


LAB 8: DISSECTION: CHEST WALL, OVERVIEW OF THORACIC CAVITY

9/28/2021

— TO OPEN THIS PAGE ON THE LAB MONITORS

1. Turn on the monitor.
2. Choose a browser (Chrome or Firefox—either is fine!).
3. Tap the URL field at the top of the screen to highlight.
4. Tap the keyboard icon  in the bottom right-hand corner.
5. Enter this URL: <https://tinyurl.com/4ffryuj8>

+ TO DOWNLOAD A PDF OF THIS LAB GUIDE

Table of Contents

Bony Thorax

Sternum

Ribs and rib cage

Joints of the Thoracic Wall

Inspect the anterior thoracic wall

Remove the anterior thoracic wall

Inspect the posterior surface of the

Explore the pleura and pleural cavity

Inspect the extent of the parietal

Inspect the internal thoracic wall

The Mediastinum

Superior Mediastinum

Superior Mediastinum

Big Picture of Superior Mediastinum

Posterior Mediastinum

Azygos System

GOALS

- 1 Clean the thoracic body wall to demonstrate the sternum, ribs, costal cartilages, and intercostal spaces
- 2 Remove the anterior thoracic wall; Inspect the pleural sacs and mediastinum
- 3 Open the pleural sacs and define the pleural cavity, parietal pleura, and visceral pleura
- 4 Remove the right lung
- 5 Strip pleura from right side and clean structures of the posterior wall
- 6 Clean and demonstrate the structures in the superior mediastinum.
- 7 Review the blood supply and venous drainage of the thoracic wall.
- 8 Identify the sympathetic trunk.

BONY THORAX

Identify the following parts on bone specimens:

Sternum

- **Manubrium, body, and xiphoid process**
- **Suprasternal notch and sternal angle**

? What is the significance of the sternal angle?

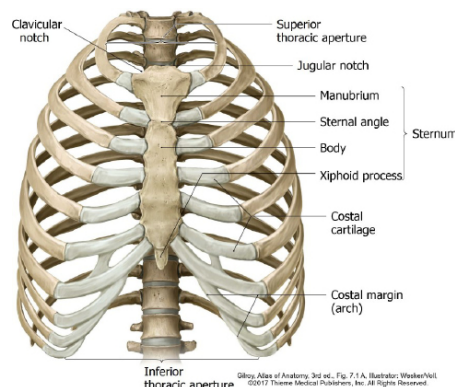


Figure 8.1.



David Conley, PhD

Office: PBS 41A



Shannon Helbling, PhD

Office: PBS 41C



Ribs and rib cage

- **Ribs and costal cartilages**

Ribs and rib cage

- **Ribs and costal cartilages**
- **True ribs** = 1–7 [Why are they named as such?]
- **False ribs** = 8–12 [Why are they “false”?]
- **Floating ribs** (subset of false ribs = 11 and 12)
- **Costal margin**
- **Superior thoracic aperture**

What are the bony boundaries of the superior thoracic aperture?

❓ What structures traverse the aperture?

How do the lungs and pleura relate to the aperture?

The parts of a rib:

- **Head**
- **Tubercle**
- **Shaft**
- **Angle**
- **Costal groove** (what structures occupy this?)

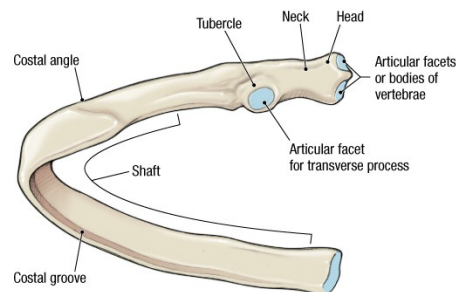


Figure 8.2. Grant's Dissector, 16th ed., Figure 3.2.

❓ What are the gaps between adjacent ribs called?

Joints of the Thoracic Wall

- **Costovertebral joints**—articulations between the rib head and the body/bodies of thoracic vertebrae.
- **Costotransverse joints**—articulations between the rib tubercle and the transverse processes of vertebrae.

The joints of the thoracic wall are **plane (gliding) joints**. Only slight movements occur at them. These movements are magnified at the distal ends of the ribs, to produce elevation of the ribs and sternum during respiration.

- **Costochondral joints**—unlike the two joints listed above, these are not synovial type joints. Costochondral joints are the fusion of the distal part of a rib to the costal cartilage. No movement occurs here—but pain can occur here due to inflammation (costochondritis) or separation of the joint due to trauma.

INSPECT THE ANTERIOR THORACIC WALL

On the cadaver, identify these features of the thoracic wall:

- **Manubrium, body, and xiphoid process** of the **sternum**
- **Suprasternal (jugular) notch** and **sternal angle**
- **Ribs and costal cartilages**
- **Costal margin**
- **Intercostal spaces** filled with **intercostal muscles**
- **Costochondral junctions**, where ribs fuse with **costal cartilages**. You may be able to identify these as a change in color—the ribs are often paler than the costal cartilages. The costochondral junctions are an inch or two lateral to the sternum.
- Lateral to the costochondral junctions, identify the **external intercostal**



- Lateral to the costochondral junctions, identify the **external intercostal muscles**. You will note that the muscle fibers run in an oblique direction inferomedially (like putting your hands in your front pockets). An **external intercostal membrane** (an aponeurosis) replaces the external intercostal muscle between the costochondral junction and the sternum (producing a see-through “window”).
- Adjacent to the sternum (and seen through the external intercostal membrane), identify the **internal intercostal muscles** = fibers run in an oblique direction inferolaterally (at a right angle to the external intercostal muscles).

