



Introduction to Anatomy

Practical Lab

1st year Medical Students

2025-2026

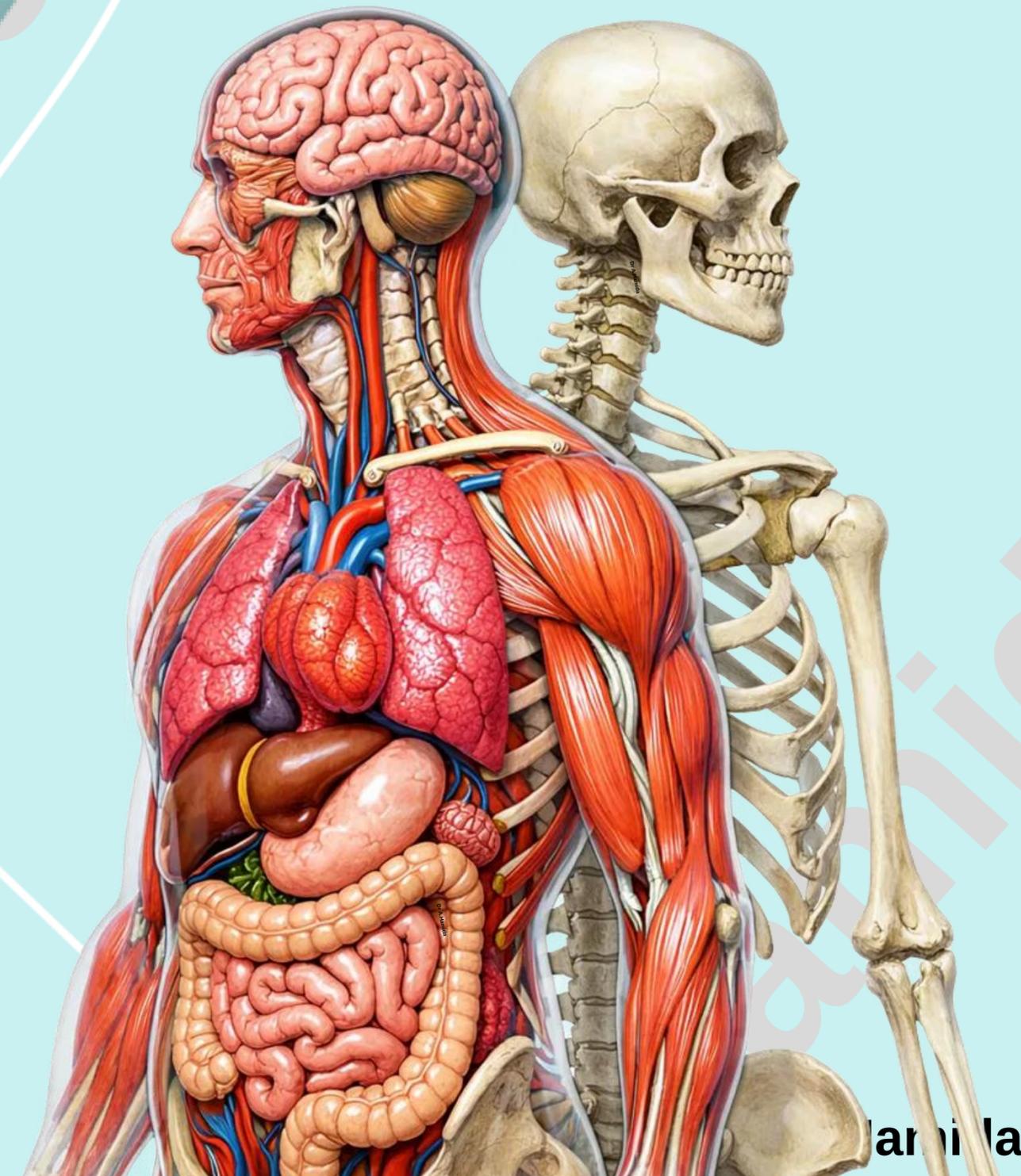
Second Semester

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Hamida

Practical Lab-2

1. Vertebral column

2. Thoracic cage

Check List:

Practical Lab-2

1. Vertebral column

- ✓ Outline the types and number of vertebrae in the vertebral column and locate each group on the skeleton provided in the lab.
- ✓ Identify the main parts of a typical vertebra.
- ✓ Differentiate between: Vertebral foramen and Intervertebral foramen and state the structures passing through each.
- ✓ Identify and describe the first and second cervical vertebrae

2. Thoracic cage

- ✓ Outline the components of the thoracic cage.
- ✓ Identify the sternum and its parts.
- ✓ Identify the parts of a typical rib and its articulation.
- ✓ Outline the classification of ribs (based on their anterior end attachments)

Check List:

Practical Lab-2

1. Vertebral column

✓ Outline the types and number of vertebrae in the vertebral column and locate each group on the skeleton provided in the lab.

- 7 Cervical Vertebrae
- 12 Thoracic Vertebrae
- 5 Lumbar
- 5 Sacral (fused to form the sacrum)
- 4 Coccygeal (fused to form the coccyx)

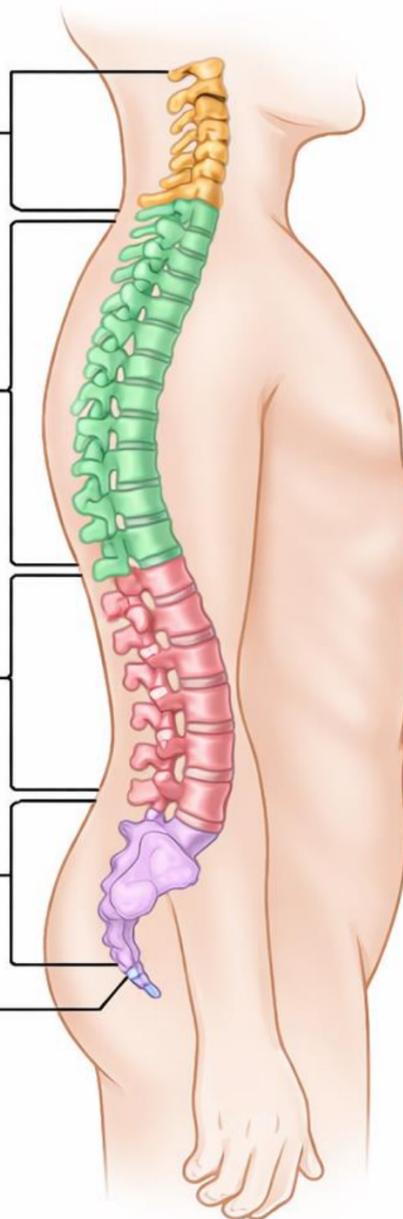
Cervical vertebrae

Thoracic vertebrae

Lumbar vertebrae

Sacrum

Coccyx



Check List:

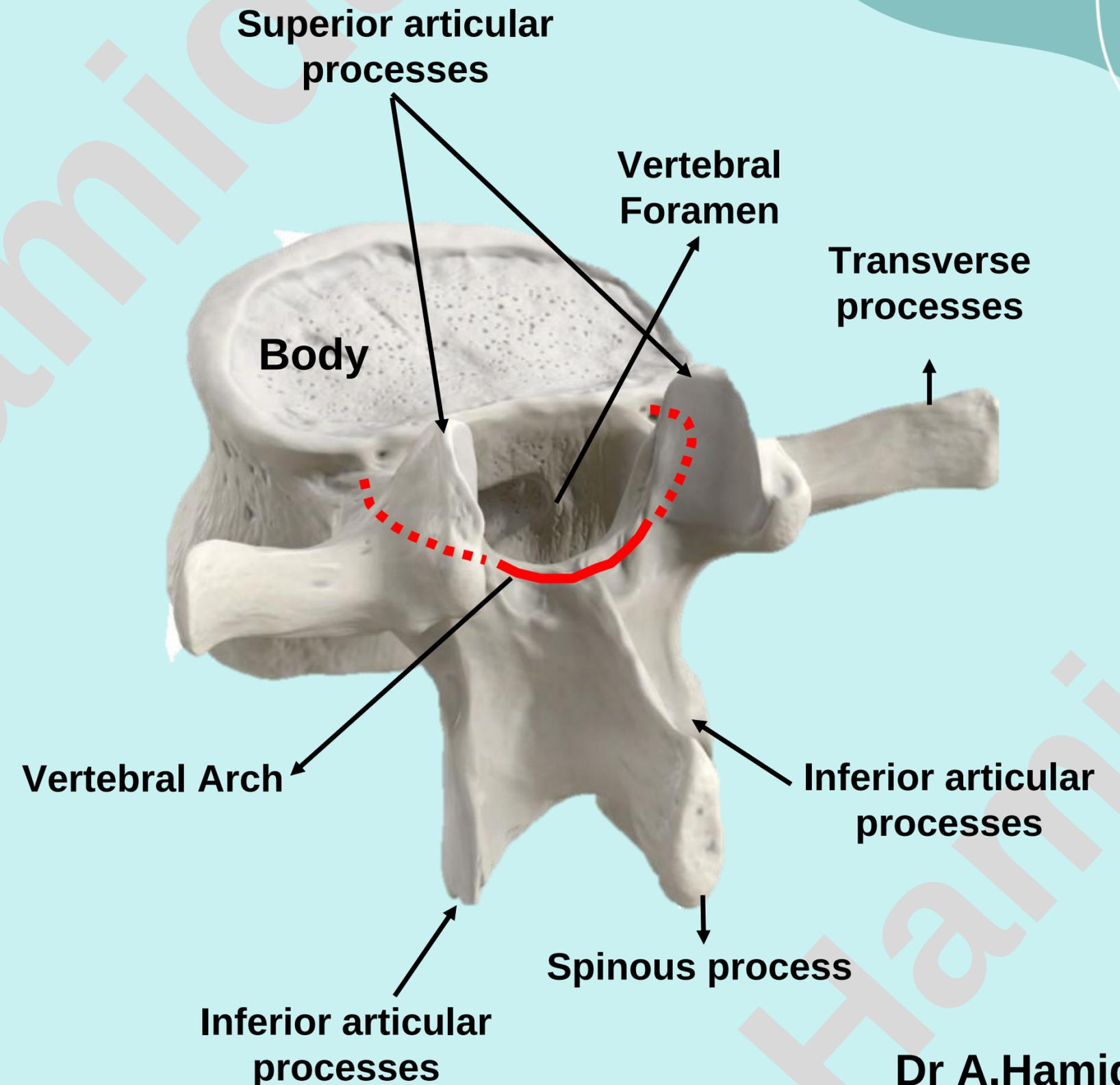
Practical Lab-2

1. Vertebral column

Typical Vertebra – General Structure

✓ Identify the main parts of a typical vertebra

- Vertebral body
- Vertebral arch
- Vertebral foramen
- Seven processes:
 - Two transverse Processes (project laterally)
 - One Spinous Process (projects posteriorly)
 - Two superior articular processes (project superiorly)
 - Two inferior articular processes (project inferiorly)



