

September 16, 2026 - Dr. Doroudi (majid.doroudi@ubc.ca)

Dissector

Objectives:

- Identify the intercostal muscles
- identify the manubriosternal junction (sternal angle) and the T_{4/5} vertebral level
- Identify the hilum of the lung
- Describe the components, divisions and extent of the pleural cavities and the mediastinum
- Identify the costodiaphragmatic recess
- Identify the parts of a thoracic vertebra
- Identify the tracheal bifurcation and right and left bronchi
- Identify the right and left phrenic nerves and vagus nerves
- Identify pulmonary arteries and veins
- Identify the main anatomical features of the right and left lungs
- Relate the anatomy of the thorax to frontal and lateral chest radiographs

Use this module for reference:

[Thorax \(Module\)](#)

Watch this dissection guide video:

[Lung Dissection \(Video\)](#)

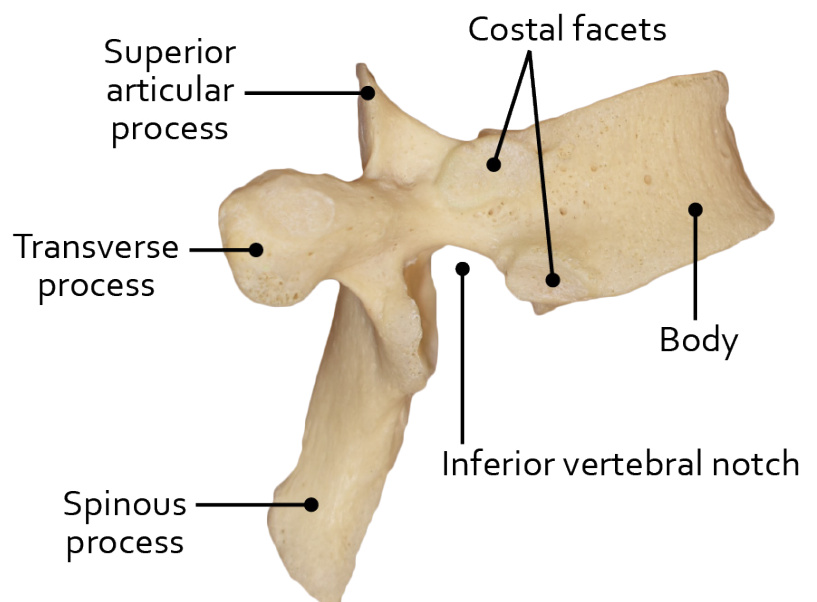
Be able to describe (using lecture & module):

- Boundaries of the thoracic inlet and thoracic outlet
- Anatomical and clinical importance of the horizontal plane joining the sternal angle with the T₄ / 5 intervertebral disc
- How to identify the 2nd rib on a patient
- The gross anatomical features of the thoracic walls and lungs

Osteology & Surface Anatomy:

- A typical thoracic vertebra (*nb.* articular facets for the ribs)

[Thoracic Vertebra \(3D\)](#)



Thoracic Vertebra (lateral)

[Hide Labels](#)

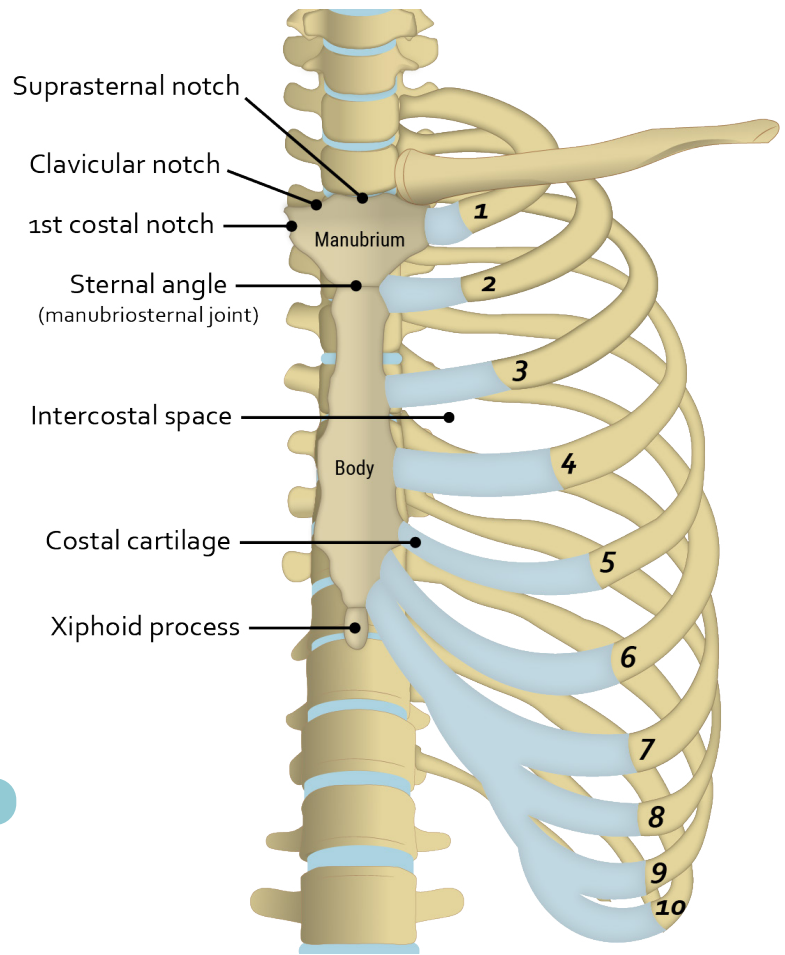
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Sternum:

- ☐ Manubrium (suprasternal notch, facets for articulation of clavicle and 1st & 2nd ribs)
- ☐ Manubriosternal joint and the sternal angle (angle of Louis)
- ☐ Body of sternum (facets for articulation of ribs 2-7)
- ☐ Xiphoid process (xiphisternum) - *not visible in 3D model*

Sternum (Atlas)

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Anterior Ribcage and Sternum

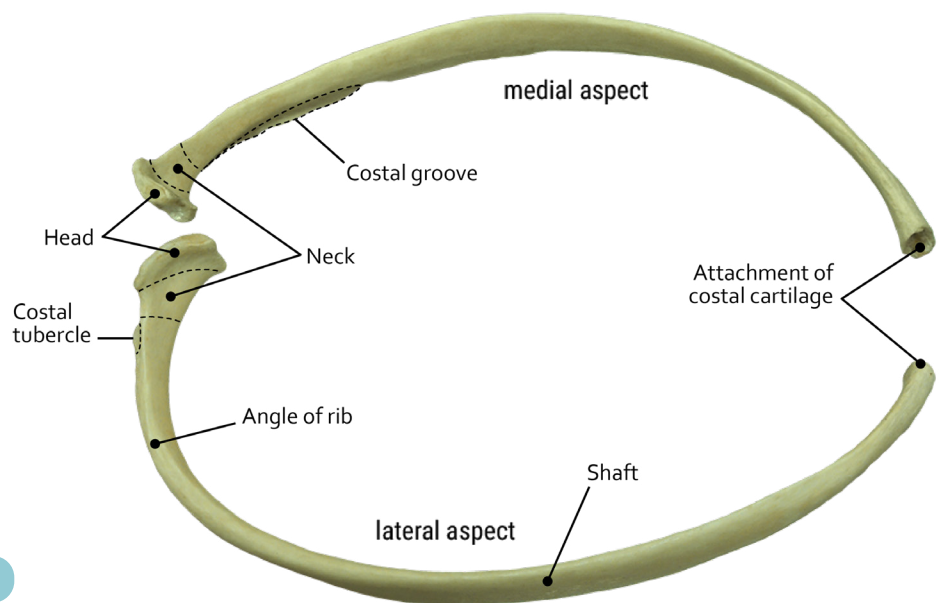
Ribs:

- ☐ A typical true rib (head, neck, tubercle, angle, shaft, costal groove)
- ☐ Costal cartilages
- ☐ Intercostal spaces

Ribs (Atlas)

Rib (3D)

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Typical Right Rib

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Muscles: (module & 3D models)

- ☐ Intercostal muscles (as a group)
- ☐ Diaphragm and its central tendon

Describe the neurovascular contents of an intercostal space:

Arteries & Veins: (3D anterior thoracic wall)

- ☐ Anterior & posterior intercostal arteries and veins
- ☐ Internal thoracic (mammary) arteries and veins

Nerves:

- ☐ Intercostal nerves
- ☐ Phrenic nerves

Be able to describe the course of an intercostal neurovascular bundle and the importance of this for intercostal nerve block and the insertion of chest drains.

Be able to describe the importance of the cervical origin of the phrenic nerves.

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Thorax (Module)

Posterior Thoracic Wall (Atlas)

Anterior Thoracic Wall (3D)

Posterior Thoracic Wall (3D)