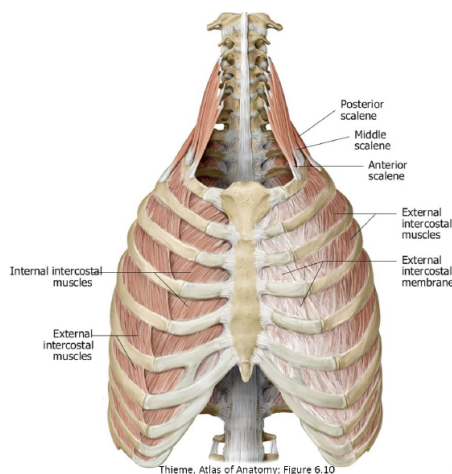


Figure 8.3.

You will see the **innermost intercostal muscles** when you remove the chest wall from your cadaver.



COMPLETE ANATOMY: MUSCLES OF CHEST WALL

REMOVE THE ANTERIOR THORACIC WALL FROM YOUR CADAVER

We will do this in two steps:

- 1 Cut ribs, sternum, and clavicle with bone cutters and autopsy saw
- 2 Incise soft tissues, elevate body wall, and remove from the cadaver.

PREP WORK

✍ Prior to lab, ribs 2–6 were cut for you along the mid-axillary lines. Yay! Thank you, instructors & PALs! The clavicles were cut for you too, at their midpoints.

- 1 With a scalpel, make incisions bilaterally through the 6th intercostal spaces, from the midaxillary lines laterally (where the ribs were cut) to the costal cartilages medially. Don't go too deep—you'll damage the diaphragm or lungs! **See blue lines in Figure 8.4.**
- 2 With an autopsy saw or bone cutters, cut across the costal cartilages and sternum. **See red line in Figure 8.4.**

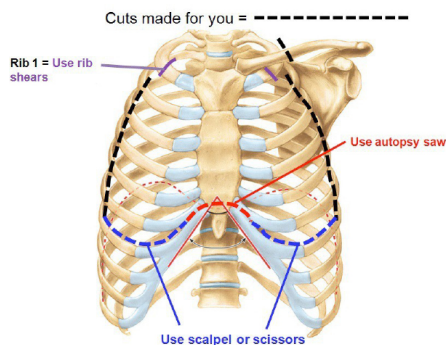


Figure 8.4. Clinically Oriented Anatomy.

NOTE

✍ There are a limited number of autopsy saws, so you may need to wait until one of these becomes available, or use the heavy-duty bone cutters.

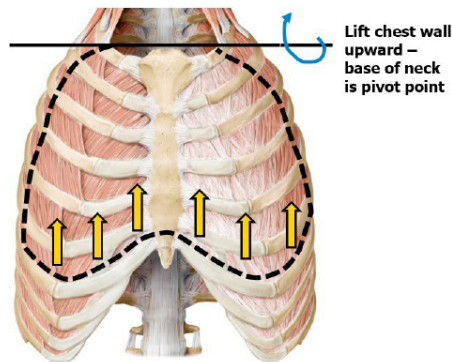
If your cadaver had a sternotomy, and there are steel wires in the sternum, **DO NOT USE**

NOTE

There are a limited number of autopsy saws, so you may need to wait until one of these becomes available, or use the heavy-duty bone cutters.

If your cadaver had a sternotomy, and there are steel wires in the sternum, **DO NOT USE** the autopsy saw, because the wires will damage the blade. Use the bone cutters instead.

- Have one member of your team begin elevating the anterior thoracic wall from inferior to superior, like lifting the hood of a car. Take care not to enter the peritoneal cavity below.



Ginn, Atlas of Anatomy, 3rd ed., Fig. 7.10. Illustrator: Wesker/Kill. ©2017 Thieme Medical Publishers, Inc. All Rights Reserved.

Figure 8.5.

- As the chest wall is lifted, another team member will use scissors to cut loose the soft tissues that are holding it down inside the thoracic cavity, especially the **sternopericardial ligament**. See Figure 8.6.

As chest wall is lifted, cut sternopericardial ligament with scissors

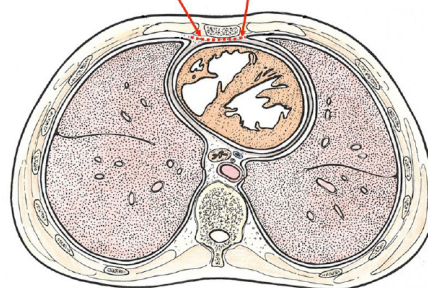


Figure 8.6.

Try your best to peel away the **costal pleura** from the inside of the body wall and leave it against the lungs, thus keeping the **pleural sacs** intact.

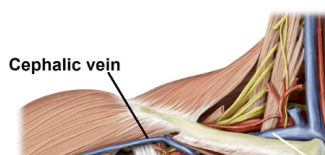
TAKE CARE

Rib fragments are sharp!

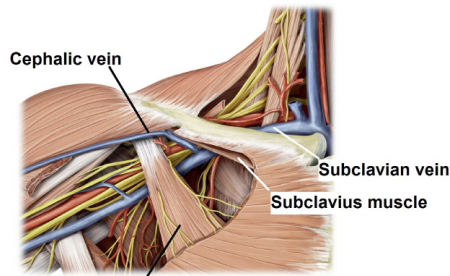
Once the chest wall is elevated from inferior to superior, the structures preventing its complete detachment are the **first ribs** and **neck muscles** attaching to the superior margins of the sternum and clavicles. You will cut these loose with rib shears, scalpel, and scissors.

Pause here and consider the course of the **subclavian vessels**. They pass from neck to axilla through the spaces between the first ribs and clavicles. Consider this as you remove the chest wall—we would like to preserve the subclavian vessels for later study. **Which of the vessels is most superficial, and thus right under the clavicle = subclavian artery or vein?**

- Use blunt dissection (fingers) to loosen up the space between first ribs and clavicles, prying away the subclavian vessels from the inferior surface of the



- Use blunt dissection (fingers) to loosen up the space between first ribs and clavicles, prying away the subclavian vessels from the inferior surface of the clavicles.



