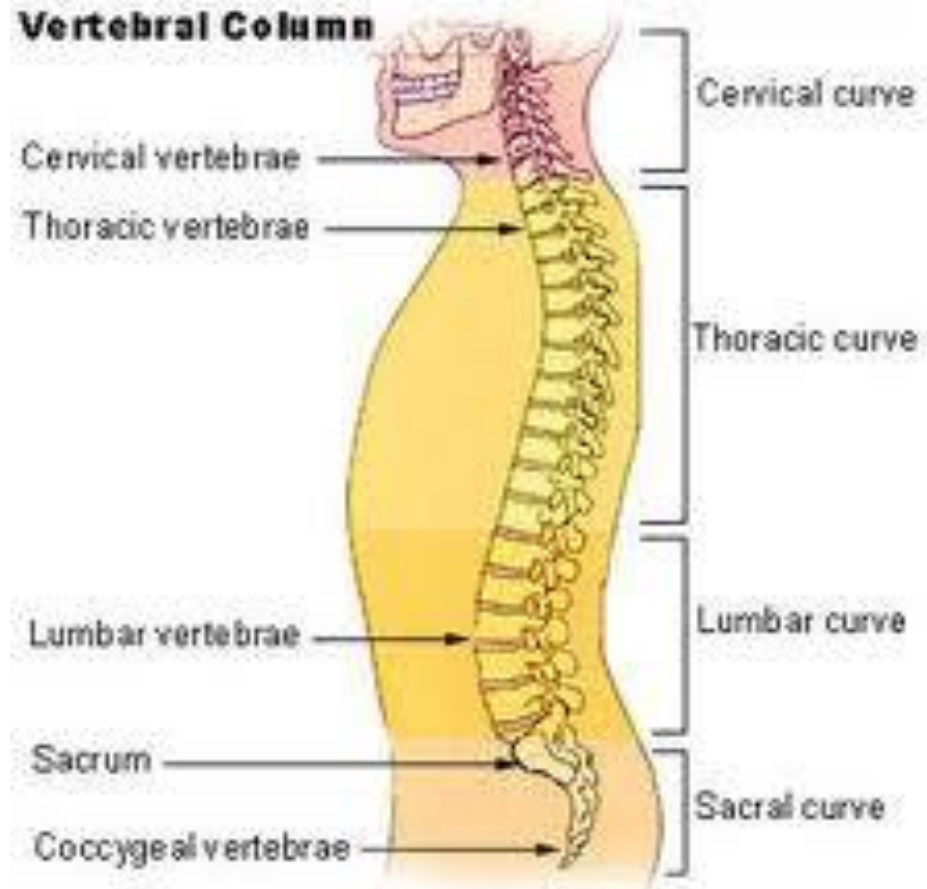


The Vertebral Column

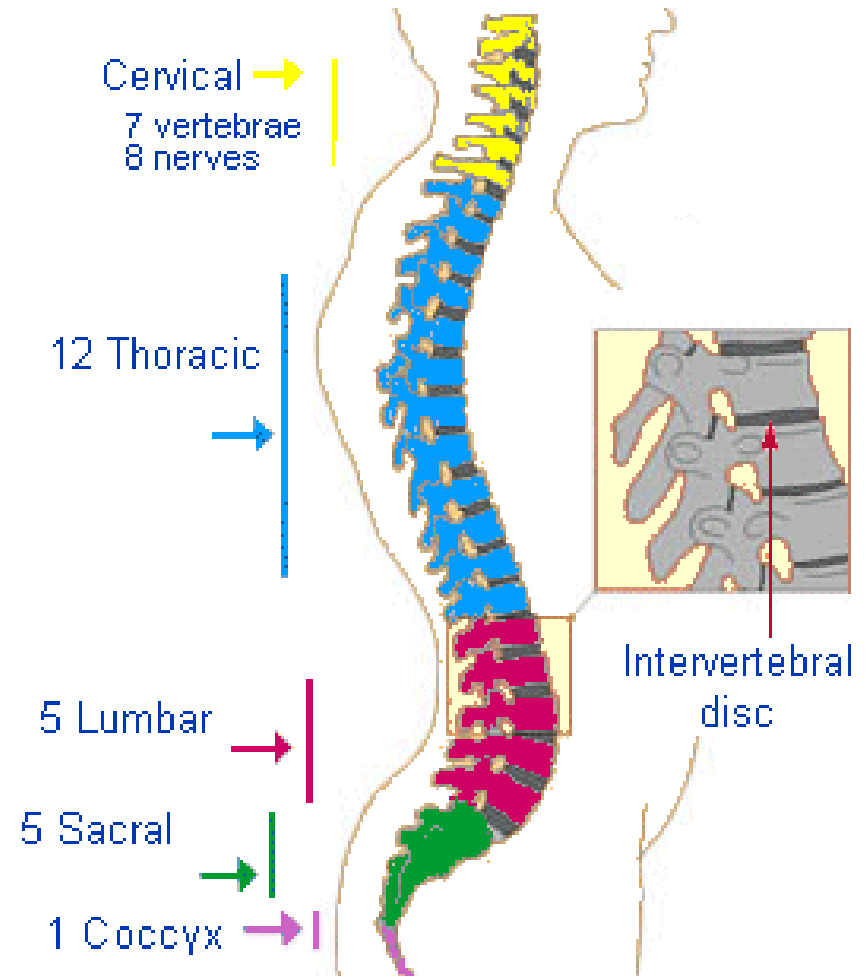
Vertebral Column

- ▶ Formed from 26 irregular shaped bones
- ▶ Supports the trunk
- ▶ Transmits the weight of the trunk to the lower limbs
- ▶ Surrounds and protects the spinal cord