Intercostal vein

Intercostal artery

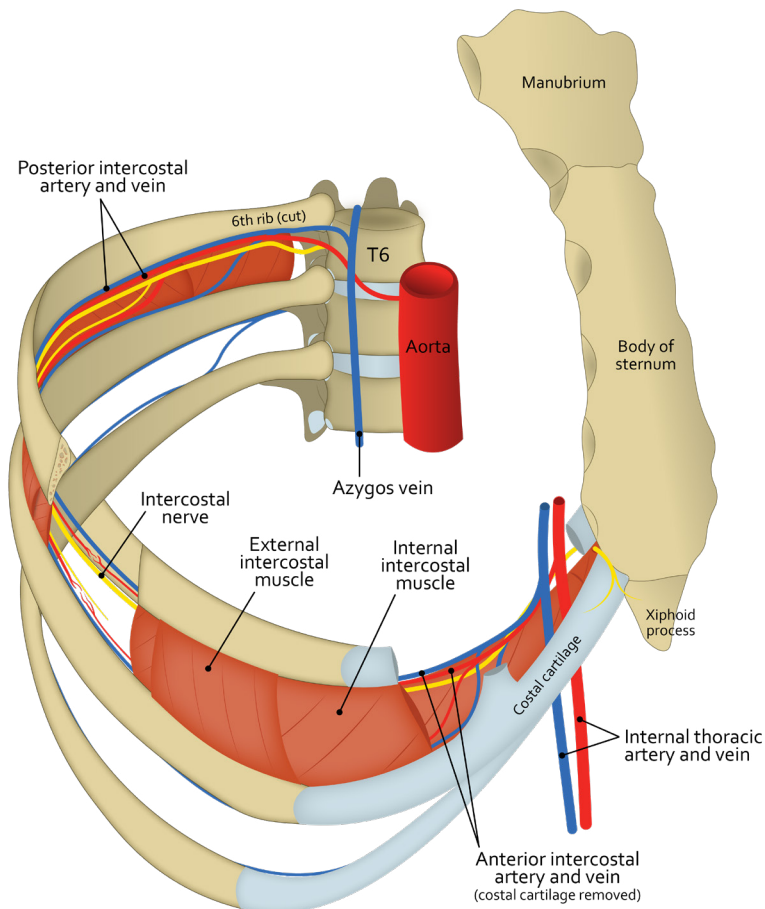
Intercostal nerve

Phrenic nerve

Diaphragm

Neurovasculature of Posterior Thoracic Wall

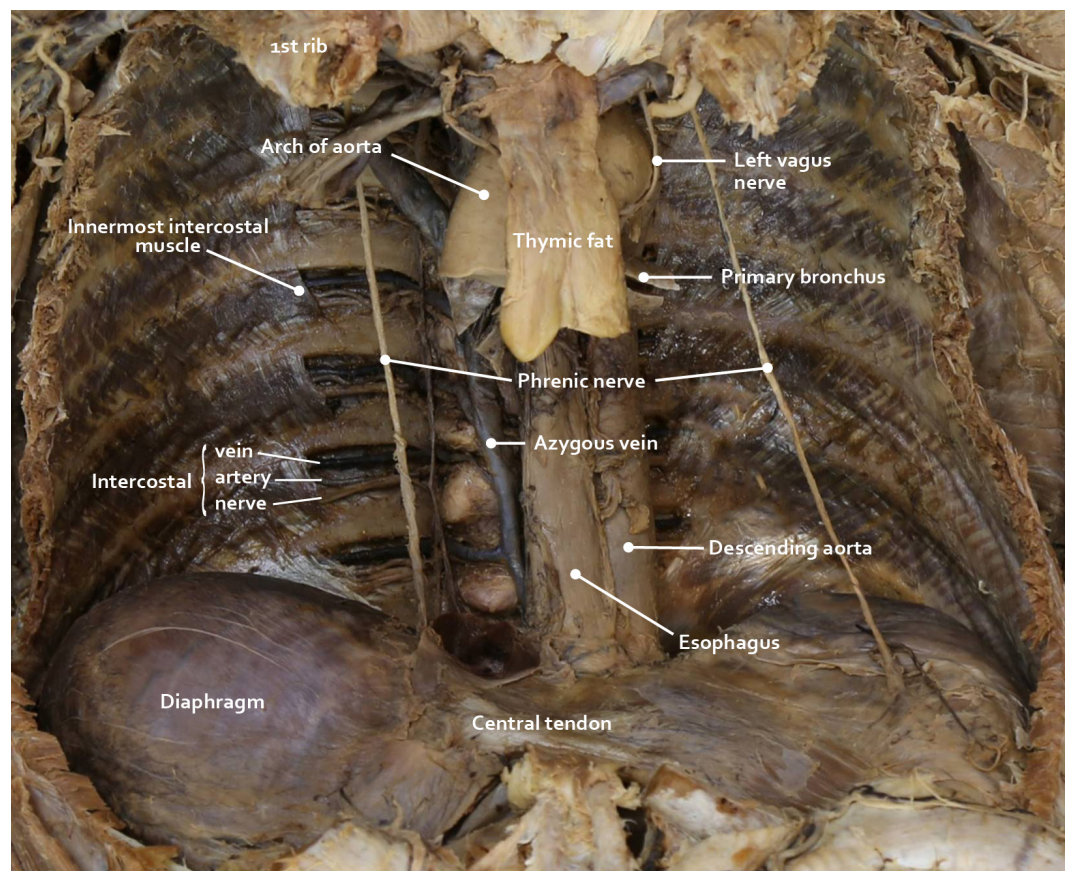
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Contents of Intercostal Space