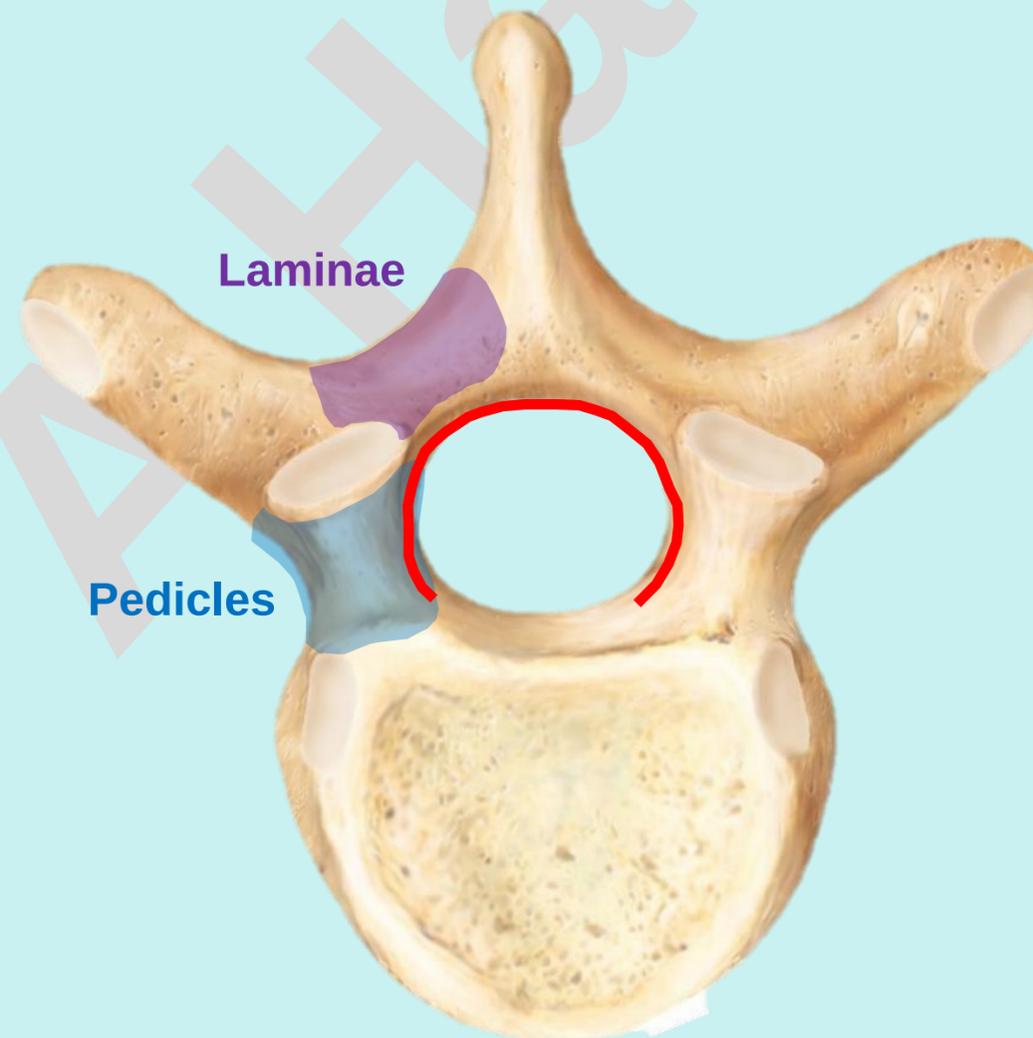
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Check List:

1. Vertebral column

Typical Vertebra – General Structure

- ✓ Identify and describe the components of the vertebral arch
 - The vertebral arch consists of two parts:
 - **Pedicles**: Project posteriorly from the vertebral body.
 - **Laminae**: Extend posteriorly from the pedicles and unite in the midline to complete the vertebral arch

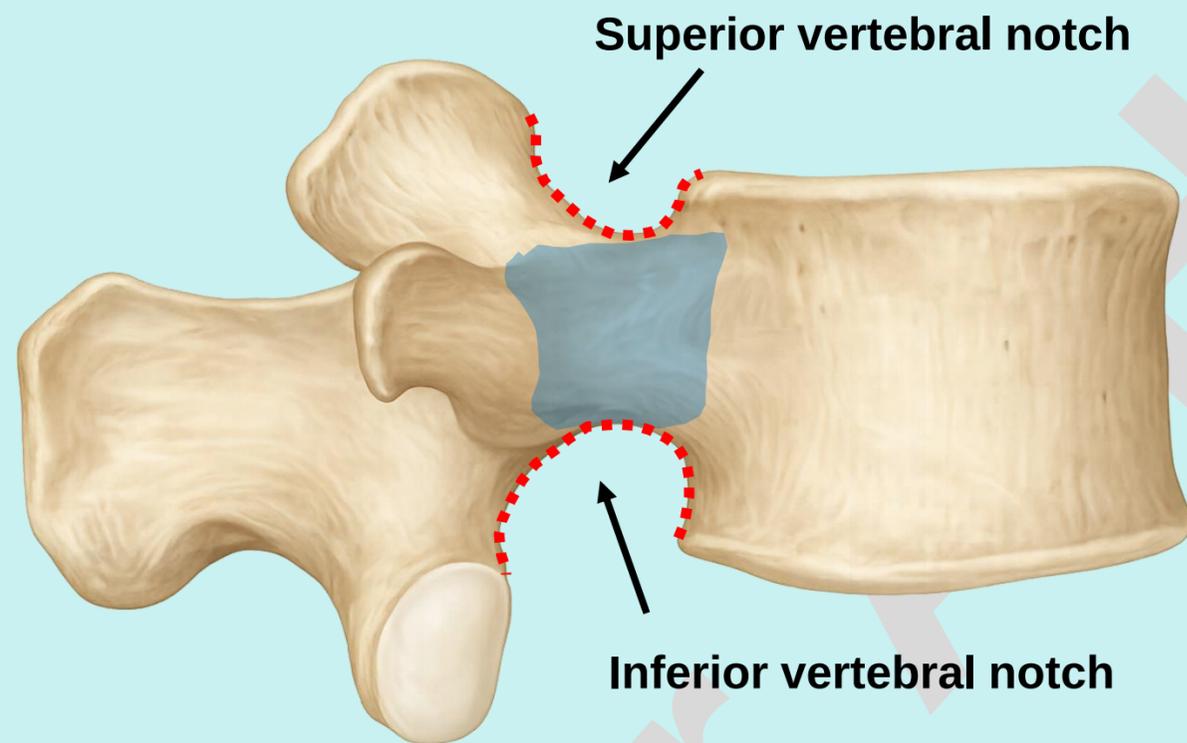


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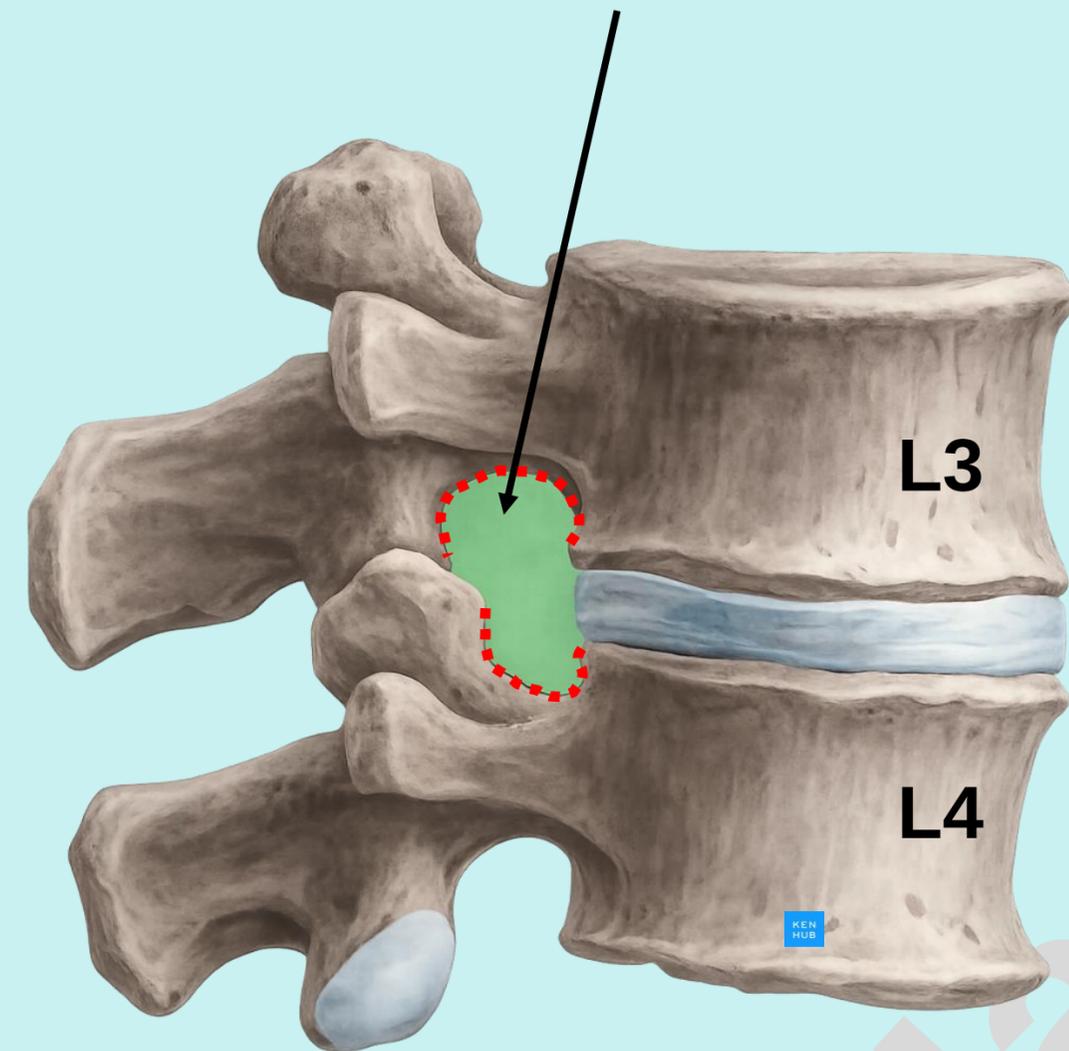
1. Vertebral column