Pectoralis minor
Schuenke, Atlas of Anatomy Vol. 1, 2nd Ed., Fig. 18.37b C, Illustrator: Karl Wesker, ©2017 Thieme Medical Publishers, Inc. All Rights Reserved.

Figure 8.7.

- With scissors, cut through the small **subclavius muscle** on both sides located between the clavicle and rib 1.
- Have a team member lift the chest wall. Another team member will locate the first rib by palpation, then cut it by sliding a **rib shear** under the rib and squeezing the handles together. You will feel and hear the rib collapse. Do this on both sides. See purple lines in Figure 8.8.

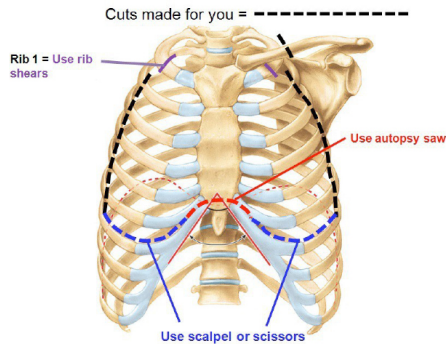


Figure 8.8.

- The last obstacle will be neck muscles attaching to the sternum and clavicles. Use a scalpel to cut the attachments of the **sternocleidomastoid muscles** from the superior border of the clavicles and manubrium. See Figure 8.9.

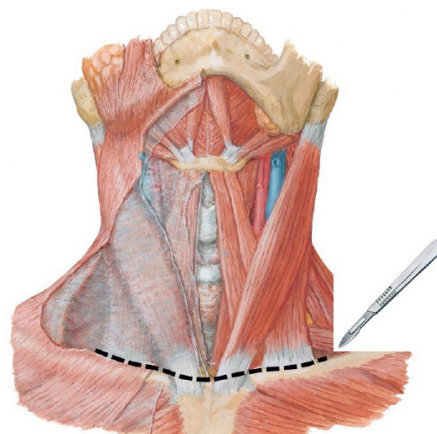
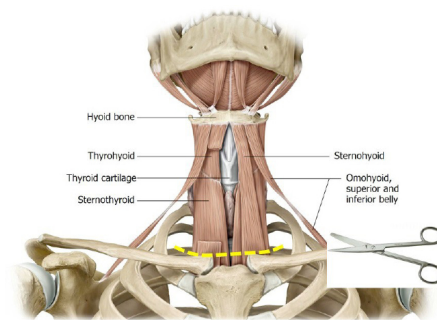


Figure 8.9. Netter, Atlas of Human Anatomy, Plate 27.

- Lift up the chest wall and cut away the **infra-hyoid (strap) muscles** from the deep surface of manubrium where they attach. **See** Figure 8.10. Trim these carefully, as the **cervical pleura** and the **subclavian and brachiocephalic veins** are close by and can be easily damaged.
- Realize that this cutting will also transect the **internal thoracic arteries**. **From which artery do these originate?** The internal thoracic arteries course from superior to inferior internal to the ribs, just lateral to the sternum.



Olney, Atlas of Anatomy, 2nd ed., Fig. 39.5 C, Illustrator: Karl Wesker, ©2017 Thieme Medical Publishers, Inc. All Rights Reserved.

Figure 8.10.

INSPECT THE POSTERIOR SURFACE OF THE CHEST WALL

In an ideal world, the pleural sacs will be left



INSPECT THE POSTERIOR SURFACE OF THE CHEST WALL

In an ideal world, the pleural sacs will be left intact after the body wall is removed. That is, the **costal layer of the parietal pleura** would be peeled away from the rest of the body wall and left covering the anterior lungs—the lungs would be visible through the costal pleura (see Figure 8.11: a fantasy dissection!)

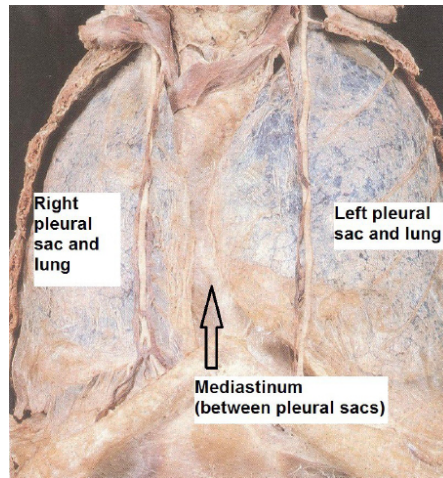


Figure 8.11. The pleural sacs are intact around the lungs and the internal thoracic arteries have been left intact after removal of the chest wall. Nice dissection!! Gosling et al. Atlas of Human Anatomy, Lippincott.

It is likely however that the anterior-most part of the parietal pleura (the most internal layer of the body wall) was severed when the ribs were cut and that this pleura was torn away from the pleural sacs when the chest wall was removed. If this is the case, then the most internal layer of the chest wall you removed will have a shiny appearance and smooth texture.

Peel some of this away to verify that it is the **costal layer of parietal pleura**.