- ▶ Provides attachment sites for the ribs and muscles of the neck and back



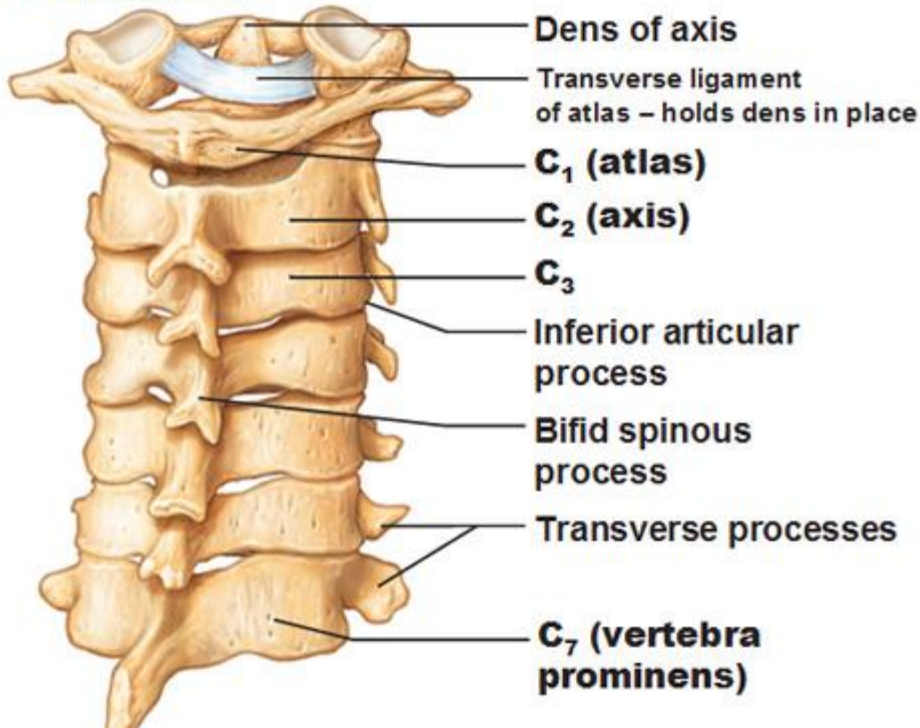
Vertebral Column

- ▶ 5 Sections
 - Cervical–7
 - Thoracic–12
 - Lumbar–5
 - Sacrum–5 fused
 - Coccyx–4 fused



Cervical Vertebrae

Cervical Vertebrae



Lateral view of a cervical vertebra.