Typical Vertebra – General Structure

- ✓ Identify the superior and inferior vertebral notches that present on the pedicles



- ✓ Explain how adjacent superior and inferior vertebral notches form the intervertebral foramen



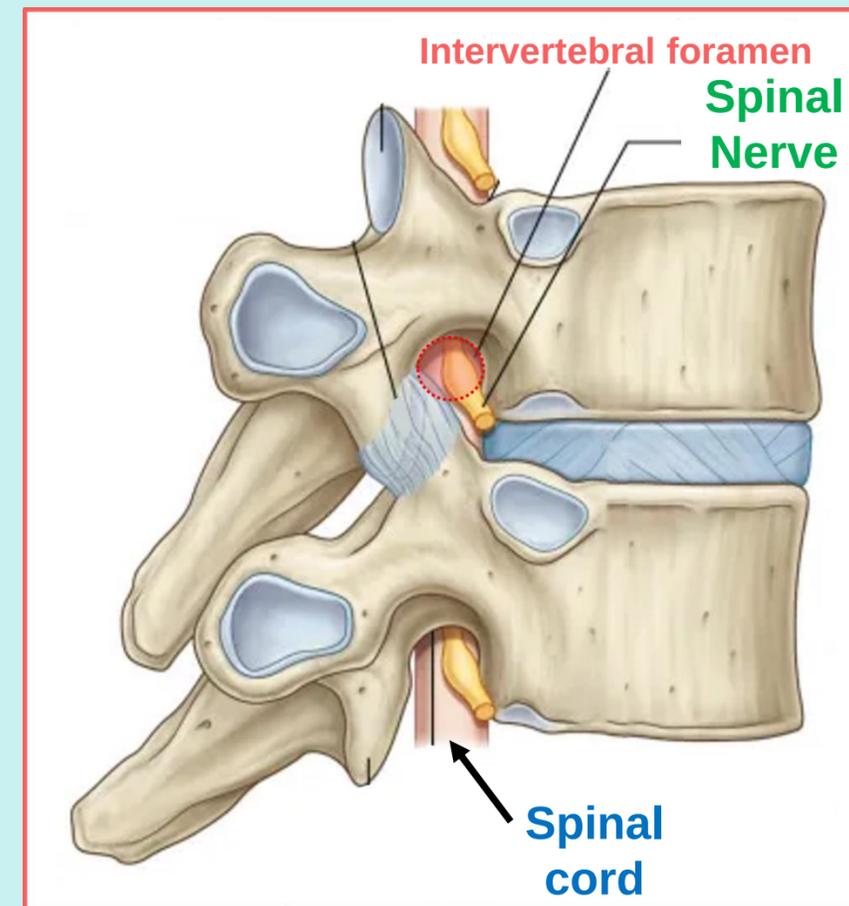
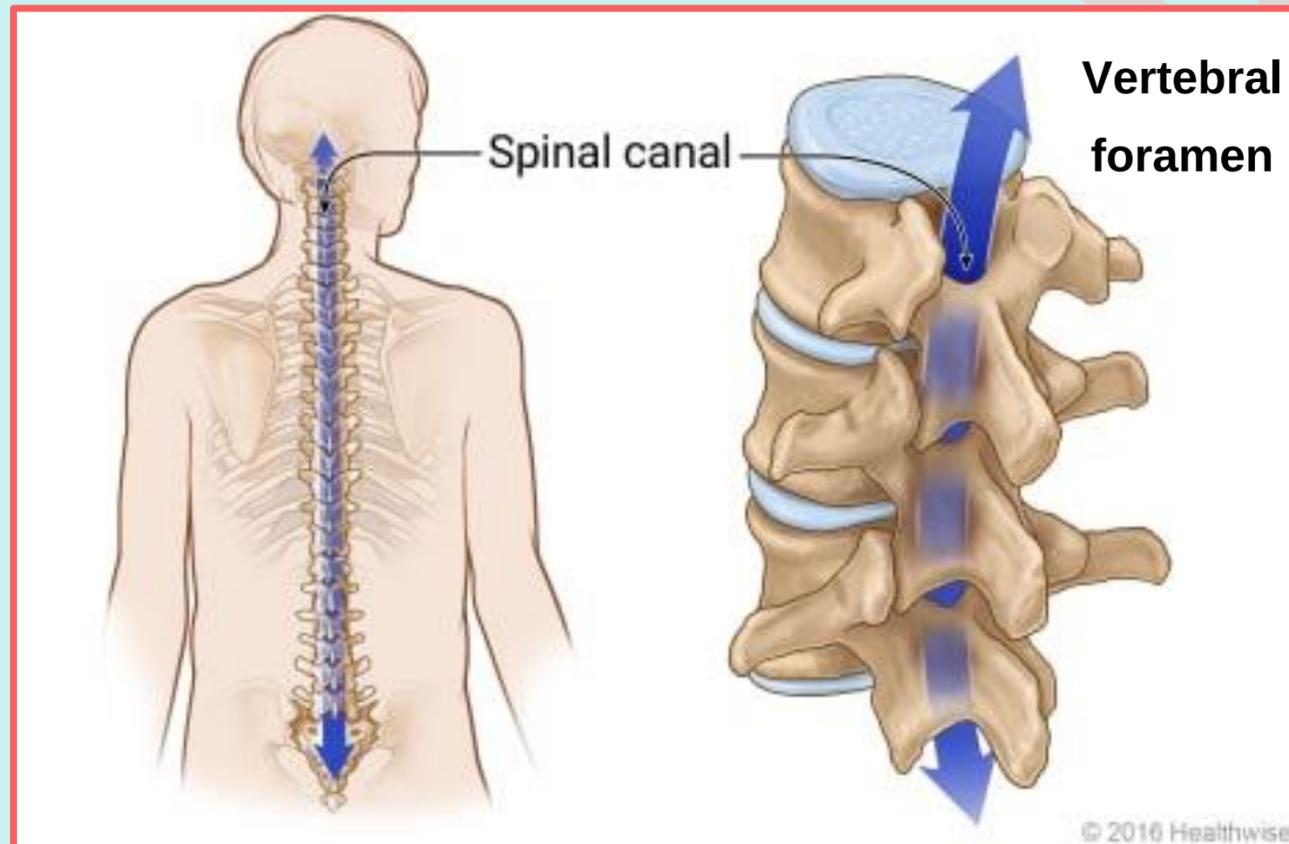
Check List:

1. Vertebral column

Typical Vertebra – General Structure

✓ Differentiate between: Vertebral foramen and Intervertebral foramen and state the structures passing through each:

- Vertebral foramen → **Spinal cord**
- Intervertebral foramen → **Spinal nerves**



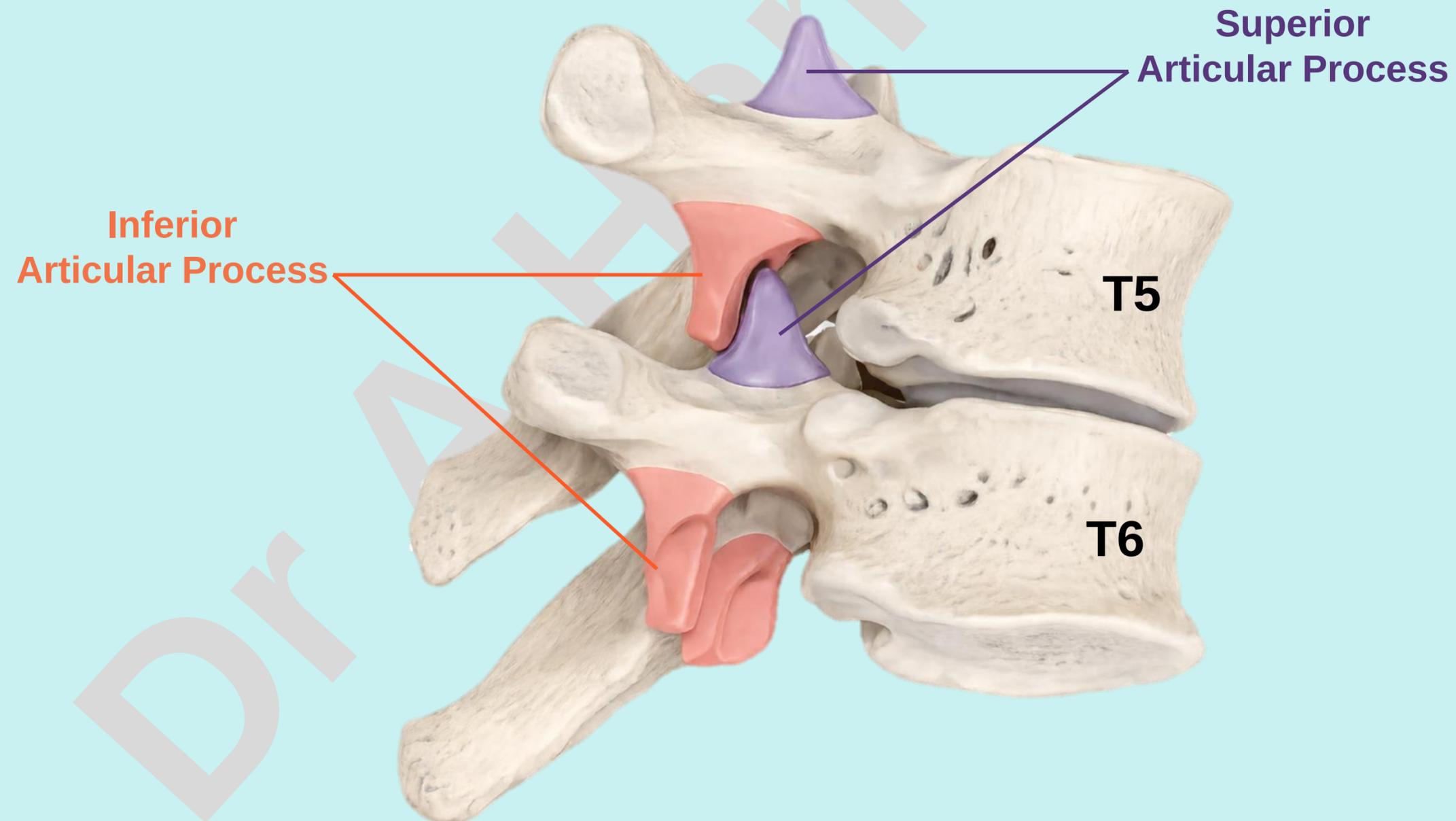
Check List:

Practical Lab-2

1. Vertebral column

Typical Vertebra – General Structure

- ✓ Correctly articulate two adjacent vertebrae and demonstrate the articulation between Superior articular processes and Inferior articular processes



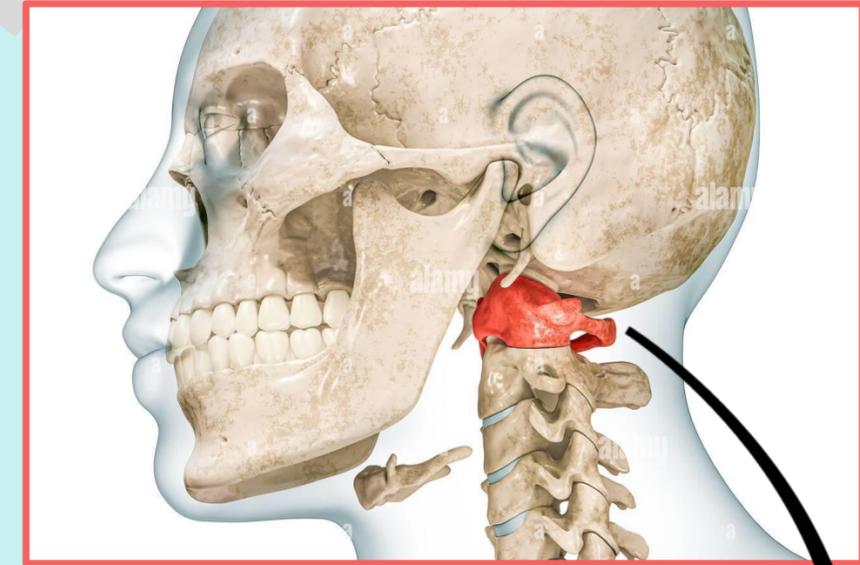
Check List:

Practical Lab-2

1. Vertebral column

Atypical Vertebra – First Cervical Vertebra (Atlas – C1)

- ✓ Identify the atlas.
- ✓ Describe its ring-shaped structure.
- ✓ State that it lacks a body and a spinous process
- ✓ It has very large vertebral foramen
- ✓ It has large transverse process containing the foramen transversarium
- ✓ Explain its articulation with the occipital bones.
- ✓ Relate the atlanto-occipital joint to the “yes” movement of the head.



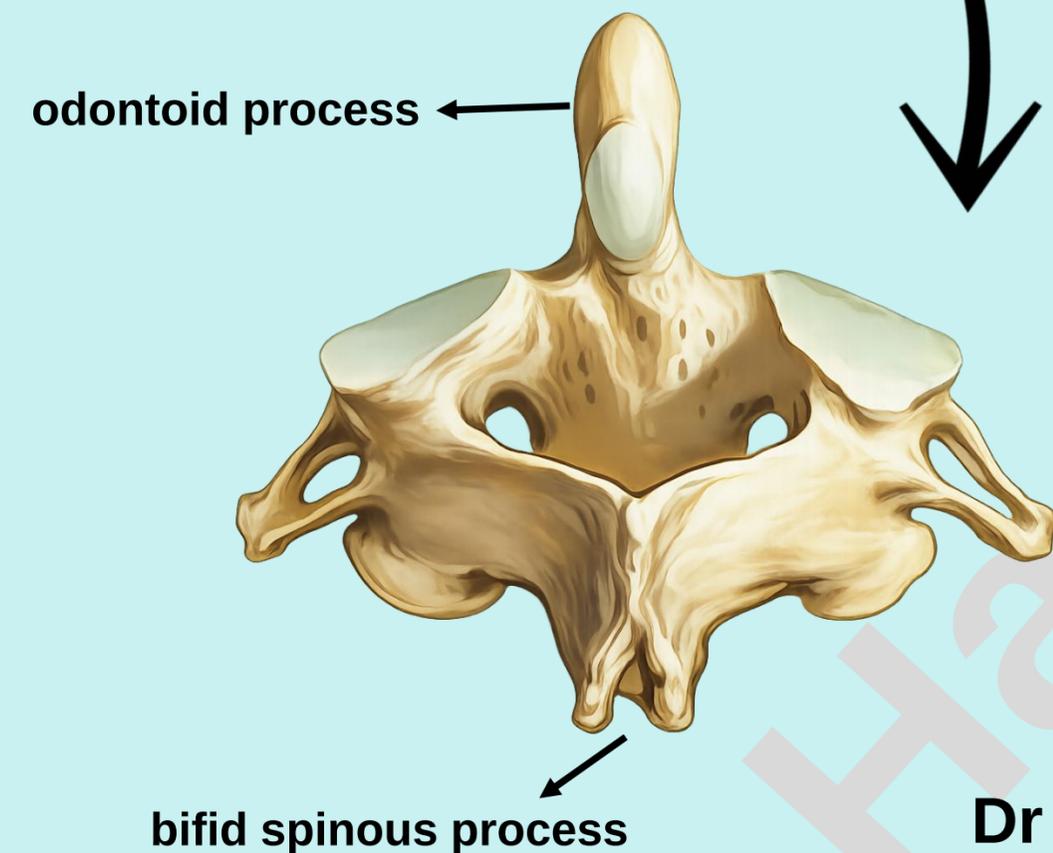
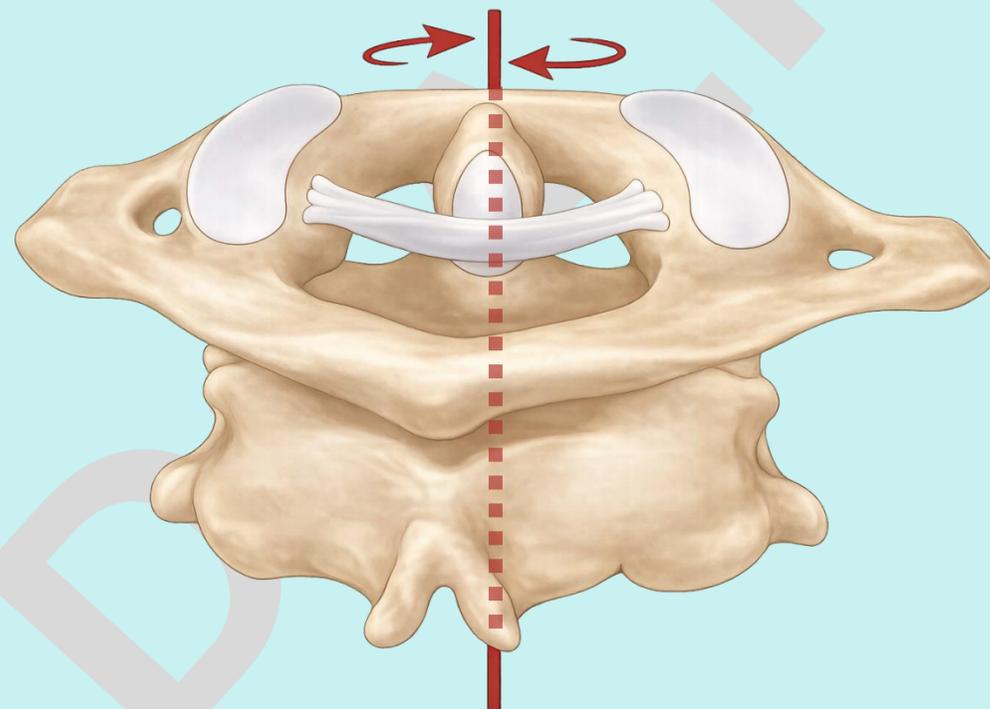
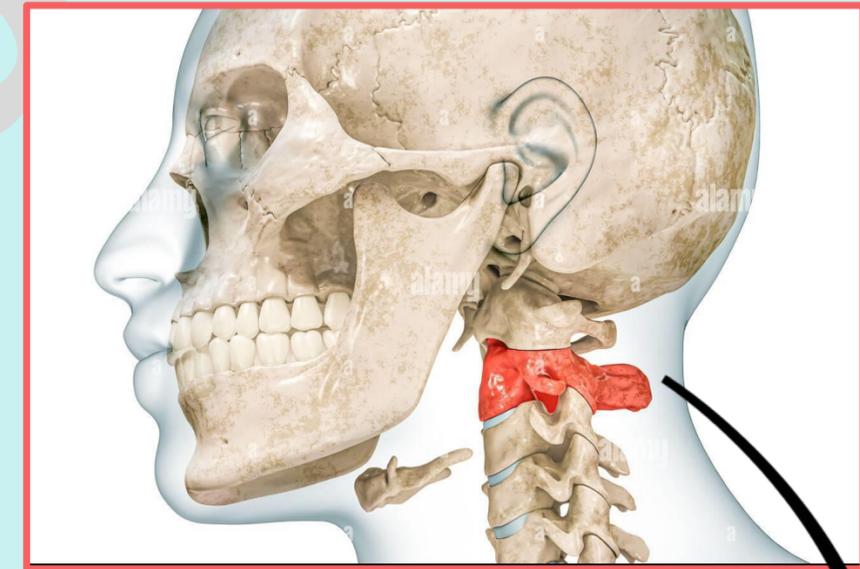
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Check List:

1. Vertebral column

Atypical Vertebra – Second Cervical Vertebra (Axis – C2)

- ✓ Identify the axis.
- ✓ Identify and describe the dens (odontoid process).
- ✓ It has large and strong body
- ✓ It has large, strong, bifid spinous process
- ✓ Explain how the dens acts as a pivot for rotation of the atlas.
- ✓ Relate the Atlanto-Axial Joint to the “no” movement of the head.

