Vertebrae

Musculoskeletal Block

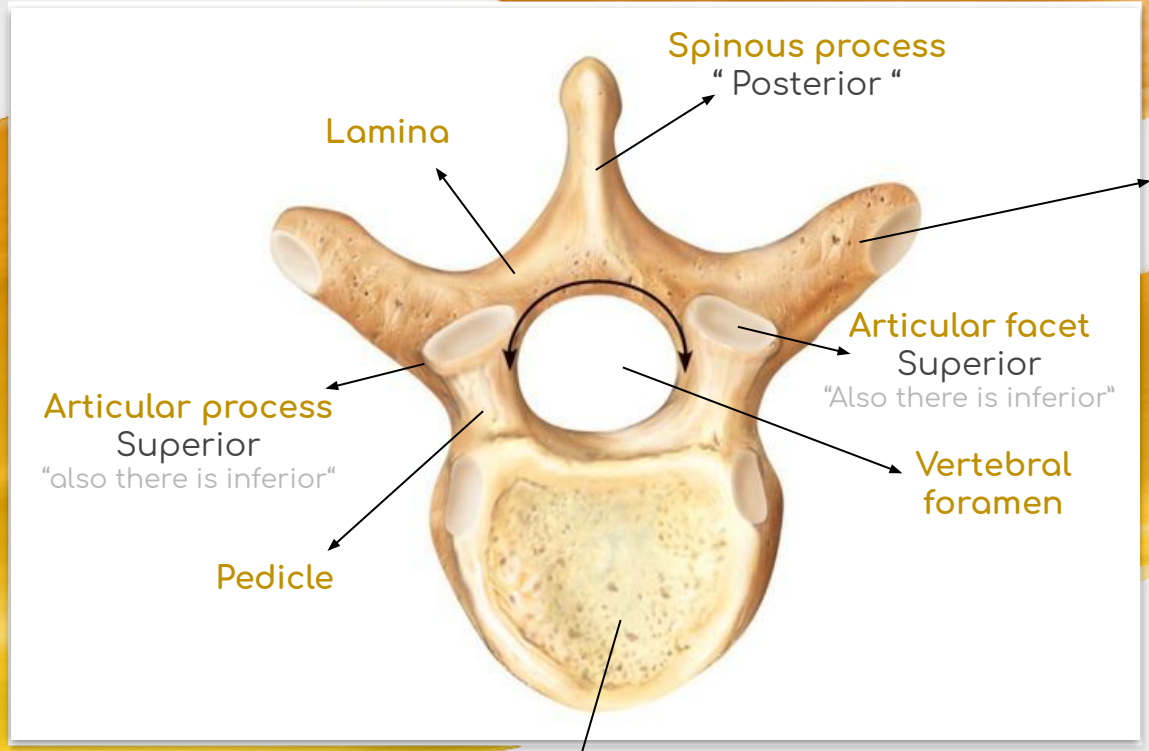
Anatomy Practical team - Med 439

Notes

the information in this file is based on the things that was given during practical sessions along with doctors' notes

To ensure your grade on each question :
1-Make sure your SPELLING is correct
2-Make sure you write the FULL name or location of the object precisely