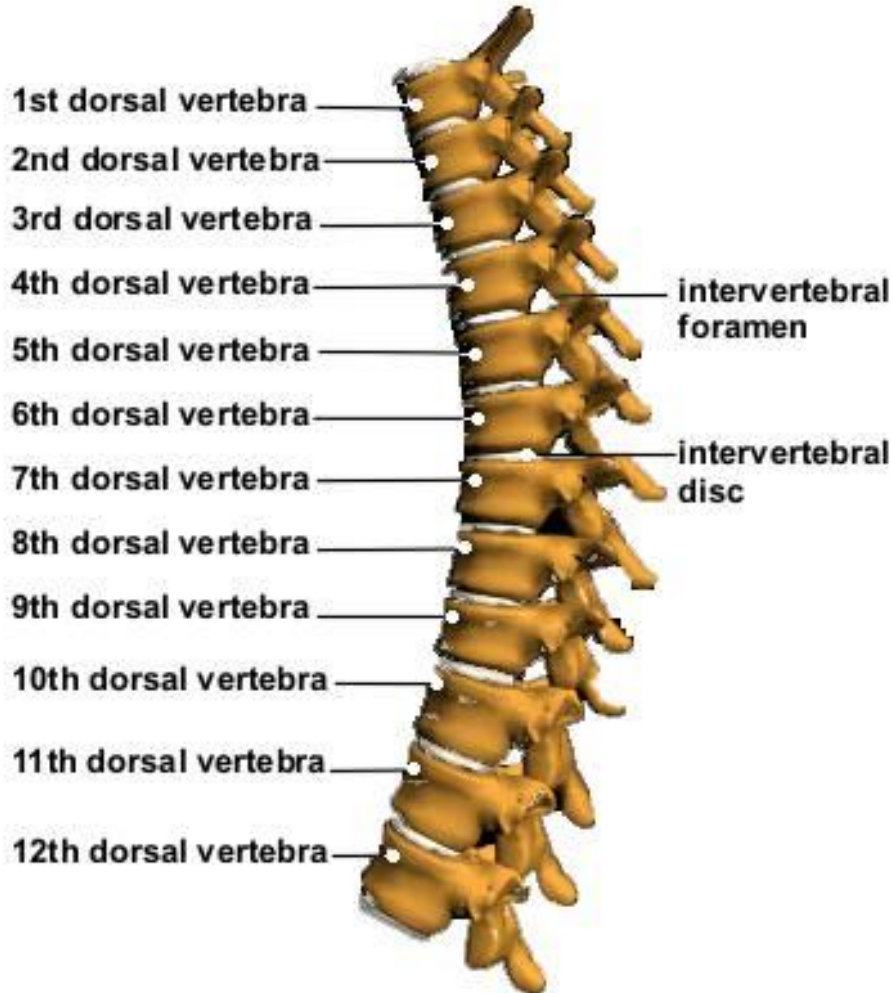


Superior view of a cervical vertebra.

