ANATOMY

• Spine
  • Body
  • Disc
  • Joints
• Ligaments
• Muscles
The Spine

- Three Primary Curves
  - Cervical lordosis
    - 7 vertebrae
  - Thoracic kyphosis
    - 12 vertebrae
    - 12 rib attachments
  - Lumbar lordosis
    - 5 vertebrae
The Vertebrae

- Body
- Facets (joints)
- Spinous process
  - Ligament and muscle attachments
- Transverse process
  - Ligament and muscle attachments
- Houses the spinal cord
The Disc

• Annulus
  • Cartilaginous rings

• Nucleus Pulposus
  • Hydrophilic mucoid tissue when young but replaced by fibrocartilage as we age

• Shock Absorbers
• Starts to dehydrate as early as 20-25 yrs
Facets (Joints)

- Allow movement of the spine\(^2\)
  - *Cervical upper spine* (between skull and spine) rotation is the greatest movement
  - *Cervical lower spine* moves more into flexion and extension with loss of rotation
  - *Thoracic spine* is relatively stiff due to rib attachments
Facets (Joints) continued

• Allow movement of the spine\textsuperscript{2}
  • \textit{Lumbar spine} moves most freely into flexion and extension, with less side-bending and finally \textit{very minimal rotation}
  • Minimal weight bearing on facets unless bending backward\textsuperscript{1}
Facet Joints in Motion

Vertebral Body

Facet Joints

Discs

Flexion (Bending Forward)

Extension (Bending Backward)
Ligaments

- Connects bone to bone
- Checks motion – stabilizes the spine
Muscles

• Also provides stability – core stabilizers
  • Transverse abdominus & obliques
  • Multifidus
  • Quadratus lumborum
• Provide movement – global muscles
  • Erector spinae
  • Gluteal (buttock) muscles
  • Rectus and oblique abdominals