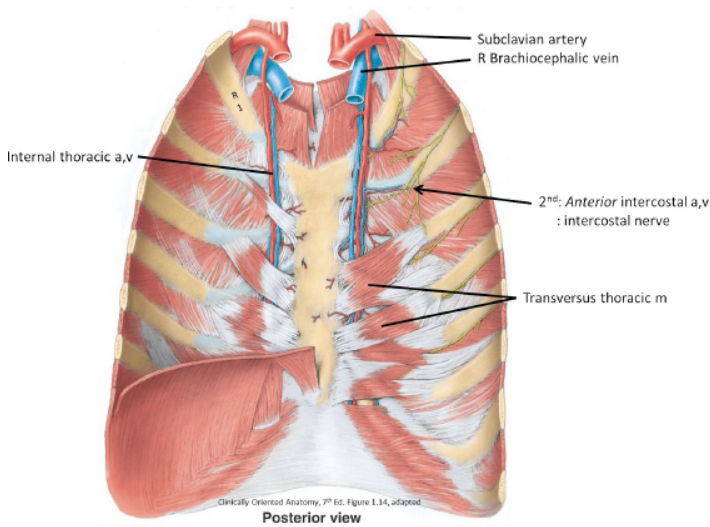


Figure 8.12.

- 1 Now locate the **transversus thoracis** muscles—small oblique muscles running from costal cartilages to sternum. These are part of the innermost muscle layer of the thoracic wall. (See Figure 8.12).
- 2 Use scissors to cut away the transversus thoracis on one side to reveal the **internal thoracic artery & veins** (the veins are paired). The arteries are branches of the **subclavian arteries**.
- 3 Try to spot small **anterior intercostal arteries** branching from the internal thoracic artery and entering the intercostal spaces. These anastomose with the **posterior intercostal arteries** (branches of the thoracic aorta) at the midpoint of the intercostal spaces—near the mid-axillary line.

- 3 Try to spot small **anterior intercostal arteries** branching from the internal thoracic artery and entering the intercostal spaces. These anastomose with the **posterior intercostal arteries** (branches of the thoracic aorta) at the midpoint of the intercostal spaces—near the mid-axillary line.

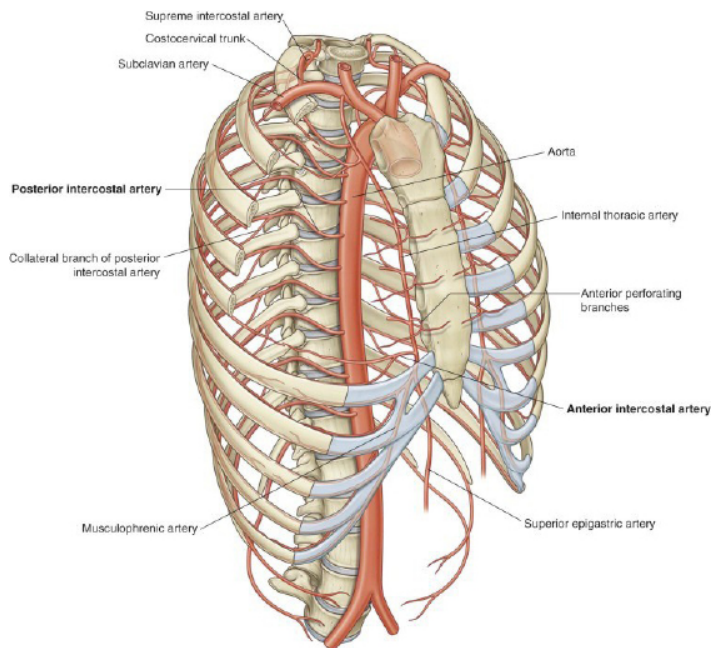


Figure 8.13. Grays Anatomy for Students, 3rd ed.



COMPLETE ANATOMY: POSTERIOR SURFACE OF CHEST WALL

Discuss:

The **neurovascular plane** of the thoracic body wall is between the 2nd and 3rd muscle layers = between the internal and innermost intercostal muscles. In this plane run the segmentally arranged nerves and vessels of the body wall. Can you spot the anterior intercostal arteries disappearing beneath the deepest (3rd) muscle layer to enter the neurovascular plane?

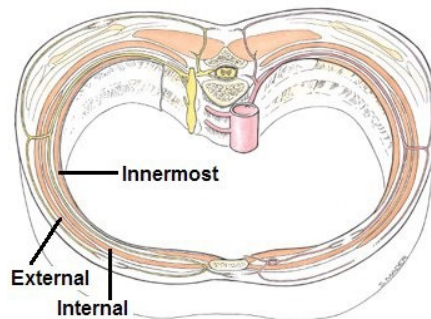


Figure 8.14.



COMPLETE ANATOMY: INTERCOSTAL SPACE

EXPLORE THE PLEURA AND PLEURAL CAVITIES

Most likely, a good deal of the **costal pleura** has been removed when the chest wall was lifted off the cadaver. If you are lucky enough to have it intact: use scissors to cut large slits in the costal pleura in order to open both **pleural sacs**.

With your hands, explore the **pleural cavities** all the way around the lungs, freeing up any fibrous adhesions that have obliterated parts of the pleural cavities.

With your hands, explore the **pleural cavities** all the way around the lungs, freeing up any fibrous adhesions that have obliterated parts of the pleural cavities.

These are common in cadavers and if not removed they can cause lung tissue to be sheared off when the lungs are removed. You don't want to do that.

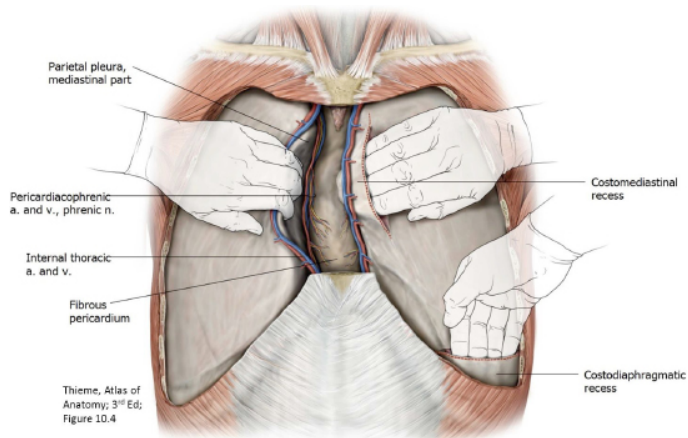


Figure 8.15.

