The Appendicular Skeleton
• Includes bones of the:
  – Limbs
  – Girdles, attach the limbs to the axial skeleton
  – Ligaments
The pectoral girdle & upper limbs

• Bones of the pectoral girdle include:
  – Scapula & the Clavicle
• The sternoclavicular joint is the only direct connection to axial skeleton
• Muscles and tendons loosely hold the pectoral girdle in place
Glenohumeral joint

- The loose glenohumeral (scapula / humerus) joint has a wide range of flexibility but less stability
- The glenohumeral joint is a commonly dislocated joint
Fig 7.2
The pelvic girdle & lower limbs

- Bones of the pelvic girdle include:
  - Two coxal bones
    - Each coxal bone is made of three bones
      - Ilium, ischium, & pubis
  - The symphysis pubis joins the coxal bones on the anterior side

- Pelvis = 2 coxal bones, sacrum, coccyx, symphysis pubis
• The sacroiliac joint connects the sacrum to the coxal bones on the posterior side (strongest joint in the body)
The female pelvis has:

Wider pelvic inlet & pelvic outlet

Less anterior curve to the sacrum & coccyx

Broad low pubis

Ilia that project farther laterally

Broader pubic arch

Fig 7.13
Fig 7.12

(a) Superior view

(b) Lateral view

(c) Inferior view

- Pelvic inlet
- Pelvic outlet
- Pelvic brim
- False pelvis
- True pelvis
- Ischial spine
Knee injury

- Occurs when foot is planted flat on ground
- Blow on lateral side of the knee hinge joint causes medial side of joint to widen tearing ligaments
- Terrible triad:
  - Medial collateral lig.
  - Medial meniscus
  - Ant. Cruciate lig.
• Ligaments of the knee are mostly avascular ergo slow to heal from injury
• Surgery is need in most cases
Ankle injury-Inversion-eversion injury

- Inversion injury-
- Forces plantar surface medially
- Talus is shoved into the medial malleolus of tibia
- Talus & calcaneus are forced away from the lateral malleolus of fibula
• Torn or stretched-
• Calcaneofibular ligament &/or
• anterior. & posterior Talofibular ligament
• Eversion injury-
• Forces plantar surface laterally
• Talus is shoved into the lateral malleolus of fibula (fracture to lateral malleolus)
• Talus & calcaneus are forced away from the medial malleolus of tibia
• Talus may be driven between fibula & tibia forcing bones apart & tearing interosseus membrane
• Torn or stretched-deltiod ligament
Scapula

(a) Costal (anterior) surface
(b) Lateral view
(c) Posterior surface
Clavicle
The surgical neck is a common site of fracture on the humerus.
Ulna
Radius
(a) Right wrist, anterior (palmar) view
Metacarpals numbered 1 – 5, lateral to medial
Phalanges numbered 1 – 5, lateral to medial
ilium
ischium
pubis
tibia
fibula
patella
The talus articulates with the tibia.
Metatarsals
numbered 1 – 5,
medial to lateral
phalanges

numbered 1 – 5,
medial to lateral
Ligaments of the appendicular skeleton

• Chapter 8
Pectoral girdle

- Anterior sternoclavicular ligament
- Interclavicular ligament
- Sternal end of clavicle
- Manubrium of sternum
- 1st rib
- Clavicle
- Subclavius muscle
- Costoclavicular ligament
- Costal cartilages
- 2nd rib

Pectoral girdle
Rotator cuff tendons
Deepens the sock for the head of the humerus
Elbow joint

(a) Diagrammatic medial view

(b) Medial view
Hip joint

(c) Posterior view

(b) Anterior view
Ligamentum capitis femoris

(a) Lateral view
Knee joint
Ankle joint