Typical vertebrae



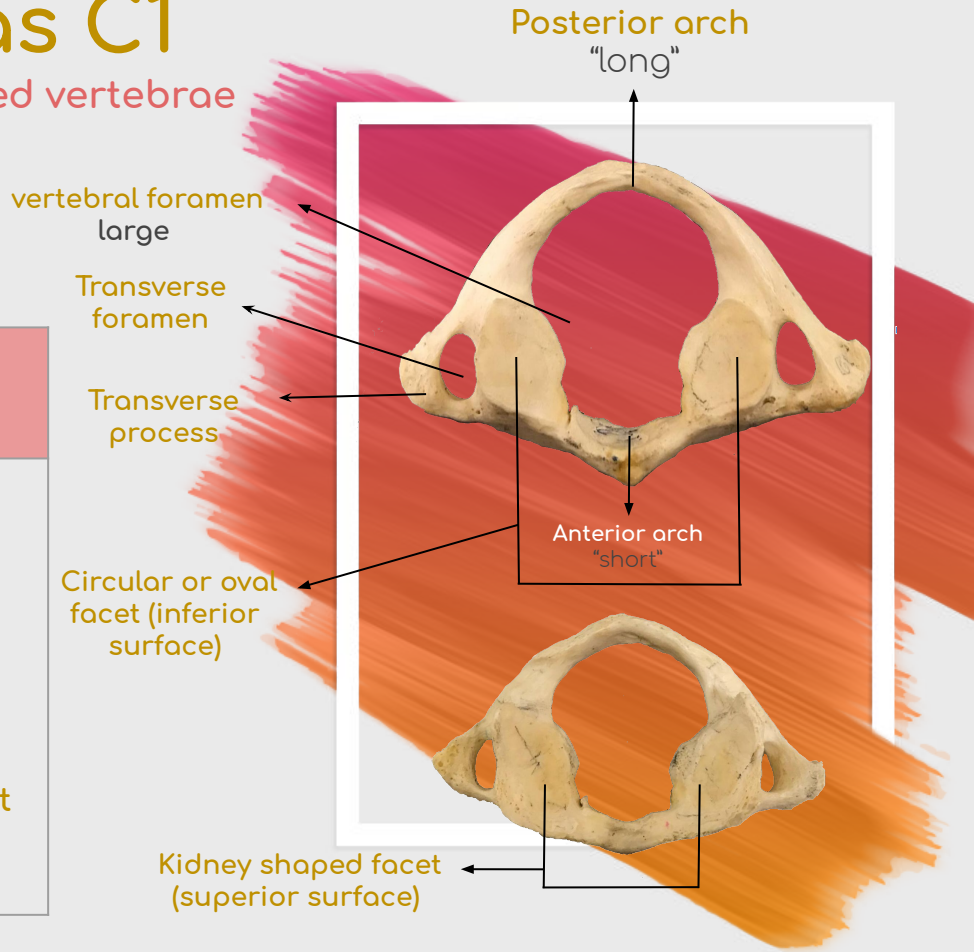
Articular process and transverse process contain a facet

Atypical Cervical Vertebrae

Atlas C1

Ring shaped vertebrae

Special features:	Common features:	Joint:
• No body • No spinous process • Transverse foramen • Kidney shaped articular facet (superior surface) • Circular or oval shaped facet (inferior surface) • Two lateral masses.	• vertebral foramen • Transverse process	Superior Articular surface receives the occipital condyle of the skull to form the Atlanto-occipital joint (nod yes)