! BE CAREFUL OF THE SHARP EDGES OF THE CUT RIBS.

Realize that your hands are in a potential space between parietal and visceral layers of pleura.

The one area where you won't be able to pass your gloved hand around the lung is medially where the lung faces the mediastinum.

This is where the **root of the lung** is located. The structures that comprise the root of the lung are the **pulmonary arteries**, **pulmonary veins**, and **main bronchi** that travel in/out of the lungs.

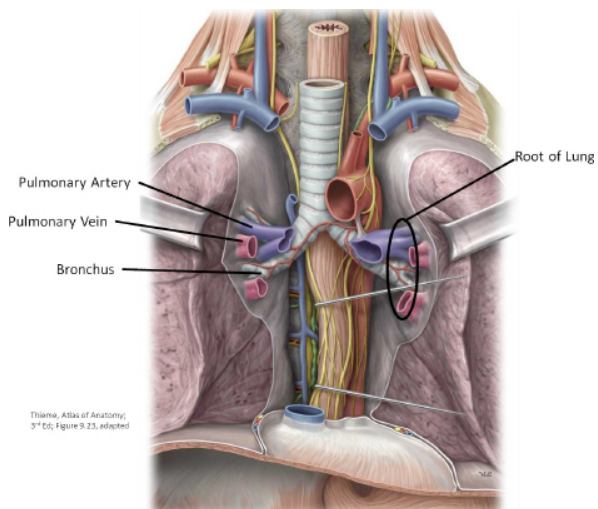


Figure 8.16.

CHALK TALK

Review the parts of a serous sac = parietal layer



CHALK TALK

Review the parts of a serous sac = parietal layer and visceral layers of serous membrane and the serous cavity between them. Get the important concept of serous sac down now!

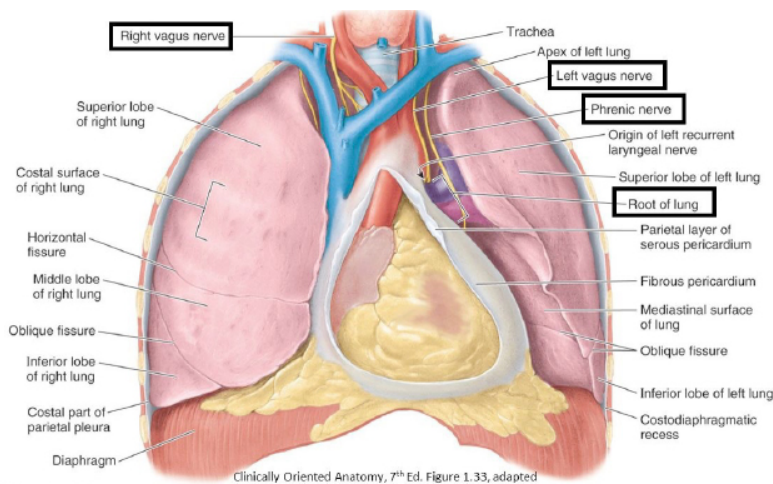


Figure 8.17.

The parietal pleura is associated with the body wall, while visceral pleura is associated with an organ (the lung). Which parts of the nervous system innervate each? How would pain be perceived from each?

Remove the right lung.

- 1 Make sure any adhesions within the right pleural cavity has been removed.
- 2 Locate the **phrenic nerves** between the fibrous pericardium and the mediastinal parietal pleura first! **The phrenic nerves (made from C-3, C4, and C-5 spinal nerves) pass anterior to the roots of the lungs.**
- 3 Have one of your teammates retract the **RIGHT** lung away from the mediastinum, so that the lung root (with its pleural covering) can be seen. Another team member will then use a knife or scalpel to carefully cut through the root of the lung, closer to the lung than the mediastinum. **DON'T CUT THE PHRENIC NERVES.**
- 4 Don't push your scalpel all the way to the posterior wall—you'll cleave off the posterior lung!
- 5 After the lung has been freed, lift it out of the thoracic cavity.



(C) Anterior view
Figure 8.18.

INSPECT THE EXTENT OF THE PARIETAL PLEURA AND PLEURA CAVITIES



COMPLETE ANATOMY: PLEURAL SACS

IDENTIFY and trace the four named parts of the parietal pleura:

- **Cervical (aka = cupula)**



IDENTIFY and trace the four named parts of the parietal pleura:

- **Cervical (aka = cupula)**
- **Mediastinal**
- **Diaphragmatic**
- **Costal**

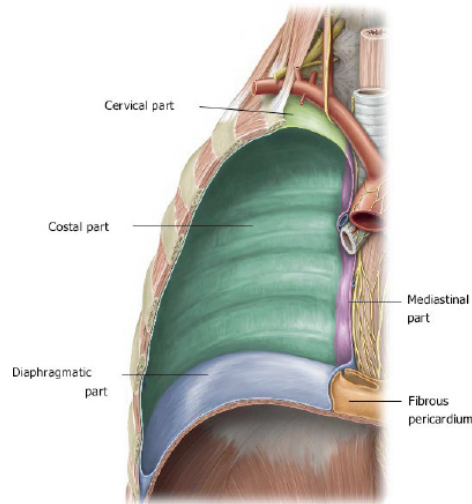


Figure 8.19.

Trace the cervical pleura upwards—note that it extends into the root of the neck. The apex of the lung fits snugly into this region. What is the name of the depression on the surface of the body wall, superior to the clavicle? The cervical pleura and apex of the lung are deep to this landmark. Realize that wounds to the lower neck could therefore enter the pleural cavity!