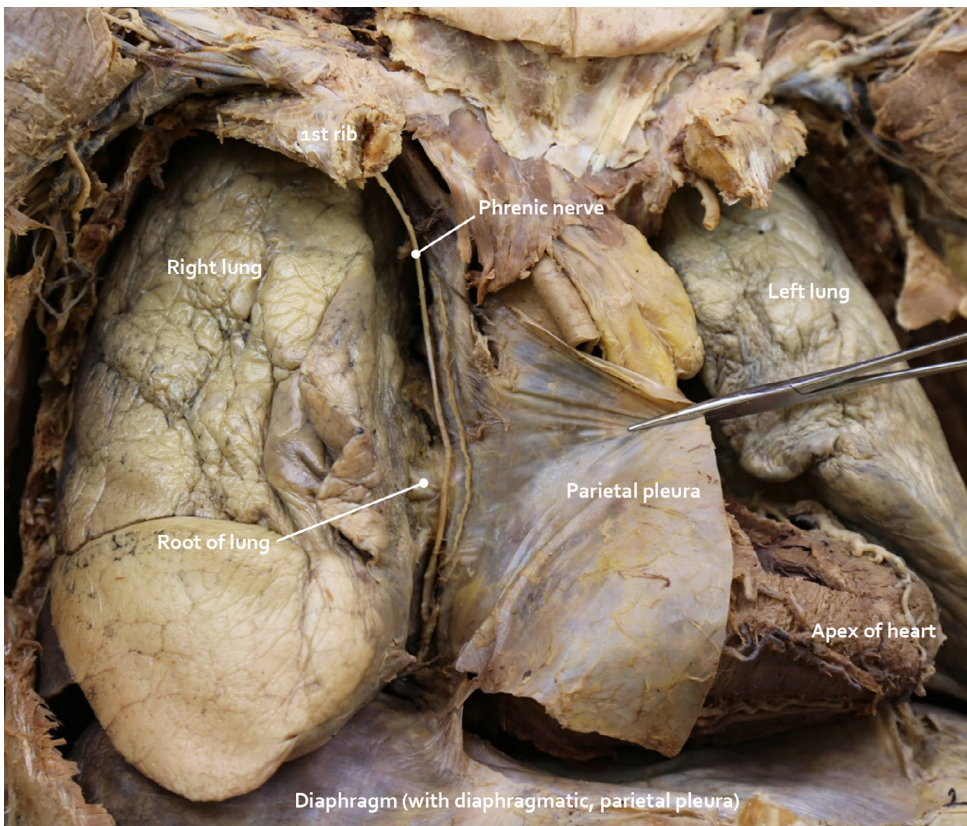
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Posterior Thoracic Wall

(B. Kathleen Alsup & Glenn M. Fox,
University of Michigan Medical
School, [BlueLink](#))

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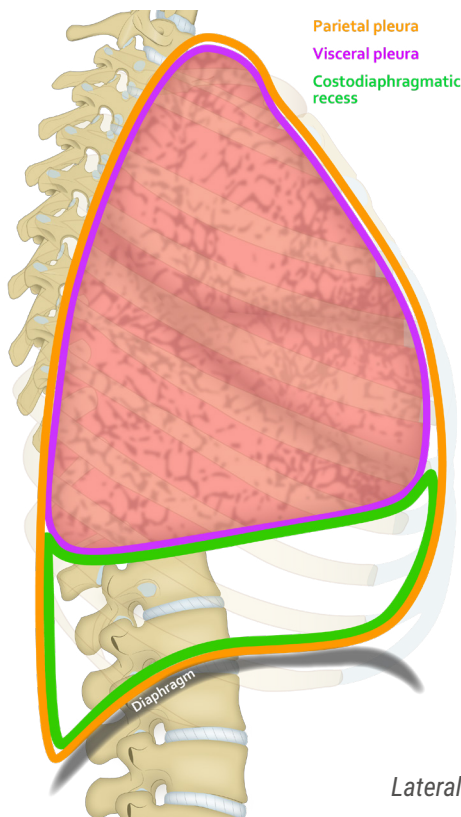
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Lungs in situ

(B. Kathleen Alsup & Glenn M. Fox,
University of Michigan Medical
School, [BlueLink](#))

Suprapleural Membrane:

Be aware of the clinical importance of the pleural cavities rising above the level of the first rib.



Lateral View of Thoracic Pleura

Pleural Cavities: (module)

- ☐ Visceral & parietal pleura
- ☐ Costodiaphragmatic recess

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Mediastinum:

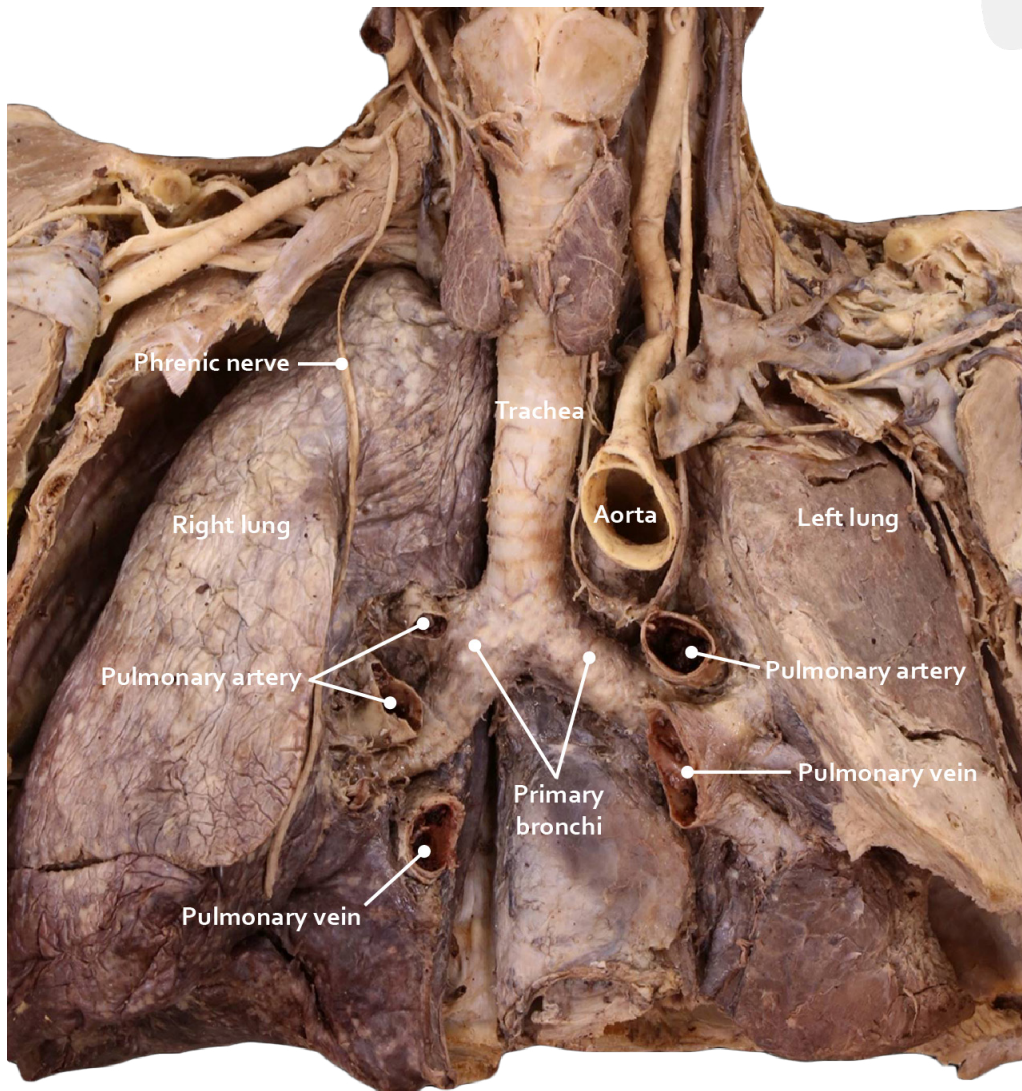
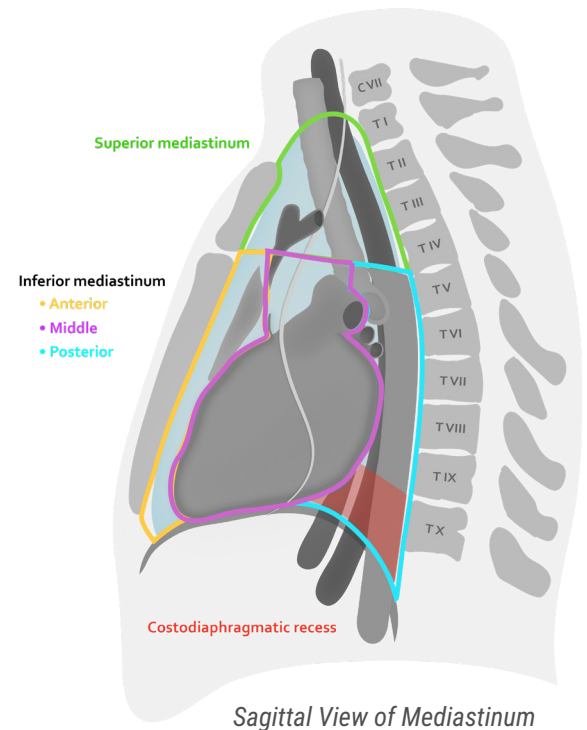
Be able to describe the major anatomical divisions of the mediastinum:

- Superior mediastinum
- Inferior mediastinum (anterior, middle, posterior)

Trachea:

Be able to identify the bifurcation of the trachea and the vertebral level at which this occurs:

Primary (main) & Secondary (lobar) Bronchi ☐



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Lungs in situ

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Links to interactive photographic atlas:

[Lungs + Bronchi \(Atlas\)](#)