Thoracic Vertebrae

Thoracic Vertebrae

The Thoracic Spine



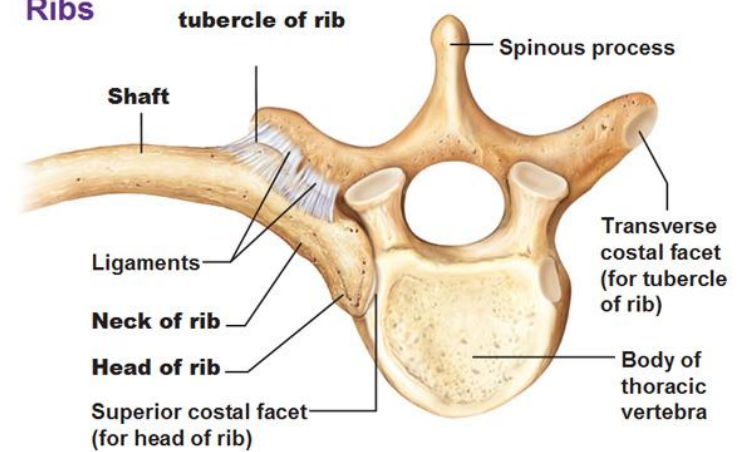
Axial (Overhead) View



Lateral (Side) View

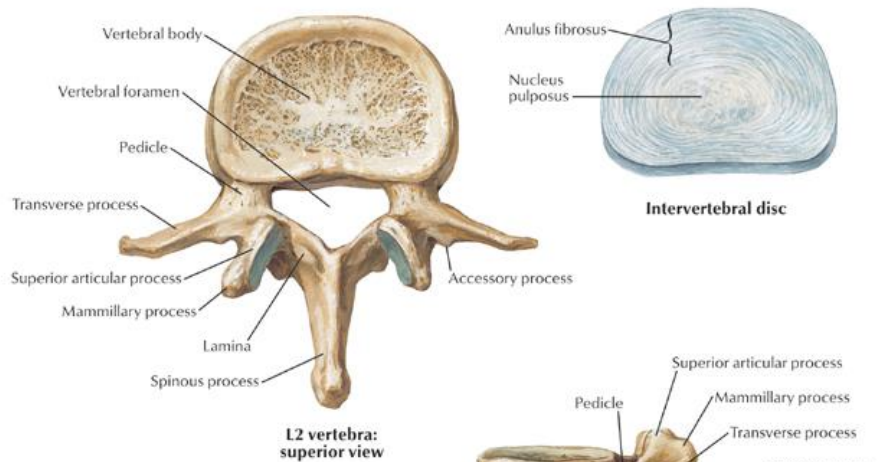


Ribs

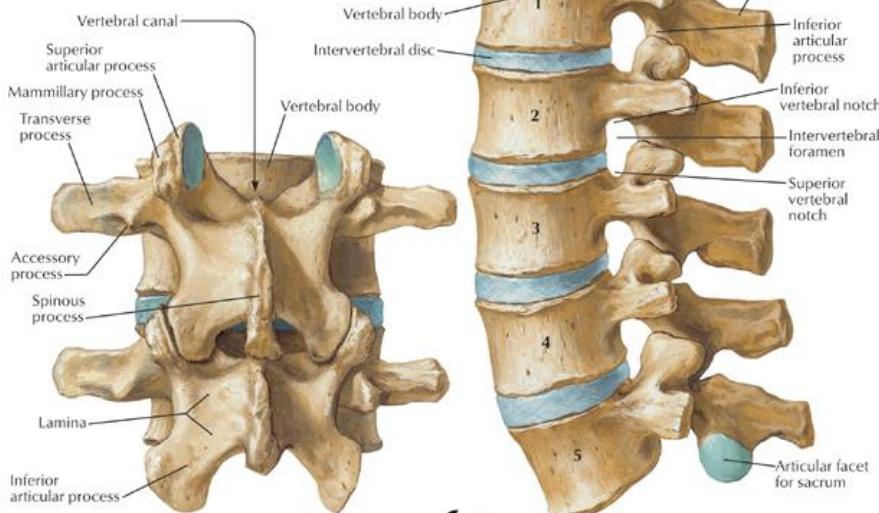