INSPECT THE INTERNAL THORACIC WALL

Remove the costal and mediastinal pleura

Use scissors and forceps to cut/strip away the costal and mediastinal pleura from the inner body wall and the mediastinum, respectively. Do this on the side you removed the lung. Be careful when stripping off the mediastinal pleura—preserve the **phrenic and vagus nerves**.

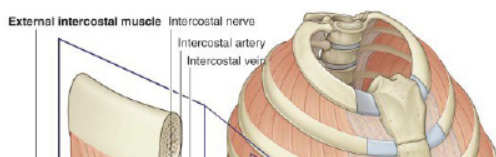
With the parietal pleura removed, you will see the innermost muscle layer between the ribs. The innermost muscle layer is an incomplete layer—consisting of three named parts:

- 1 At the mid-axillary line, this layer is called the **innermost intercostal muscle**.
- 2 Posteriorly/inferiorly, this layer is called **subcostal muscle (note that muscle fibers of the subcostal portion span more than one intercostal space)**.
- 3 The anterior-most part of this muscle layer consists of the **transversus thoracis muscles** (you saw these on the posterior side of the chest wall that you removed earlier).

Starting near the vertebral column, look for the **neurovascular bundle** (vessels and nerve) along the inferior border of a rib = **V**ein, **A**rtery, and **N**erve (specific names?) Follow these vessels laterally until they disappear behind the innermost muscle layer to pass into the neurovascular plane of the body wall (between 2nd and 3rd layers of muscle).

In the neurovascular plane, coursing along the inferior border of a rib (in the **costal groove** of the rib), neurovascular structures are arranged from top to bottom:

- Intercostal **V**ein
- Intercostal **A**rtery
- Intercostal **N**erve



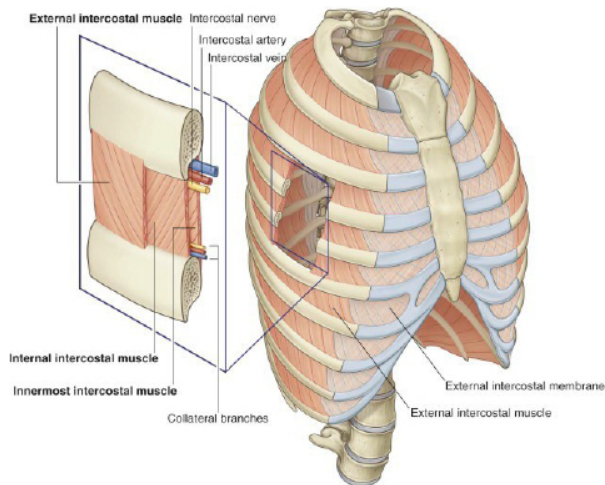


Figure 8.20. Gray's Anatomy for Students, 3rd ed.

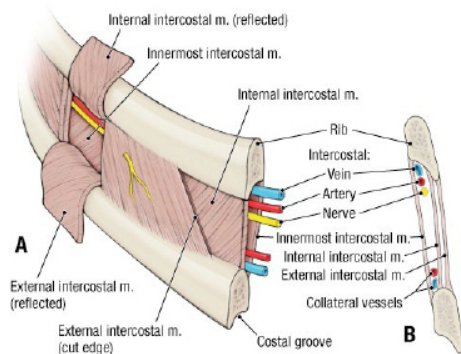


Figure 8.21.

Realize that there are two intercostal arteries (and veins) serving an intercostal space:

- **Posterior intercostal arteries/veins**
- **Anterior intercostal arteries/veins**

? Where do each of the intercostal arteries originate?

? Where do each of the intercostal veins drain?

? Where do the intercostal nerves originate?



COMPLETE ANATOMY: ARTERIES OF THE THORACIC WALL



COMPLETE ANATOMY: VEINS OF THE THORACIC WALL



COMPLETE ANATOMY: VEINS OF THE THORACIC WALL



COMPLETE ANATOMY: NERVES OF THE THORACIC WALL

THE MEDIASTINUM

The mediastinum (“median septum”) is the part of the thoracic cavity in the midline, between the two pleural sacs.

Boundaries of the mediastinum:

- Superior to inferior: From the **superior thoracic aperture to the diaphragm**
- Anterior to posterior: from the **sternum/ costal cartilages to the bodies of the thoracic vertebrae**

A horizontal plane drawn from the sternal angle to the IV disc between T-4/T-5 subdivides the mediastinum into **superior** and **inferior** parts.

The pericardium and heart further subdivides the inferior mediastinum into **posterior, middle, and anterior** parts.

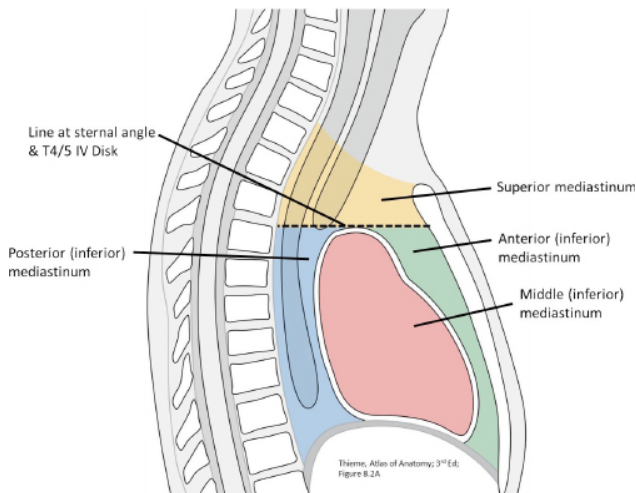


Figure 8.22.

SUPERIOR MEDIASTINUM



COMPLETE ANATOMY: SUPERIOR MEDIASTINUM

Superior Mediastinum

Boundaries:

- Above: Superior thoracic aperture = continuous with the neck above.
- Below: Horizontal plane through T-4/T-5 intervertebral disc and through the sternal angle.