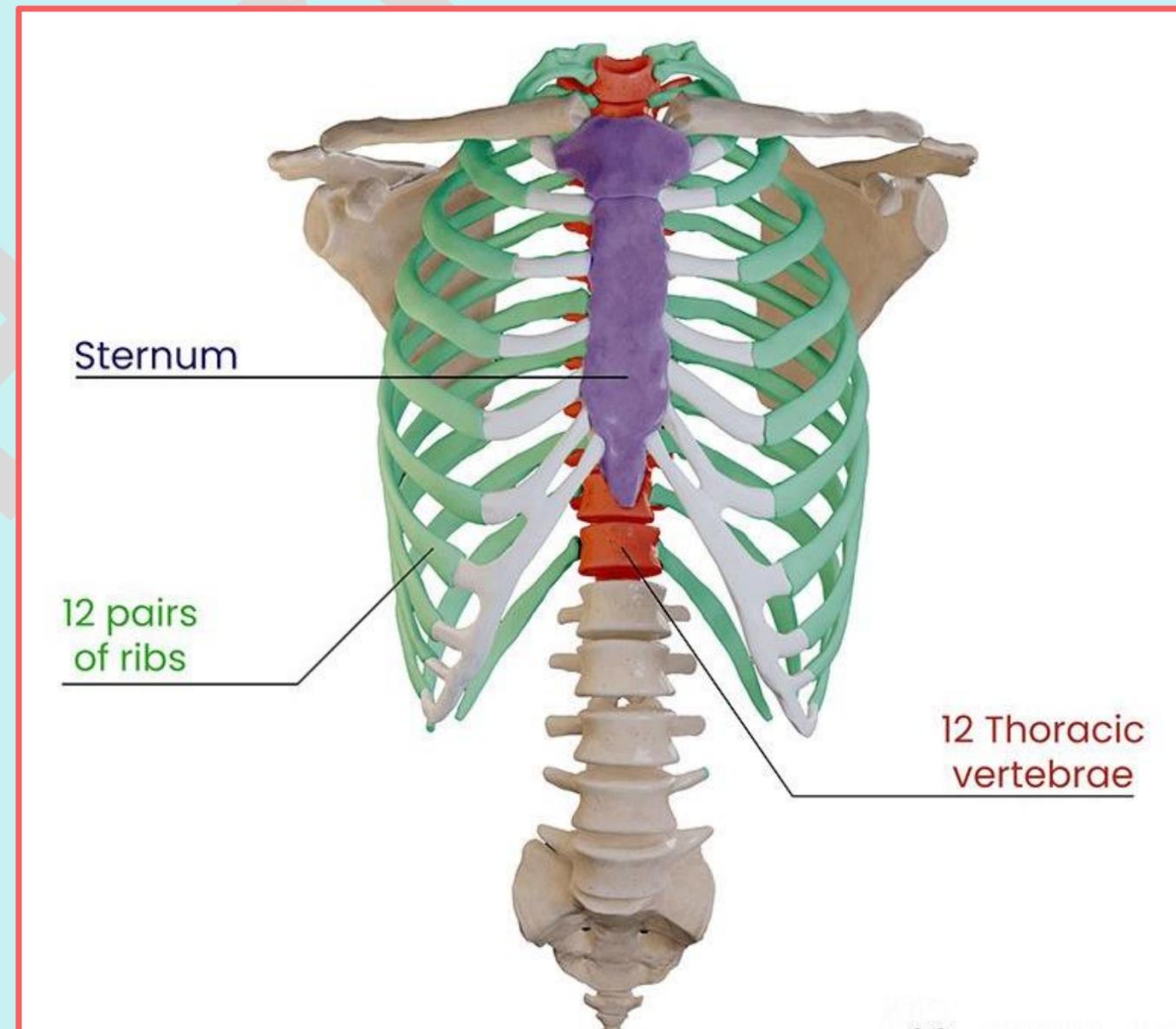


Check List:

Practical Lab-2

2. Thoracic cage

- ✓ Outline the components of the thoracic cage on the skeleton provided in the lab.



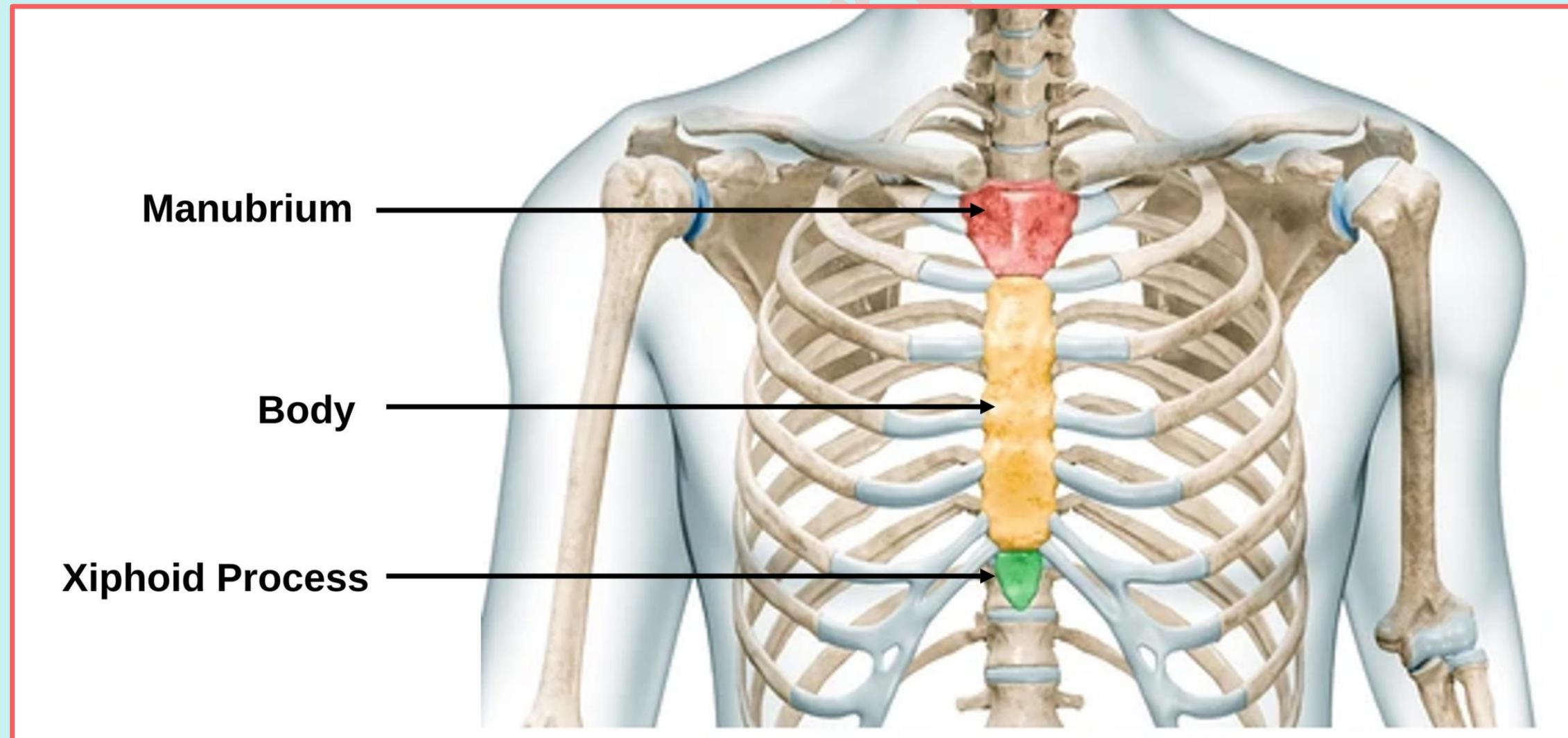
Check List:

Practical Lab-2

2. Thoracic cage

Sternum

- ✓ Identify the sternum and its parts: Manubrium, Body, Xiphoid process



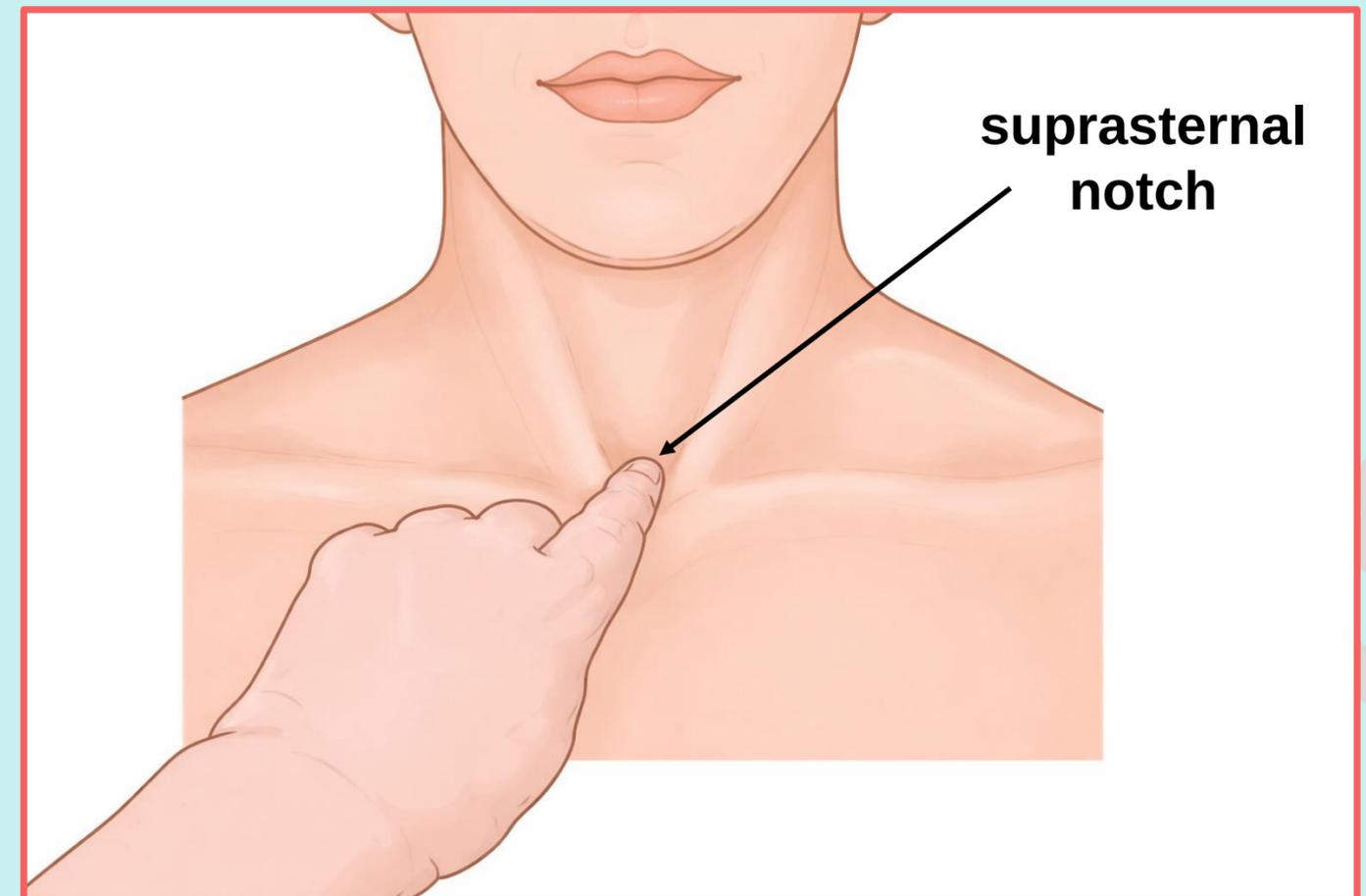
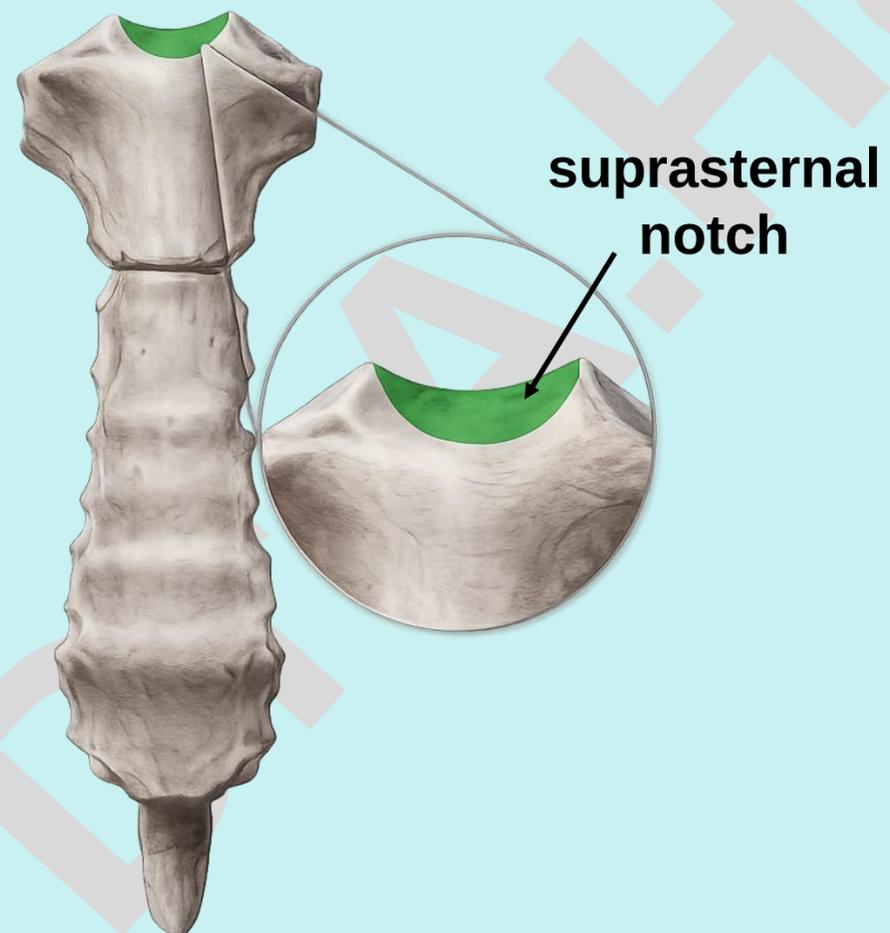
Check List:

2. Thoracic cage

Sternum: Manubrium

✓ Identify the suprasternal notch (jugular notch) and recognize its clinical importance:

- Located at the upper border of the manubrium.
- An important surface anatomical landmark.

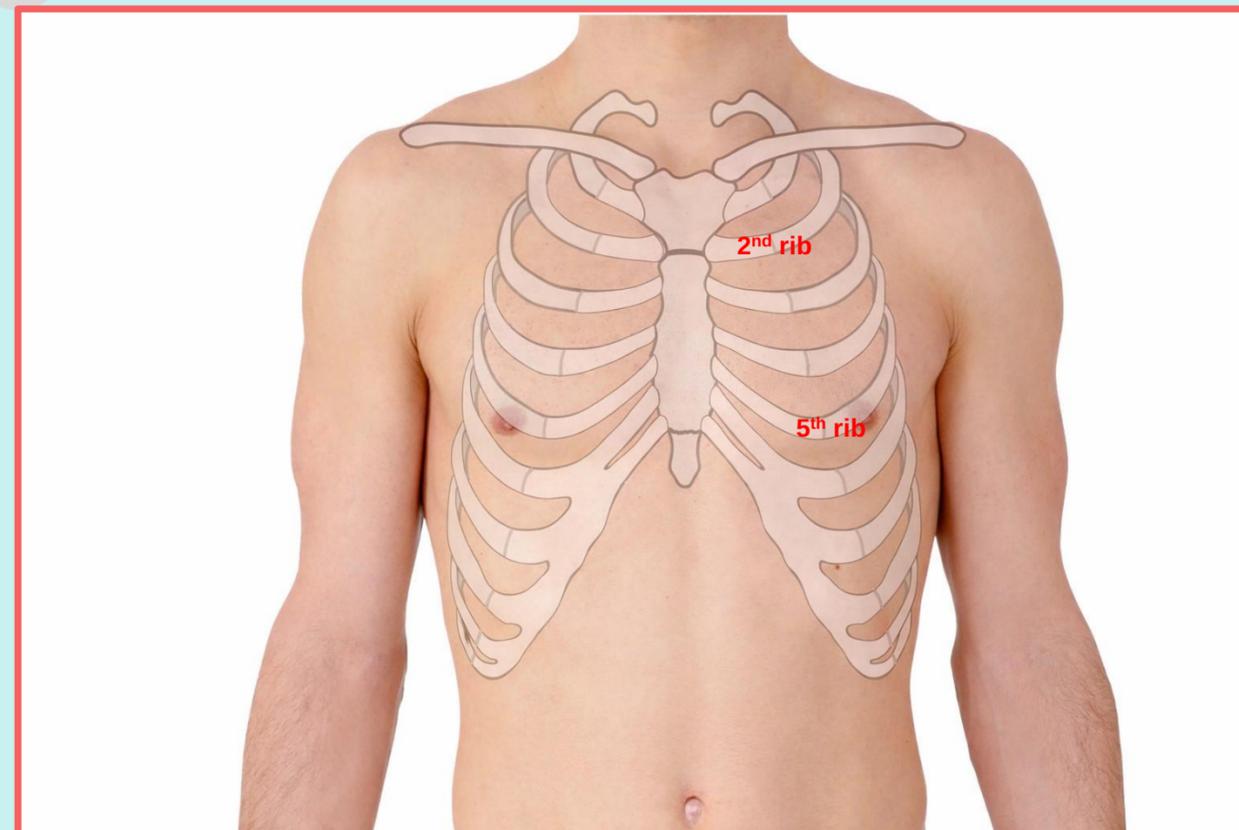
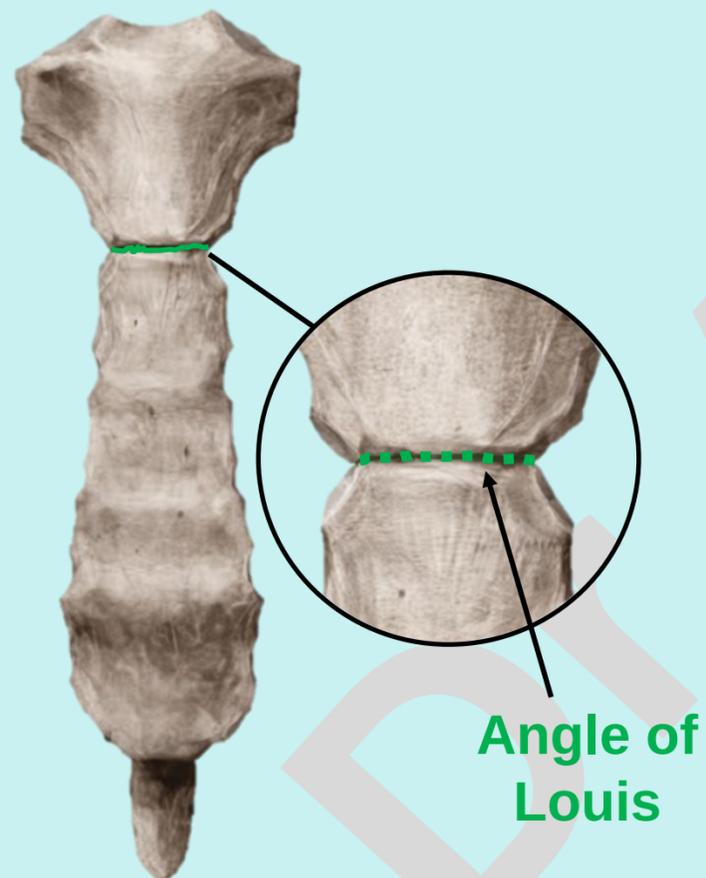


Check List:

2. Thoracic cage

Sternum

- ✓ Identify the sternal angle (Angle of Louis) and recognize its clinical importance:
 - A palpable ridge formed at the junction between the manubrium and the body of the sternum.
 - It is an important surface anatomical landmark used for counting ribs.
 - At this level, the 2nd costal cartilage (2nd rib) articulates with the sternum.