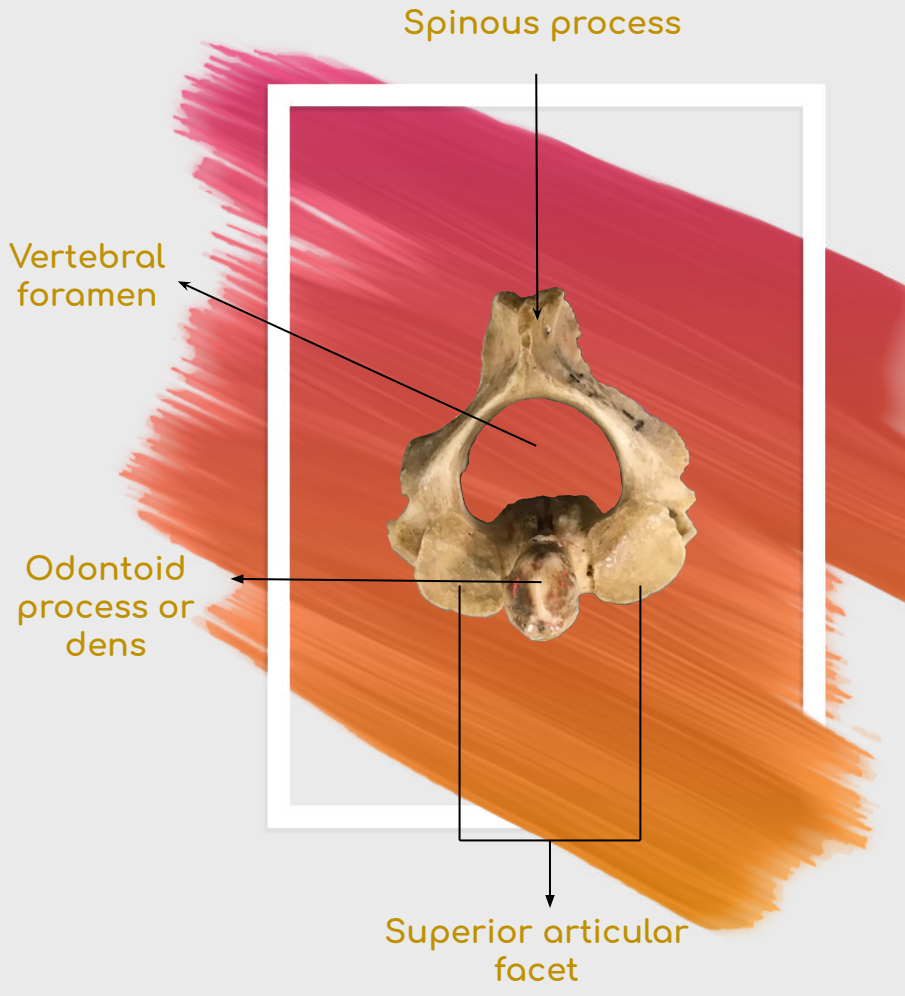


Atypical Cervical Vertebrae

Axis C2

Special features:	Common features:	Joint:
• Odontoid process or dens "it's the body of axis" • Transverse foramen	• Superior & inferior articular facet • Vertebral foramen • Spinous process • Transverse process.	The inferior articular facets of the Atlas (C1) articulate with the superior articular facets of the Axis (C2) to form atlanto-axial joint.

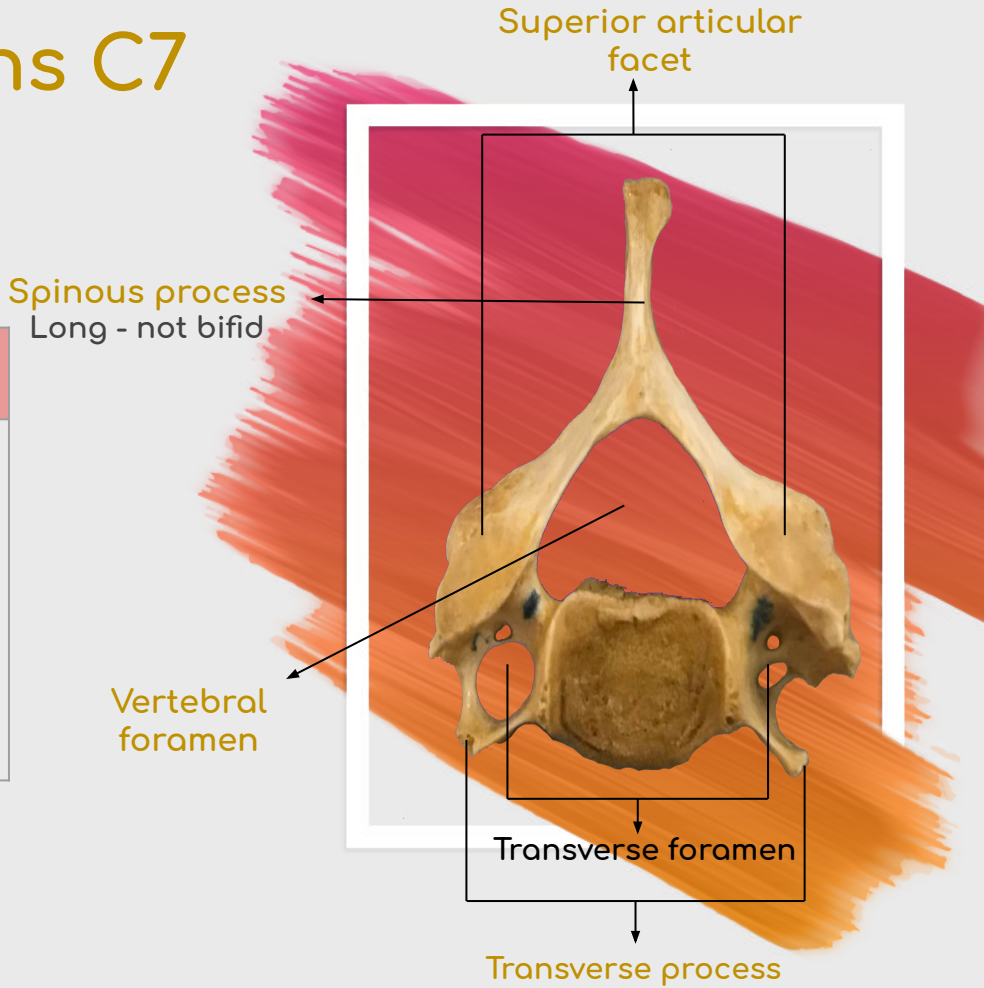
It has all the features of typical cervical except the body replaced by odontoid process