(c) Superior view of the articulation between a rib and a thoracic vertebra

Lumbar Vertebrae



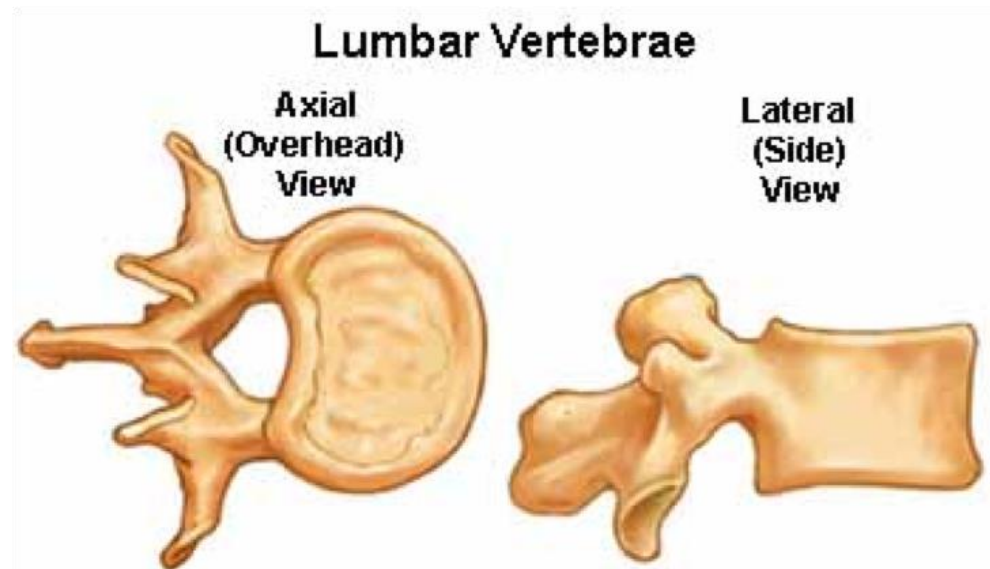
L2 vertebra: superior view



L3 and L4 vertebrae: posterior view

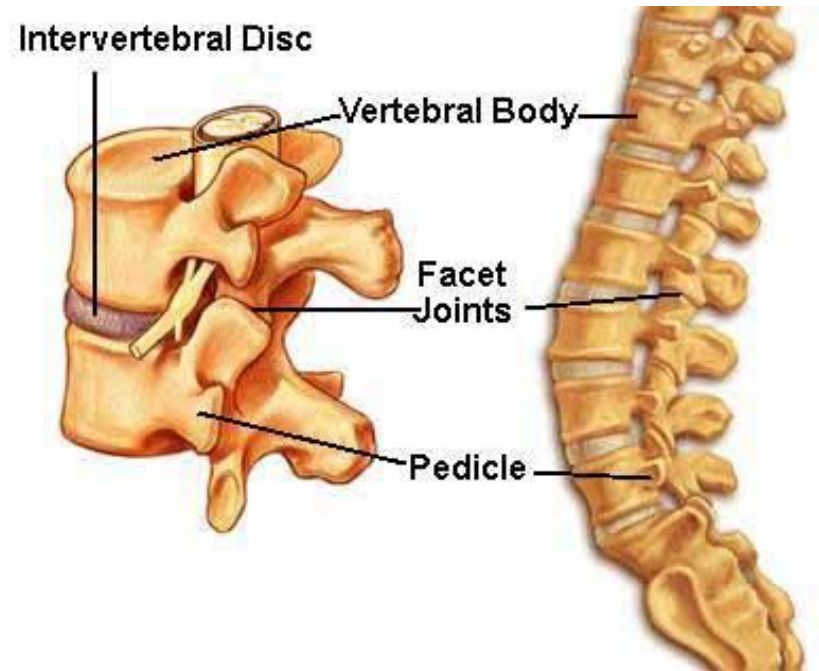
Lumbar vertebrae, assembled: left lateral view

