

THORACOLUMBAR SPINES

Characteristic features of a typical thoracic vertebra:

- Presence of costal facets on body (**N.B.: all thoracic vertebrae**)
- Presence of costal facets on transverse process (**N.B.: all thoracic vertebrae EXCEPT T11 & T12**)
- Body: heart-shaped
- Foramen: circular
- Spine: directed downward
- Superior articular facets: directed backward
- Inferior articular facets: directed forward

Characteristic features of a typical lumbar vertebra

- Absence of costal facets on body
- Absence of costal facets on transverse process
- Body: kidney-shaped
- Foramen: triangular
- Spine: directed backward
- Superior articular facets: directed medially
- Inferior articular facets: directed laterally

Joints between vertebral bodies: Intervertebral discs:

- Type: secondary cartilaginous
- Length: $\frac{1}{4}$ of length of vertebral column
- Structure: outer annulus fibrosus (fibrocartilage) + inner nucleus pulposus (gelatinous material: water + collagen fibers)
- Presence: between all vertebral bodies **EXCEPT**: between C1 & C2 + sacrum + coccyx

- Function: shock absorber
- Clinical: **rupture of** annulus fibrosus leads into **herniation of** nucleus pulposus and **pressure on** nerve roots

Ligaments between vertebral bodies: anterior & posterior

longitudinal ligaments: extend from skull to sacrum, permit small amount of movement

- Anterior longitudinal ligaments: stronger, attached to bodies + discs
- Posterior longitudinal ligaments: weaker, attached to borders of discs only

Joints between vertebral arches: between articular processes of adjacent vertebrae

- Type: synovial, plane

Ligaments between vertebral arches:

- Ligamentum flavum: connects adjacent **laminae**
- Intertransverse ligament: connects adjacent **transverse processes**
- Interspinous ligament: connects adjacent **spines**
- Supraspinous ligament: connects **tips of adjacent spines**

Movements of thoracolumbar spines:

- Types: flexion, extension, lateral flexion, rotation
- Thoracic region: **restricted range of movement** in general, rotation is **most** extensive movement
- Lumbar region: flexion, extension & lateral flexion are extensive, rotation is **least** extensive

Fifth lumbar vertebra (L5):

- Largest vertebra
- Very thick transverse process
- Responsible for lumbosacral angle
- Most common site for spondylosis