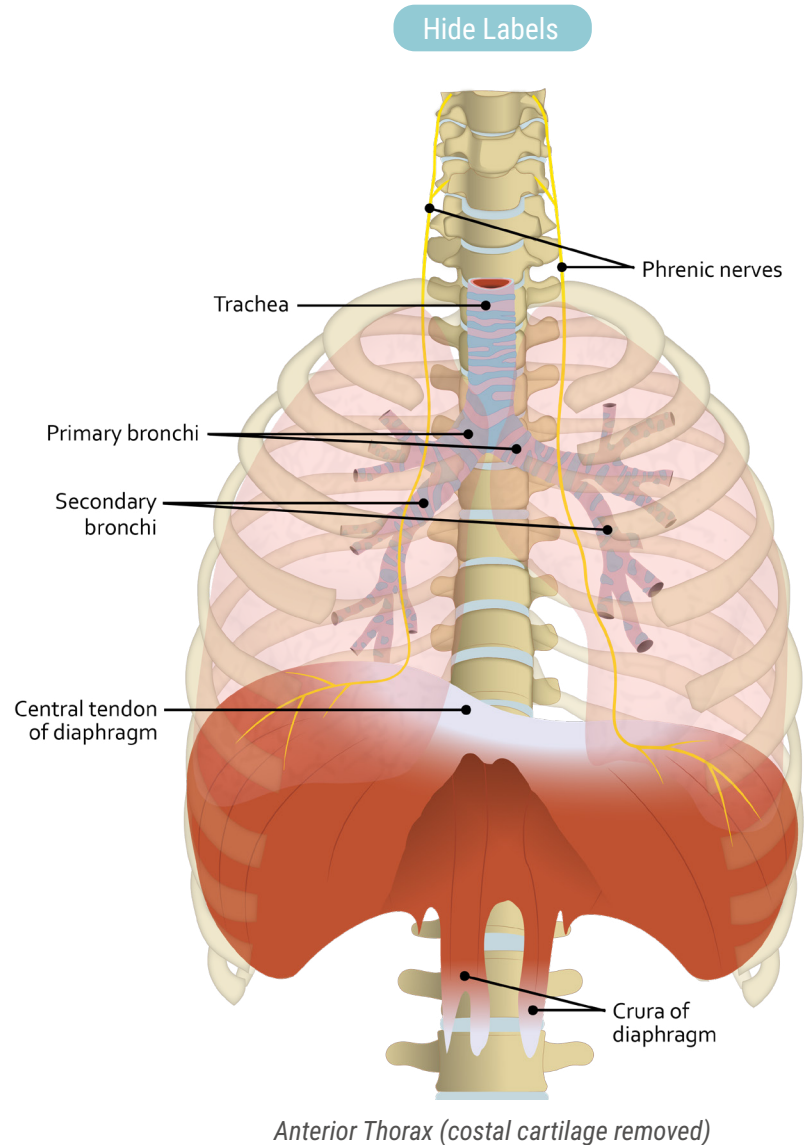
[Lungs in situ \(Atlas\)](#)

[Anterior Lungs \(Atlas\)](#)

[Left Lung Medial \(Atlas\)](#)

[Right Lung Medial \(Atlas\)](#)

[Right Lung Lateral \(Atlas\)](#)



Lungs:

- ☐ Hilum (outlining the root of the lung)
- ☐ Fissures (oblique, horizontal/transverse)
- ☐ Lobes (upper, middle, lower on right; upper, lower on left)
- ☐ Lingula (on left only)

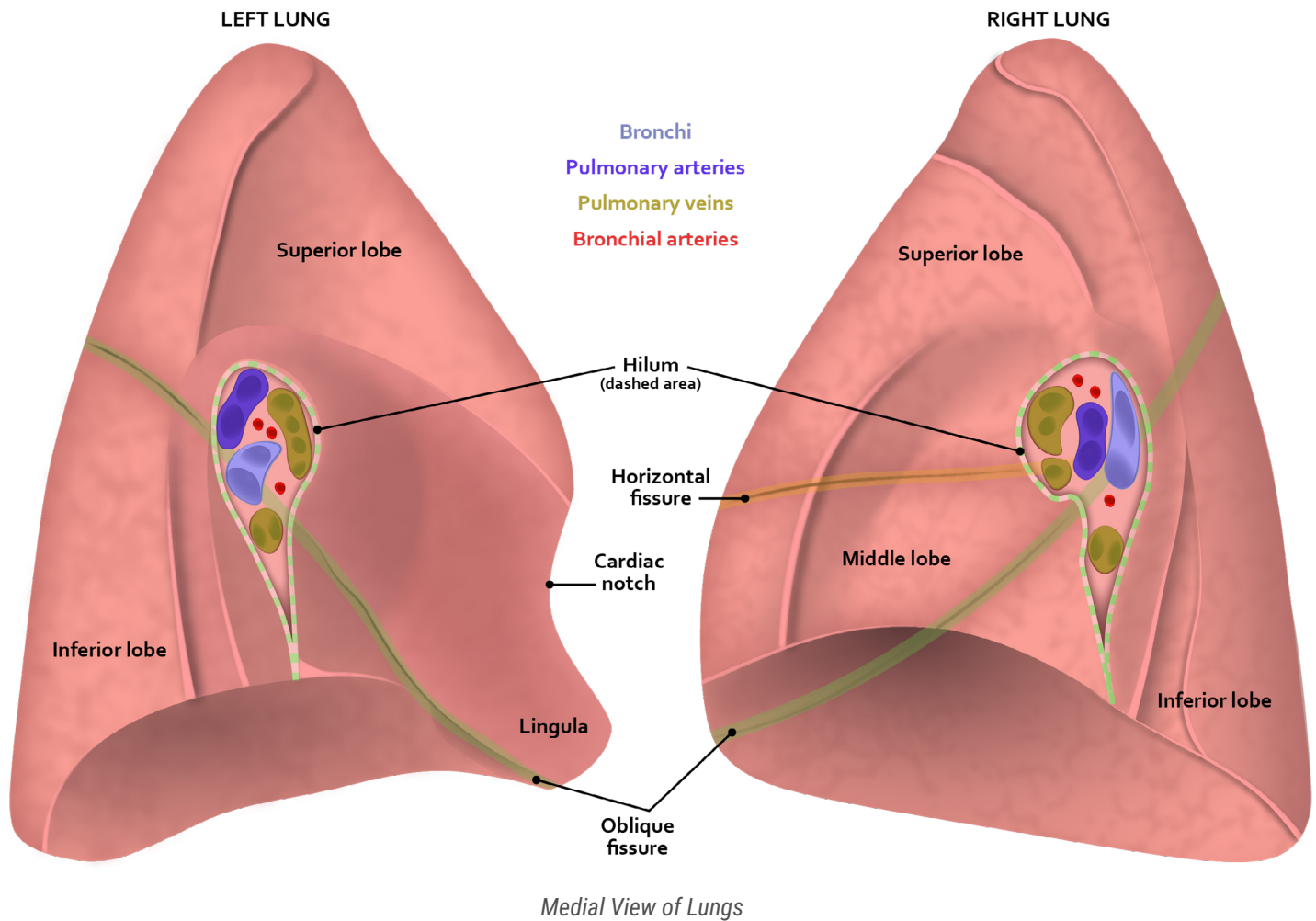
Structures that pass to / from a lung via the hilus / root:

- ☐ Pulmonary artery & vein
- ☐ Primary bronchus
- ☐ Bronchial arteries

[Lungs/Bronchi/Trachea \(3D\)](#)

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Left Lung (3D)

Right Lung (3D)

- Identify the structures in the hilum of the lungs and the anatomy of the lung lobes on the 3D specimens
- Compare the right and left sides

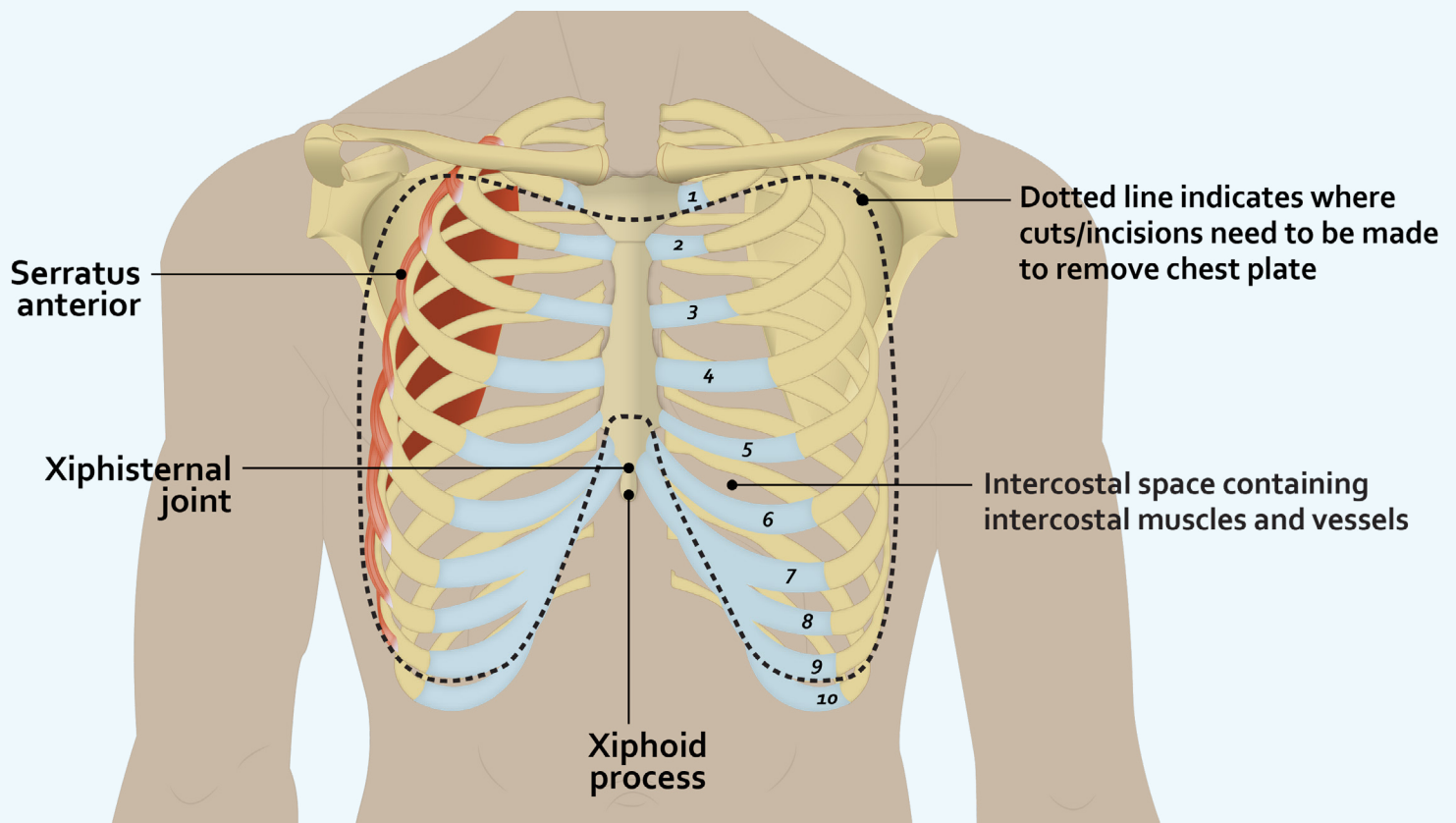
LAB 4 DISSECTOR

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Removing The Chest Wall Guide (Video)