F. Netter
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 1997, 2011



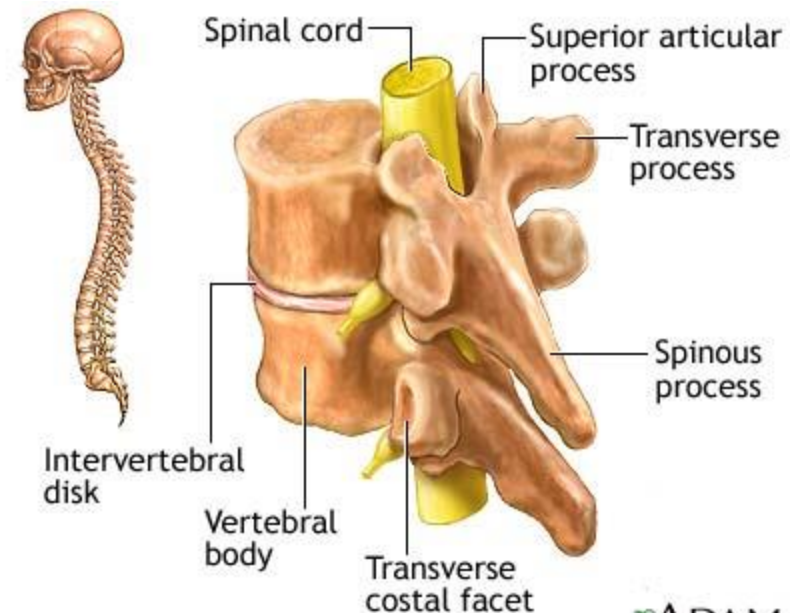
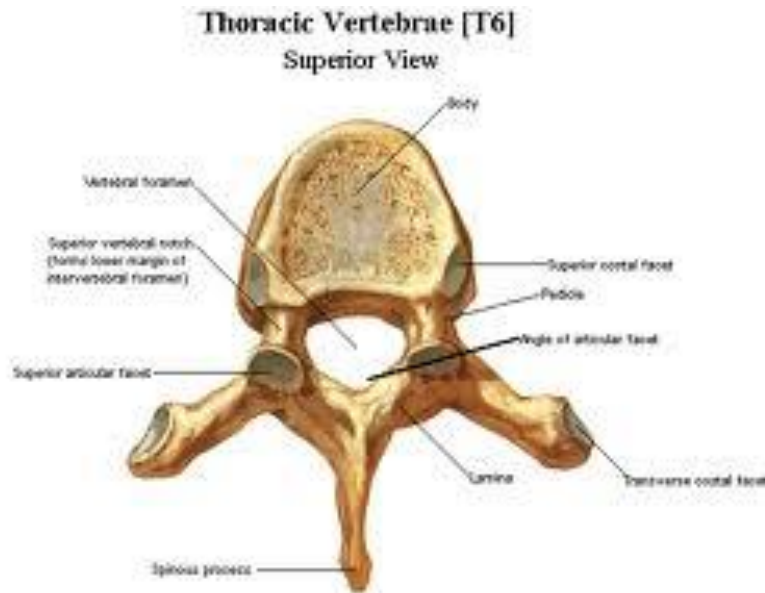
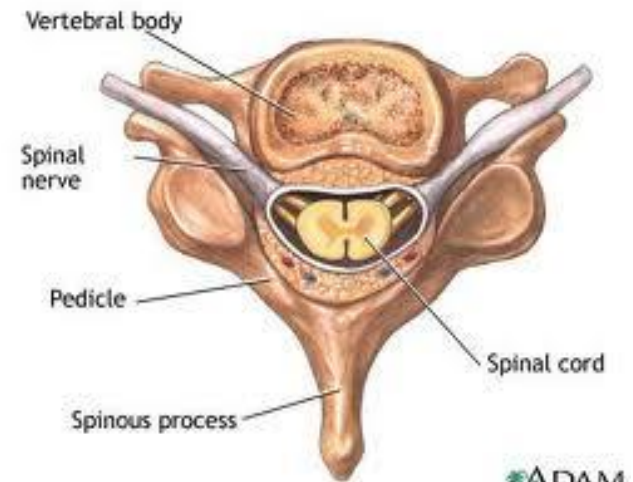
Vertebral Column

- ▶ Separating each vertebrae are intervertebral discs
 - Cushionlike pad
 - Acts as a shock absorber
 - Allow the spine to flex and extend
 - Account for about 25% of the height of the vertebral column