Atypical Cervical Vertebrae

Prominens C7

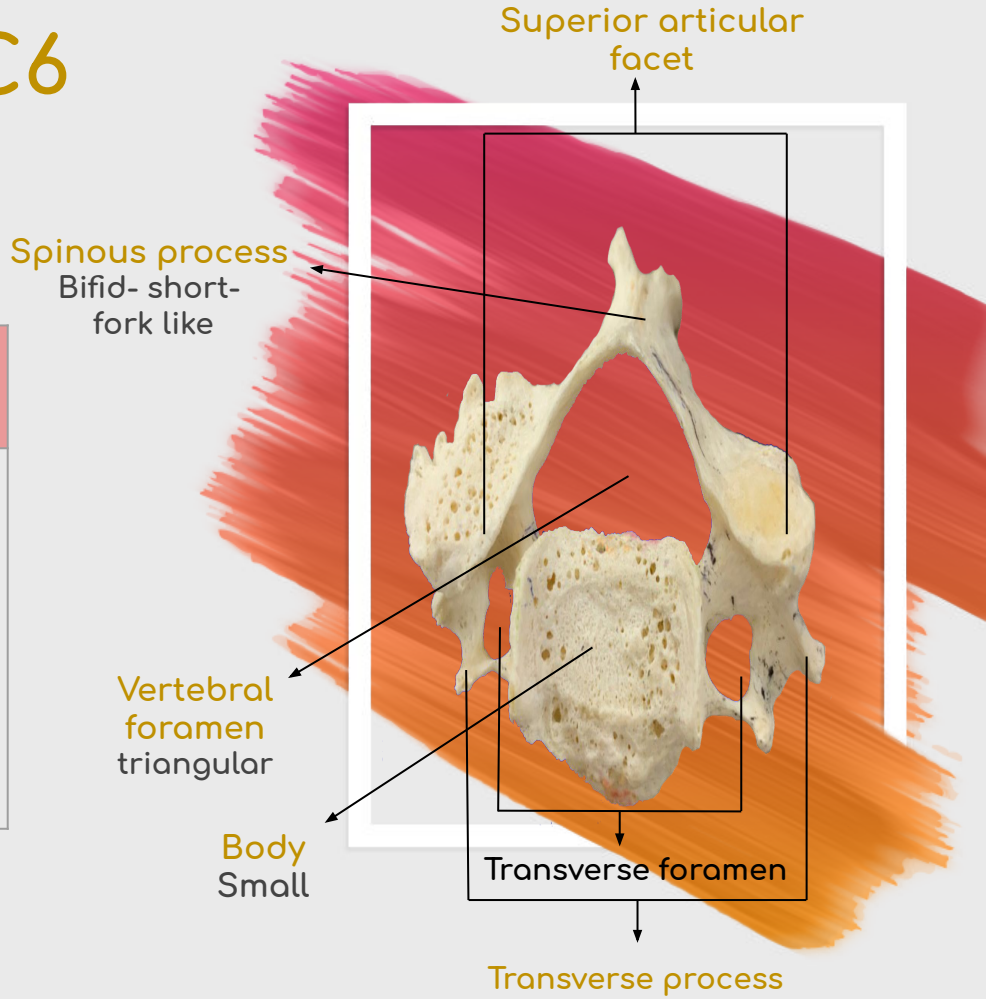
Special features:	Common features:
• Spinous process (Long,Not bifid, not downward) • Veins and nerves pass through transverse foramen	• Superior & Inferior articular facet • Vertebral foramen (triangular,large) • Transverse process