Superior Mediastinum

Boundaries:

- Above: Superior thoracic aperture = continuous with the neck above.
- Below: Horizontal plane through T-4/T-5 intervertebral disc and through the sternal angle.

Main contents (shortened):

- Thymus
- SVC; Right & Left Brachiocephalic veins
- Aortic arch and branches
- Vagus and phrenic nerves; Left recurrent laryngeal nerves
- Trachea, Esophagus, Thoracic duct

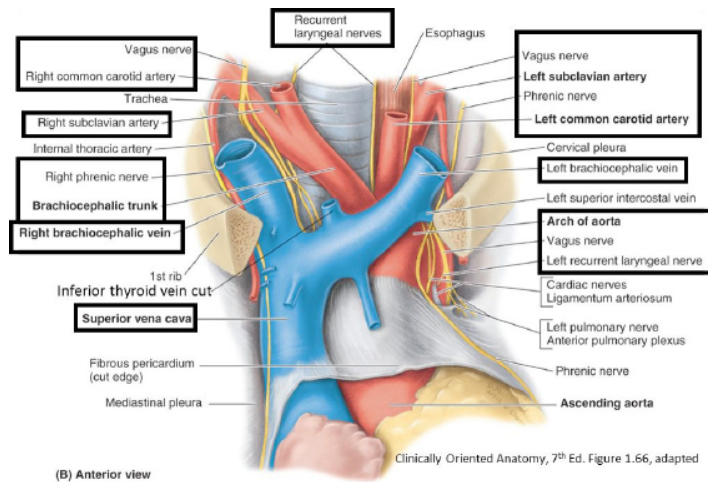


Figure 8.23.

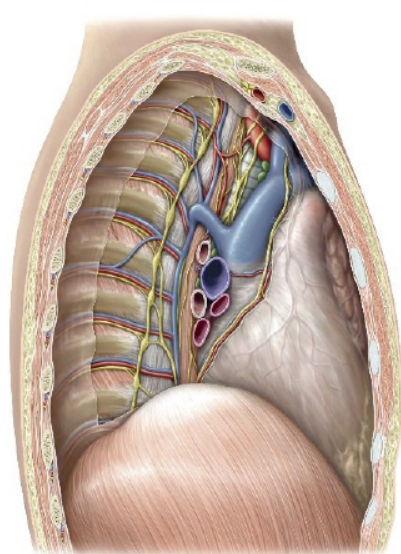


Figure 8.24. Superior mediastinum.

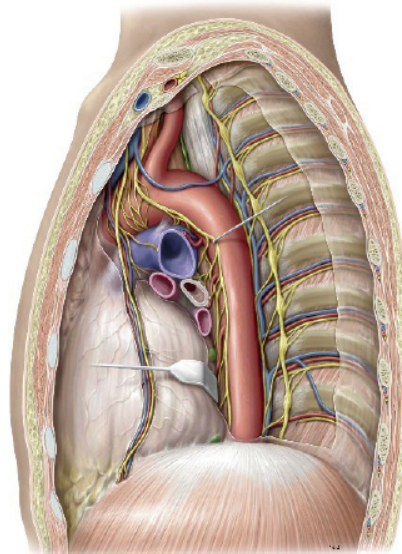


Figure 8.25. Superior mediastinum.

Big Picture of Superior Mediastinum

Rules of thumb:

- 1 The derivatives of the embryonic **foregut** are placed in the **CENTER** of the superior mediastinum—verify this by locating the **trachea** and **esophagus** with blunt dissection.
- 2 Major arteries predominate on the **LEFT** side: verify this by locating the course of the **aorta**.
- 3 Major veins predominate on the **RIGHT** side: verify this by locating the **superior vena cava** and **azygos vein**.

- 3 Major veins predominate on the RIGHT side: verify this by locating the **superior vena cava** and **azygos vein**.

Clean and identify major veins in the superior mediastinum.

- 1 Identify and remove the fatty **thymus gland**.
- 2 Clean and follow the courses of the **left** and **right brachiocephalic veins**. Which one is longer? Why? At the base of the neck, each brachiocephalic vein (left and right) is formed by the union of the **internal jugular** and **subclavian veins**. The junctions of these veins on each side of the neck are called the left and right “venous angles”.
- 3 On the right side of the mediastinum peel away any of the **mediastinal pleura** that may have been left behind. Use forceps and scissors. Before you cut, see if you can visualize the course of the **phrenic nerve**, so you don't damage it as it passes just lateral to the superior vena cava.
- 4 Clean off the **superior vena cava**.
- 5 Clean off the arch of the **azygos vein** as it passes over the root of the right lung to enter the SVC.

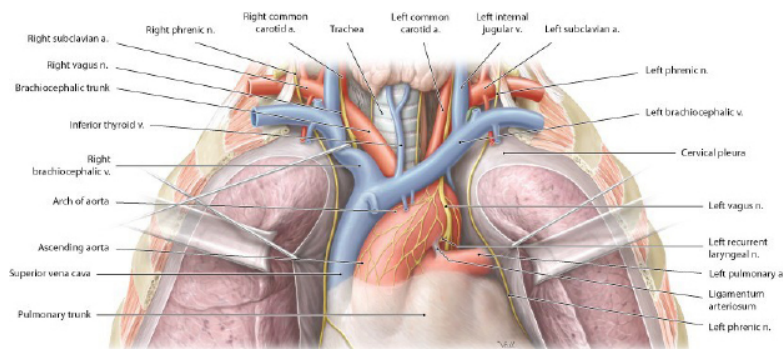


Figure 8.26.

Clean and identify the major arteries in the superior mediastinum.