Check List:

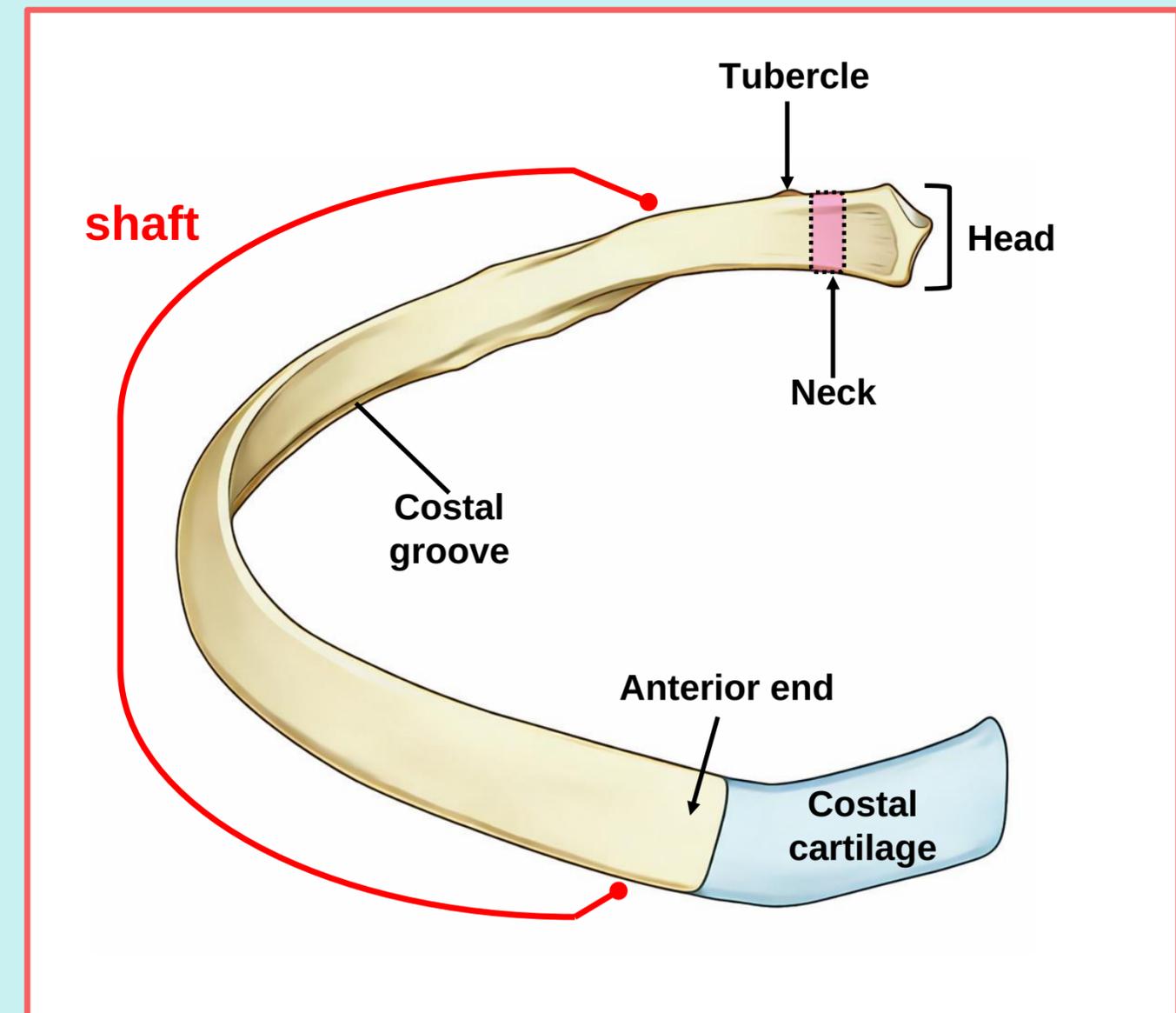
Practical Lab-2

2. Thoracic cage

Typical Rib

✓ Identify the parts of a typical rib:

- Posterior end (Head, Neck, and Tubercle)
- Shaft
- Costal groove (subcostal groove):
 - located on the inferior inner border of a rib that
 - contains: Intercostal vein, Intercostal artery, Intercostal nerve
- Anterior end: continues as a costal cartilage



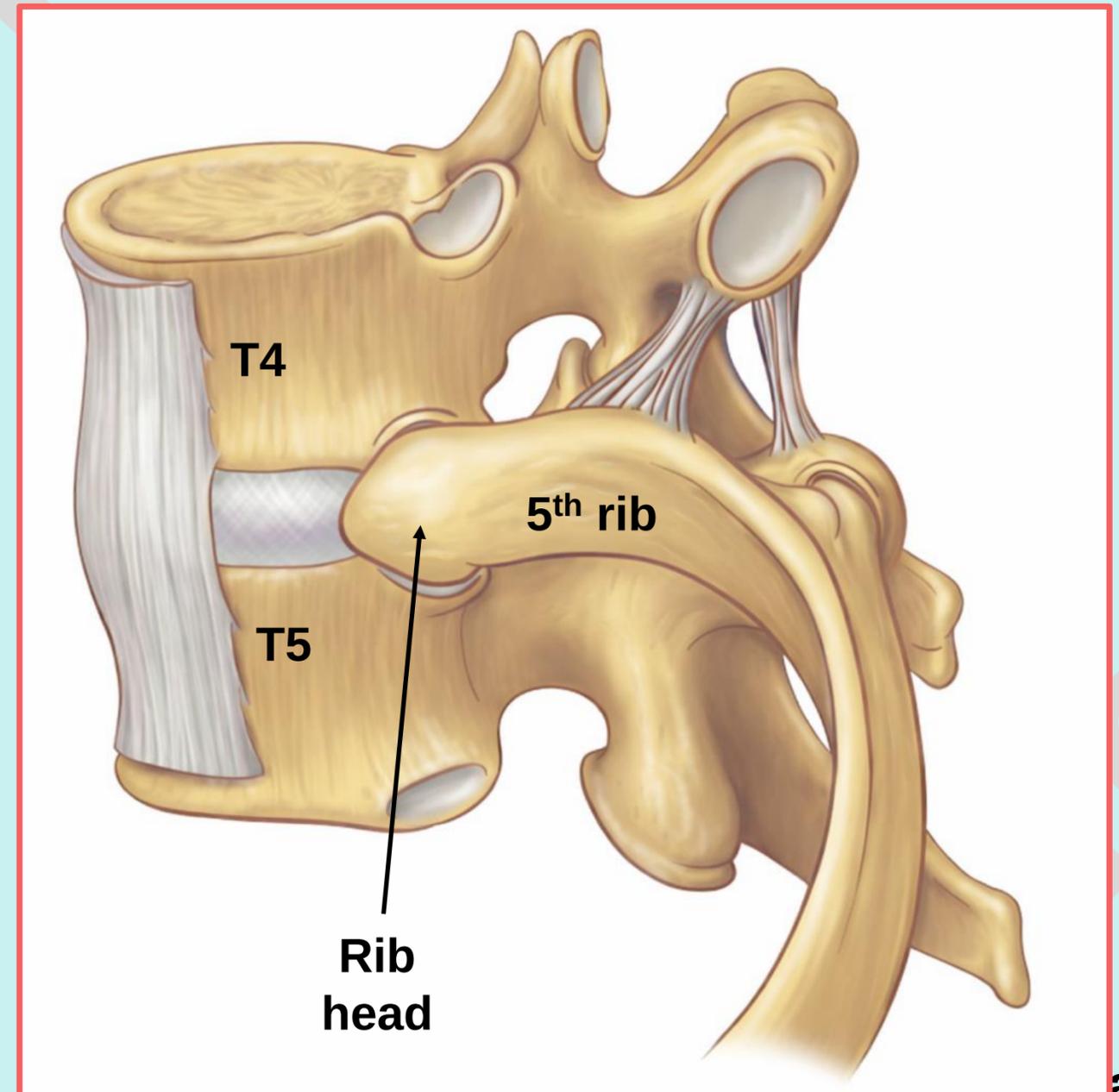
Check List:

2. Thoracic cage

Typical Rib

✓ Describe the articulation of the head of the rib with thoracic vertebrae.

- The head of a typical rib articulates with:
 - the vertebral body above
 - the corresponding vertebral body
 - Intervertebral disc between them
- Example: The 5th rib articulates with:
T4 vertebra, T5 vertebra, T4–T5 intervertebral disc



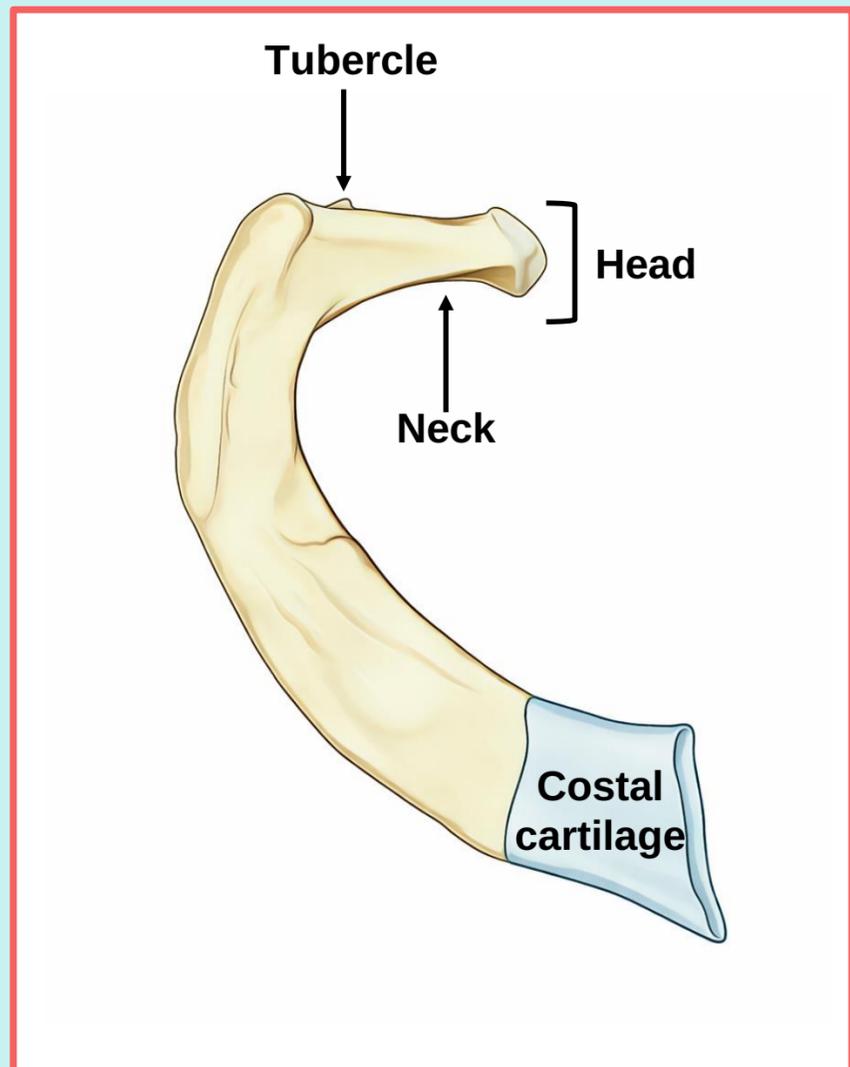
Check List:

2. Thoracic cage

Atypical Rib

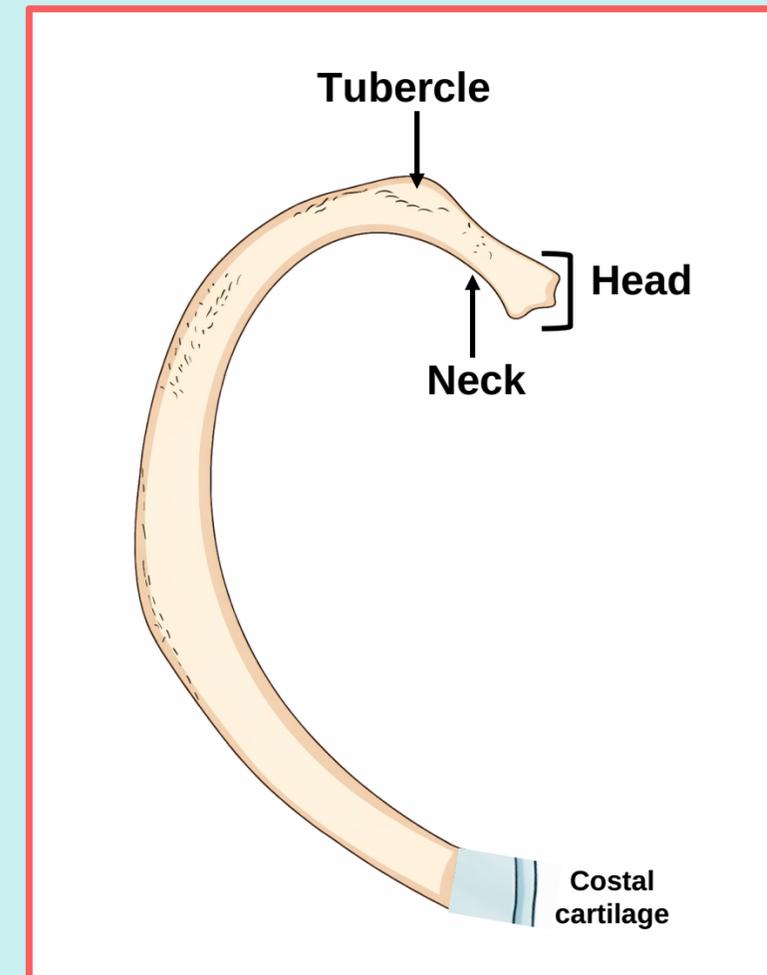
✓ Recognize the 1st rib:

- Articulates with the sternum at the manubrium
- Short, broad, and flattened (horizontally oriented)



✓ Recognize the 2nd rib:

- Articulates with the sternum at the sternal angle
- Longer and thinner than the 1st rib
- More curved and less flattened than the 1st rib

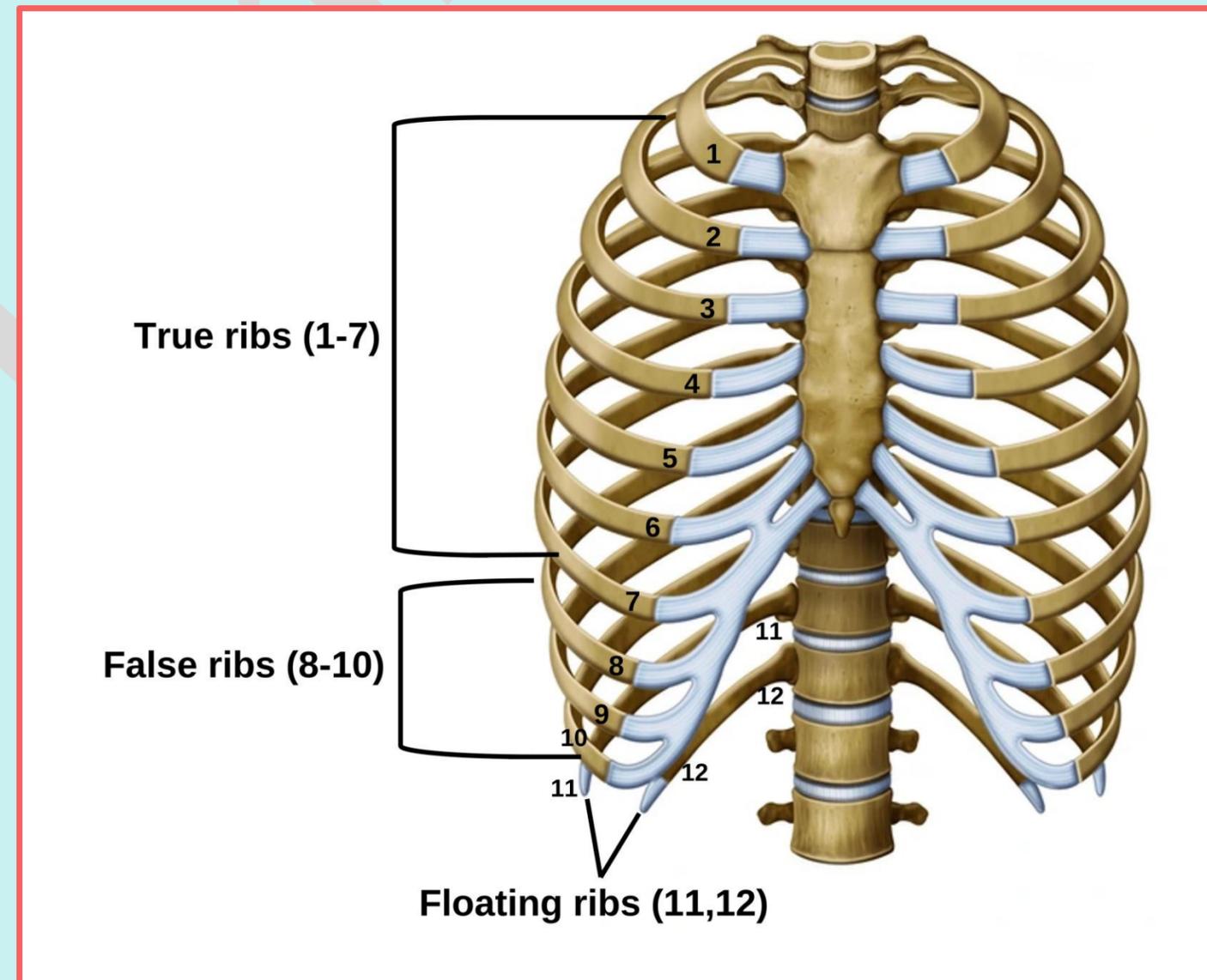


Check List:

2. Thoracic cage

✓ Outline the Classification of Ribs based on their anterior end attachments:

- True ribs (1-7)
- False ribs (8-10)
- Floating ribs (11-12)



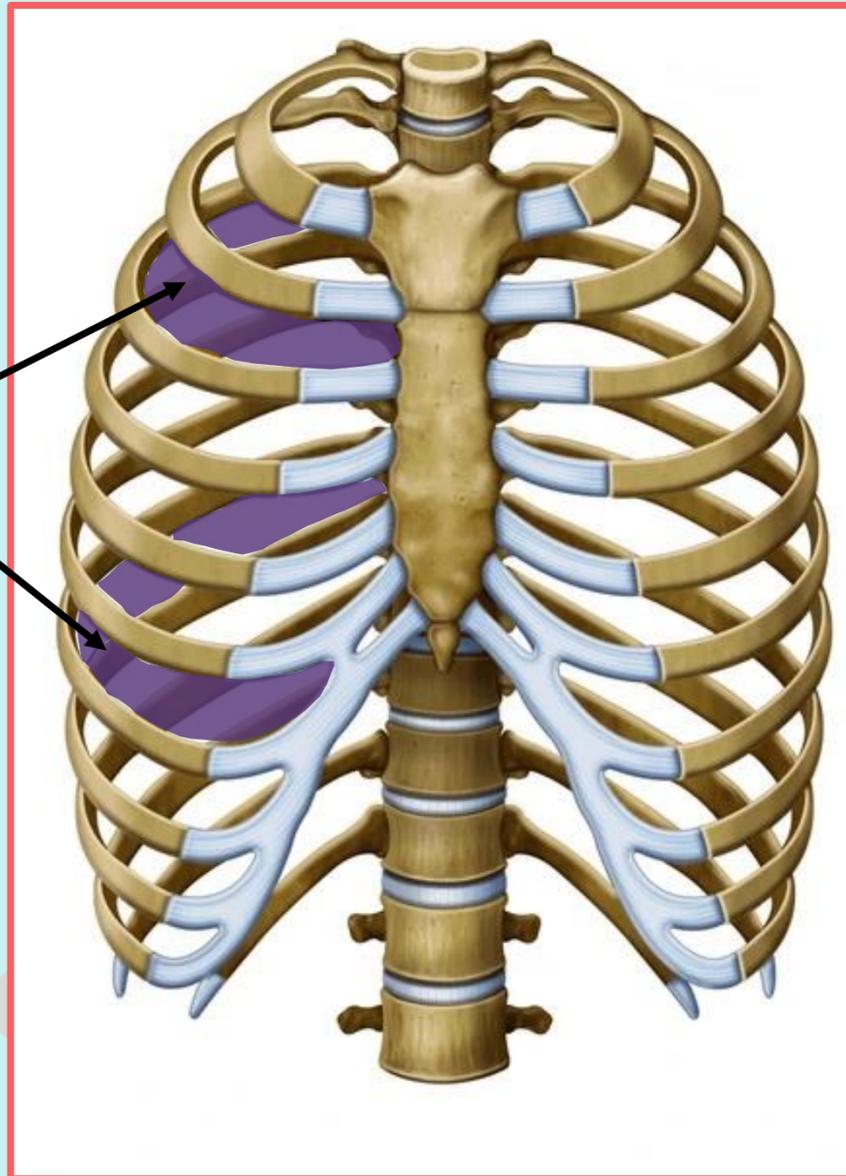
Check List:

2. Thoracic cage

Intercostal Spaces

- ✓ Identify the intercostal spaces on the skeleton provided in the lab.
- ✓ Identify the intercostal muscles on the cadaver provided in the lab.

Intercostal Spaces



Intercostal Muscles