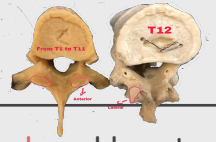
Typical Cervical Vertebrae

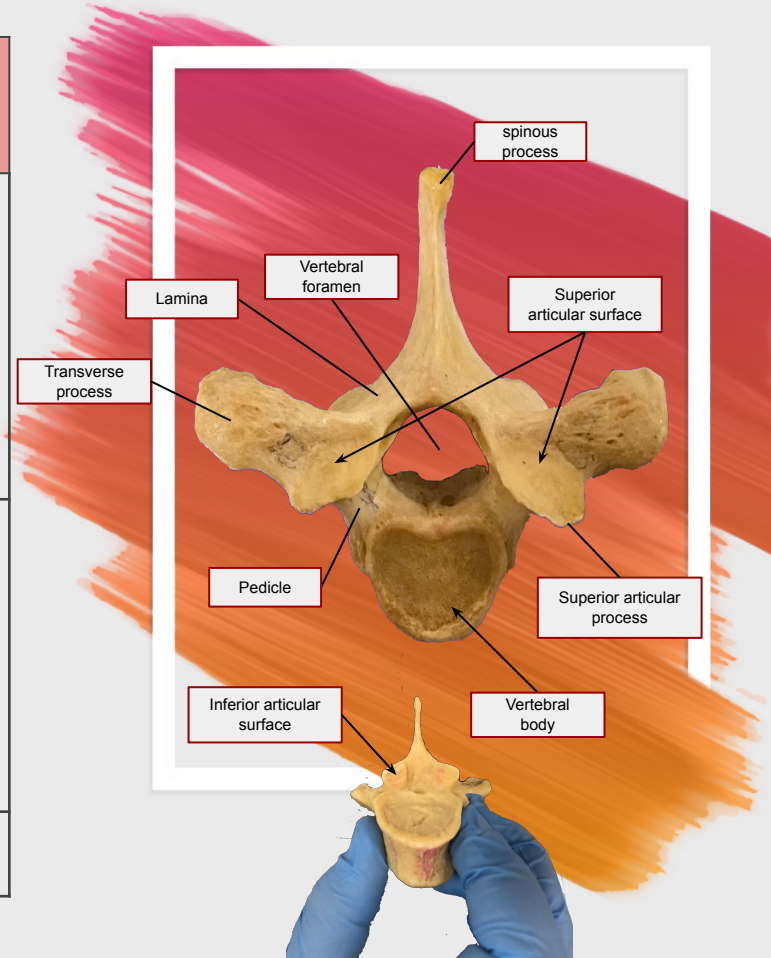
C3 - C6

Special features:	Common features:
• Vessels passes through transverse foramen •Small body • spinous processes is bifid,short and fork like	• Transverse process • Vertebral foramen



Thoracic vertebrae

thoracic vertebrae (T1 To T11)	The last thoracic vertebrae T12
- The inferior articular surfaces are facing anteriorly towards the inferior part of the spinous process	-The inferior articular surfaces are facing laterally to articulate with the L1. Comparison between the inferior articular surfaces of the last thoracic vertebrae T12 and the other thoracic vertebrae (T1 to T11): 
Special features	-The body is medium sized, somewhat heart-shaped and has two costal Vertebrae demifacets on each sides (superior,Inferior) which receive the heads of the ribs. - also the transverse processes have facets that articulate with the tubercles of the ribs. - spinous process (long hooks sharply downward)
common features	Vertebral foramen (circular), pedicle, lamina.



Typical & atypical lumbar

Typical lumbar L1,L2,L3,L4	Atypical lumbar L5
- The inferior articular surfaces are facing laterally towards the transverse processes.	-The inferior articular surfaces are facing anteriorly to articulate with the sacrum. - Spinous process is short (shorter than the typical)

