the sagittal plane – lower back; lumbar area
- e. Scoliosis
  - i. Lateral curving of the spine
- f. Recurvatum
  - i. Bending backward, as in knee hyperextension
- g. Valgus
  - i. Outward angulation of the distal segment of a bone or joint, as in knock-knees
- h. Varus
  - i. Inward angulation of the distal segment of a bone or joint, as in bowlegs

### C. Planes of Motion

- a. Imaginary 2D surface through which a limb or body segment is moved
- b. Cardinal Planes of Motion – not directly down center/median
  - i. 3 basic traditional
    - 1. In relation to the body, not in relation to the earth
  - ii. Anteroposterior or Sagittal Plane – Flexion & extension always occur here
    - 1. Divides body into equal, bilateral segments
    - 2. It bisects the body into 2 equal symmetrical halves or a right & left half
    - 3. Ex: sit-up
  - iii. Lateral or Frontal Plane
    - 1. Divides the body into anterior & posterior halves
    - 2. Ex: jumping jacks
  - iv. Transverse or Horizontal or Axial
    - 1. Divides body into (top) superior & (bottom) inferior halves when the individual is in anatomical position
    - 2. Ex: spinal rotation to left or right
- c. Diagonal Planes of Motion
  - i. High Diagonal
    - 1. Upper limbs at shoulder joint
    - 2. Anything that works with upper body & comes across the body
    - 3. Overhand skills
    - 4. Ex: baseball pitch
  - ii. Low Diagonal
    - 1. Upper limbs at shoulder joints
    - 2. Underhand skills
    - 3. Ex: discus thrower
  - iii. Low Diagonal

1. Lower limbs at the hip joints
2. Ex: Kickers & punters

#### D. Axes of Rotation

- a. For movement to occur in a plane, it must turn or rotate about an axis as referred to previously
- b. The axes are named in relation to their orientation
- c. Frontal, coronal, lateral or mediolateral axis
  - i. Done in sagittal plane
- d. Sagittal or anteroposterior axis
  - i. Frontal plane
  - ii. Abduction & adduction
  - iii. Runs anterior/posterior
- e. Vertical, long, or longitudinal axis
  - i. Down through top of head & is at a right angle to transverse plane of motion
  - ii. Runs superior & inferior
  - iii. Internal & external rotation
- f. Diagonal or oblique axis
  - i. Also known as the oblique axis
  - ii. Runs at a right angle to the diagonal plane
  - iii. Axis will move with the motion, but will always stay at 90 degrees

#### E. Body Regions

- a. Review in text
- b. Axial
  - i. Cephalic (head)
  - ii. Cervical (neck)
  - iii. Trunk
    1. Thoracic (thorax), Dorsal (back), Abdominal (Abdomen), & Pelvis (Pelvis)
- c. Appendicular - appendages
  - i. Upper limbs
    1. Shoulder, arms, forearm, & manual (hand)
  - ii. Lower limbs
    1. Thigh, leg, & pedal (foot)
- d. Skeletal Function
  - i. Protection of heart, lungs, brain, etc
  - ii. Support to maintain posture
  - iii. Movement by serving as points of attachment for muscles and acting as levers
  - iv. Mineral storage such as calcium & phosphorus
  - v. Hemopoiesis - in vertebral bodies, femurs, x, ribs, sternum
    1. Process of blood cell formation in the red bone marrow
- e. Types of bones
  - i. Long - femur, humerus