Removal of Chest Wall

1. Identify the clavicles, manubrium, sternal angle and 2nd ribs (see figure below for details).
2. Saw through the manubrium horizontally about 2.5cm (1in) above the attachment of the second rib.
Do not saw too deeply!
3. With a vertical incision through serratus anterior, detach this muscle from the chest wall and reflect the edges superiorly and inferiorly.
4. Using scalpel, incise the first intercostal spaces on both sides.
5. Using bone crushers, cut rib 2 as far laterally as possible. Then cut ribs 3 - 8/9 by incising inferiorly and as far laterally as possible. *Caution: cut ribs are extremely sharp!*
6. Cut along (~2.5cm or 1in above) the costal margins to the xiphisternum. This can usually be done with scissors. *Do not cut too deeply!*
7. Remove the chest plate.



Removal of the chest wall

LAB 4 DISSECTOR

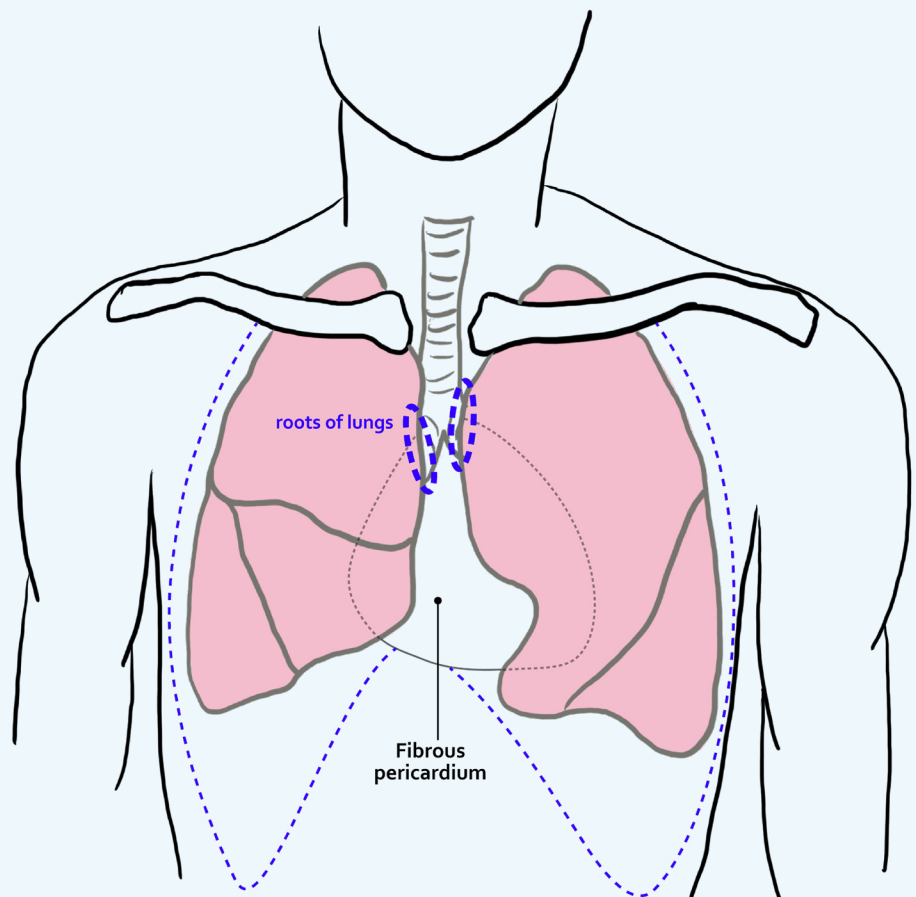
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Lung Region Dissection Guide (Video)

1. Remove the chest plate.
2. Examine intercostal spaces and contents from the posterior. Identify **internal thoracic arteries** and **veins**.
3. With lungs in place, identify and define the parietal and visceral layers of pleura. Place hand in pleural cavity on each side and define its extent. **Note that pleural cavities (and lungs) rise above the level of the first rib.**
 - Identify the **costodiaphragmatic recess** on each side
4. Identify the 'root' of each lung and pass fingers posteriorly to define its size. Cut through the root of each lung with a scalpel (**see figure**) and, using both hands, carefully remove each lung.
5. Identify the fissures and lobes of each lung and examine the major components of the roots (pulmonary A. and V., primary bronchus).
6. With the lungs removed, examine the extent of each pleural cavity and reflect some parietal (costal) pleura from the posterior chest wall. Also identify and dissect out the phrenic nerves.

Note the greater and lesser splanchnic nerves.

7. Replace lungs and chest plate at the end of the lab.



Anterior view showing incision locations at root of each lung (step 4)