The Thoracic Cage

- 7 true ribs
- 3 false ribs
- 2 floating ribs
- Clavicle = collarbone
- Manubrium
- Sternum
- Xiphoid Process
- 12 thoracic vertebrae (later)
Role of the Thoracic Cage

- Surrounds and protects thoracic cavity and its associated organs
- Supports the shoulder girdle

Clavicle

- Connects the arm(s) to the body
- Forms two important joints:
  1. Sternoclavicular joint (medial articulation with sternum at clavicular notch)
  2. Acromioclavicular joint (lateral articulation with acromion of scapula)
**Sternum**

- Located at centre of thorax
- Connects to ribs via cartilage at costal notches or facets
- Protects lungs, heart, blood vessels from physical trauma

**Sternum**

- Suprasternal / jugular notch: superior border of sternum
- Palpated as one of several tests for aortic aneurisms
- Xiphoid process: Cartilage-based extension of sternum (inferior point)
- Ossified in adults
Scapula

More on the scapula

- Located on posterior aspect of thoracic cage
- Connects humerus with clavicle
- Coracoid process
- Acromion process
- Spine of scapula
- Fossas: subscapular, supraspinous
- Borders: medial and lateral
- Angles: superior and inferior
Features of the Scapula

- **Coracoid process**: attachment site for numerous ligaments and muscles
- Below lateral aspect of clavicle
- So-called “Surgeon’s Lighthouse”: (surgical approaches to joint occur LATERAL to CP to avoid major neurovascular structures medial to CP)
- **Acromion process**: summit of shoulder; overhangs/protects glenoid cavity (socket), forms AC joint

More features

- **Scapular spine**: Separates supra- and infraspinous fossa, is a muscle attachment site, easily found, often associated with rotator cuff muscles
- **Subscapular, supraspinous, infraspinous fossa**: hollow or depressed areas in this case located largely by their names (supraspinous = above the spine)
- Sites for muscle beds
Vertebral Column

☐ 24 vertebrae
☐ Sacrum
☐ Coccyx
☐ Intervertebral discs
☐ C-1 = Atlas
☐ C-2 = Axis
☐ S-1 – S-5 = fused
☐ Coccygeal vertebrae (tailbone) is 3-5 fused vertebrae

Spinal Curvatures

☐ Why does our spine have a curved shape?

☑ Try to explain what might cause the 4 different curvatures.

Fig 6-16 Martini 3rd Ed.
Spinal Curvatures

- Primary Curvatures: form during fetal development as organs develop
  - Thoracic and Sacral
- Secondary Curvatures: form after birth while learning to crawl and stand
  - Cervical and Lumbar

Fig 6-16 Martini 3rd Ed.

Atlas & Axis (C1 & C2)

- Form a pivot joint that allows the head to move side to side
- Different than other vertebrae
- Articulate with occipital condyles
Typical Vertebra: Superior View

- Vertebral body bears the weight
- Spinous processes are posterior
- Vertebral foramen surrounds the spinal cord

Another look...
Typical Vertebra: Lateral View

Vertebral body

Transverse process

Spinous process

Intervertebral disc

Anterior

Vertebrae: Regional Differences

Cervical:
- Small bodies
- Bifid spinous processes
- Transverse foramina
- Smallest

Thoracic:
- Heart shaped bodies
- Blade-like spinous processes pointing inferiorly
- Midsized

Lumbar:
- Kidney shaped LARGE bodies
- Thick, short spinous processes
- Largest

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Consider…

- Palpate major landmarks of scapula.
- Palpate clavicle
- Palpate C, T, and L vertebrae
- Brainstorm some of the major variations and/or complications with these structures
- How does the spinal column act/react during exercise? High vs. low impact? Flexion vs. extension?