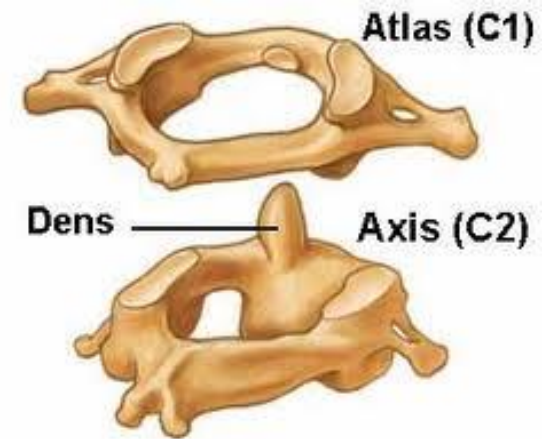


Anatomy of a Vertebra

- ▶ Body
- ▶ Vertebral foramen
- ▶ Spinous process
- ▶ Transverse process



Vertebral Column

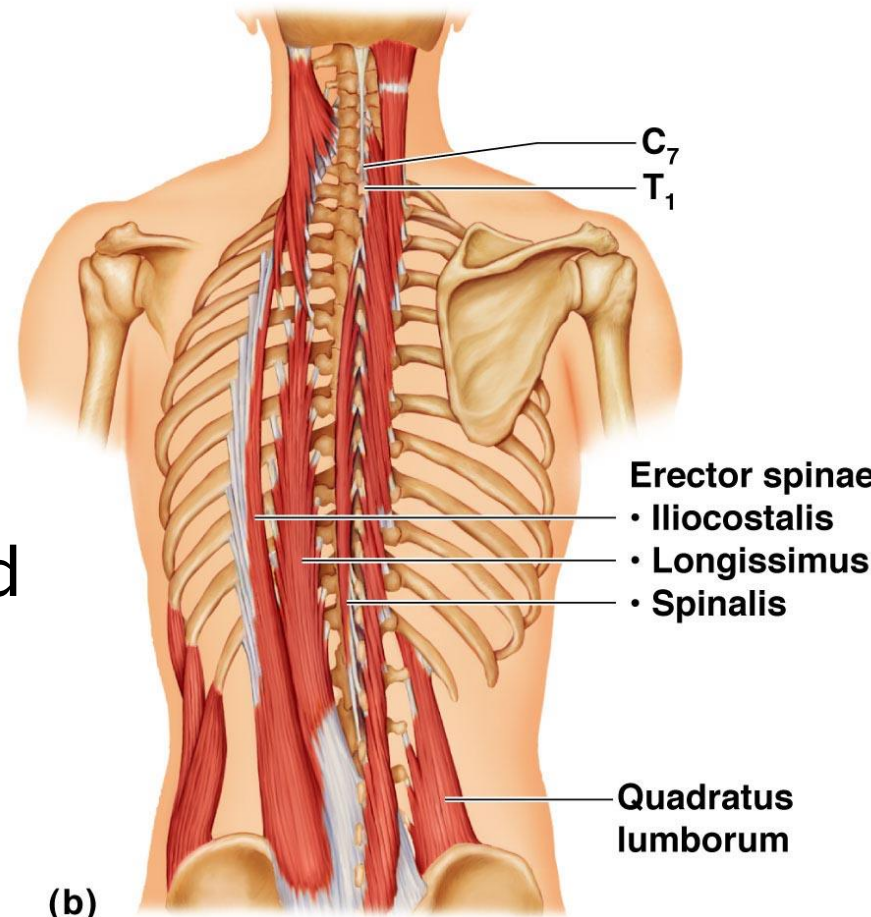


- ▶ The first two cervical vertebrae are called the atlas and axis
- ▶ They have no intervertebral disc
- ▶ Atlas has no body and no spinous process
 - Simply a ring of bone
 - Supports the skull
- ▶ Axis just like remainder of the cervical vertebra except it has a knoblike projection which the atlas pivots upon

Muscles

Erector Spinae

- ▶ **Origin:** sacrum, iliac crest, spinous and transvers processes of vertebrae, ribs
- ▶ **Insertion:** ribs, transverse and spinous processes of vertebrae, occipital bone
- ▶ **Action:** extends and laterally flexes vertebral column, maintains curvature of spine when standing and sitting, stabilizes spine during walking



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Rotatores

- ▶ **Origin**: transverse process of each vertebrae
- ▶ **Insertion**: base of spinous process of adjoining vertebra above
- ▶ **Action**: rotate and assist in extension of vertebral column