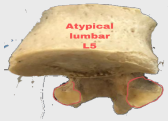
Special features

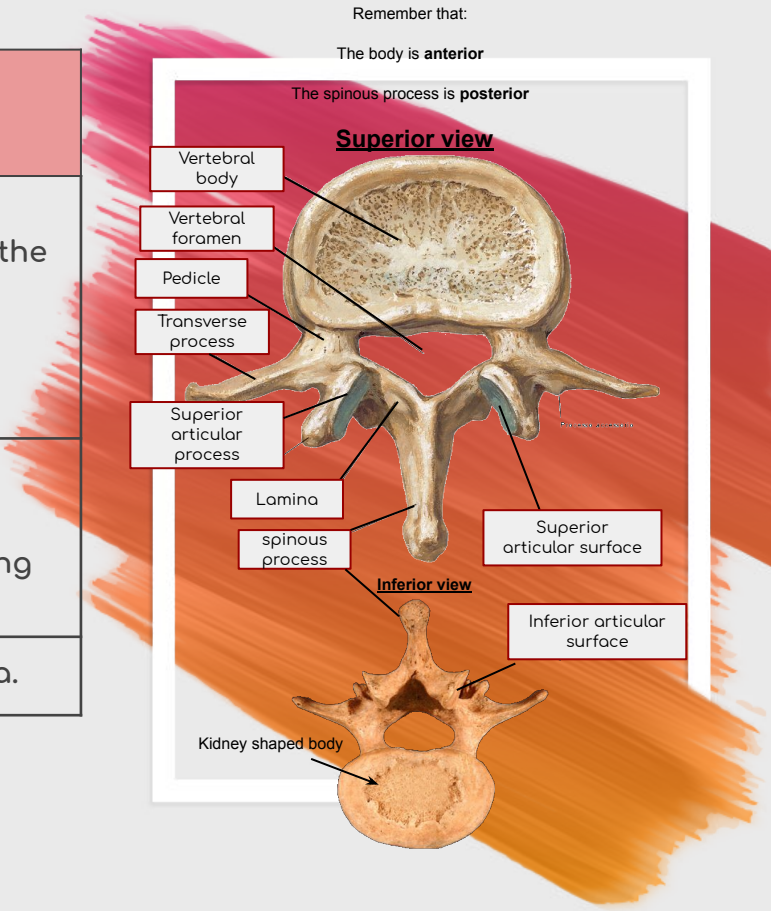
- Massive block like body (kidney shaped) 
- spinous process (Short hatchet shaped) 
- In all lumbar vertebrae the superior articular surfaces are facing medially towards the spinous process.

common features

Vertebral foramen (triangular), pedicle, transverse process, lamina.

Comparison between the inferior articular surfaces of the typical and atypical lumbar vertebrae:

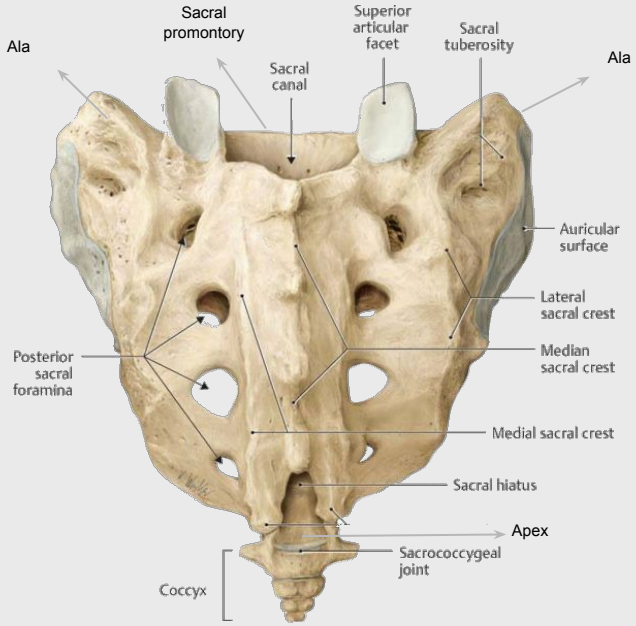




Sacrum & coccyx

Coccyx Features

The coccyx is formed from the fusion of 4 tiny, irregularly shaped vertebrae.



Sacrum Features

- The sacrum is formed by fusion of 5 vertebrae.

- The superior articular surfaces are facing posteriorly to articulate with L5.

- The sacrum articulate inferiorly with the coccyx forming the sacrococcygeal joint.

- The wing like ala articulate laterally with the hip bones, forming the sacroiliac joints.

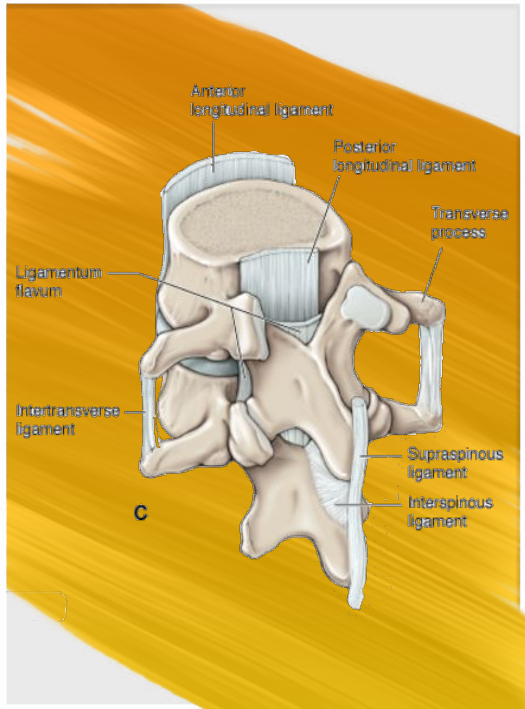
- The sacrum has two surfaces:
1- Anterior -pelvic- surface (Concave,smooth).
2- Posterior -dorsal- surface (Convex).

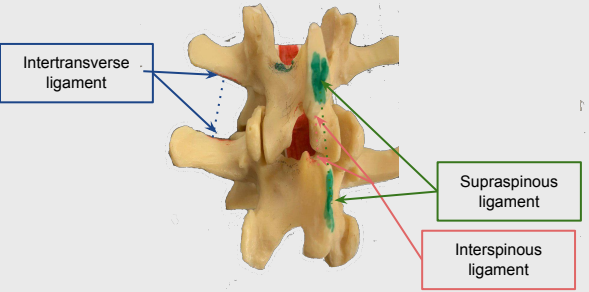
- The sacral canal opens inferiorly where it is called sacral hiatus.

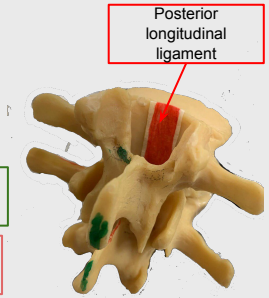
- Median crest → fused spinous process.
- Medial crest → fused articular process.
- Lateral crest → fused transverse process.

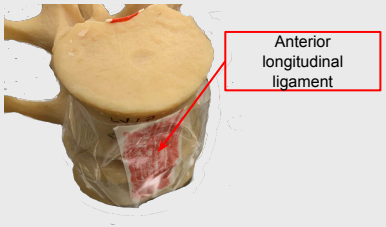
Ligaments of the spine

- The anterior and posterior longitudinal ligaments run as continuous bands along the anterior & posterior surfaces of the vertebral bodies.
- Supraspinous ligament (connects two spine tips).
- Interspinous ligament (connects two spines).
- ligamentum flavum (connects two laminae).
- Intertransverse ligament (connects two transverse processes).
- Ligamentum Nuchae: in the cervical region, the Supraspinous and Interspinous ligaments are thickened to form the strong ligamentum nuchae.
- It extends from the external occipital protuberance of the skull to the spine of the seventh cervical vertebra.









SUMMARY

- When you see the transverse foramen in a vertebra, that would mean it is from the Cervical vertebrae. Then check if :
- There is no body then it is "Atlas C1"
- There is an odontoid process it is "Axis C2".
- There is a long non-bifid spinous process it is "Prominens C7", otherwise it is typical (C3-C6).
* vessels and nerves pass through the transverse foramen of cervical vertebrae except at C7 where only veins and nerves pass*.
- When you see a long downward pointing non-bifid spinous with no transverse foramen, it is "thoracic".
- If the body big and the spinous process is short hatchet-shaped, it is "lumbar".

Click or Scan

Identify the structures and their features

Don’t stop until you are proud.

Team Members:

- Duaa Alhumoudi
- Mona Alomiriny
- Rania Almutiri
- Taif Almotiri
- **Nourah Alklaib**
- Arwa Alqahtani
- Norah Alasheikh
- Sara Alharbi
- Najd Alzahrani
- **Khalid Alosaimii**
- Mishal Althunayan
- Omar alhalabi
- Abdulaziz Alomar
- Hadi Alhemsi
- Nasser Alohali

Team Leaders:

- Renad Alhomaidi
- Bassam Alasmari