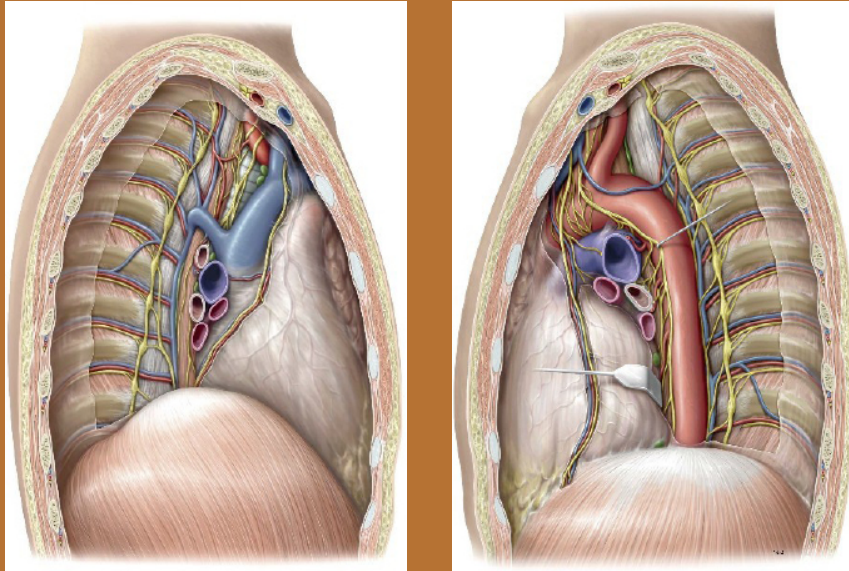
- 1 Follow the course of the aorta as it emerges from the heart and arches to the left.
- 2 Clean off the three branches from the **arch of aorta**:
 - **Brachiocephalic artery**
 - **Left common carotid artery**
 - **Left subclavian artery**
- 3 Remove any mediastinal pleura covering the arch of the aorta. Take care not to damage the **phrenic nerve** or **vagus nerve** as they cross the aorta.

Clean and identify major nerves passing through the superior mediastinum.

- 1 Start at the **superior thoracic aperture** and locate the **phrenic** and **vagus nerves**. Both pass from the neck into the thorax sandwiched between the subclavian vein and artery.
 - The vagi are near the **common carotid arteries**.
 - The phrenic nerves are lateral to the vagi.
- 2 Carefully clean both sets of nerves with forceps and follow them into the superior mediastinum.

Phrenic nerves pass around the periphery of the pericardium on their way to the left and right domes of the **diaphragm**. You will find them tethered to the fibrous pericardium—they are located **ANTERIOR to the root structures of the lungs**. Carefully free them up and clean them with scissors and forceps.

? Can you identify the phrenic and vagus nerves on the right side? How about on the left?



Vagus Nerves target the esophagus, so they pass **POSTERIOR to the root structures of the lungs**. Carefully free them up and clean them with scissors and forceps.

- The **right vagus** squeezes between the arch of the azygos and the trachea. Clean the surface of trachea to find the right vagus.
- The **left vagus** passes onto the lateral surface of the arch of the aorta and is flattened and wide. The **left recurrent laryngeal nerve** leaves the vagus here, passes under the arch of the aorta (you will find this nerve during your respiratory labs!)

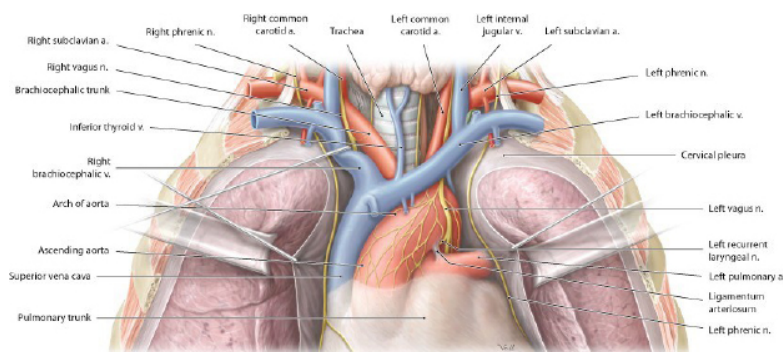


Figure 8.27.

POSTERIOR MEDIASTINUM



COMPLETE ANATOMY: POSTERIOR MEDIASTINUM

Azygos System

The **azygos venous system** is composed of

Inferior

Azygos System

The **azygos venous system** is composed of two vertical venous channels = the **azygos vein** proper on the right and the **hemiazygos veins** on the left.

On the right side, clean the **azygos vein** (azygos means “unpaired”). Note that **right posterior intercostal veins** are tributaries of the azygos vein.

Two venous channels on the left receive the left posterior intercostal veins: the **hemiazygos** and **accessory hemiazygos veins**. Since we only removed the right lung you won't be able to see these, but you should review their general locations.

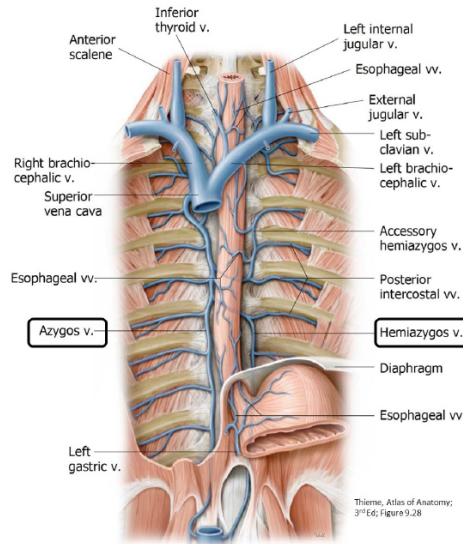


Figure 8.28.

Clean examine the sympathetic trunks.

On the right side of the vertebral column, use forceps and blunt tools to clean off the loose connective tissue around the **sympathetic trunk**. This is tedious work so don't worry about creating a masterpiece.

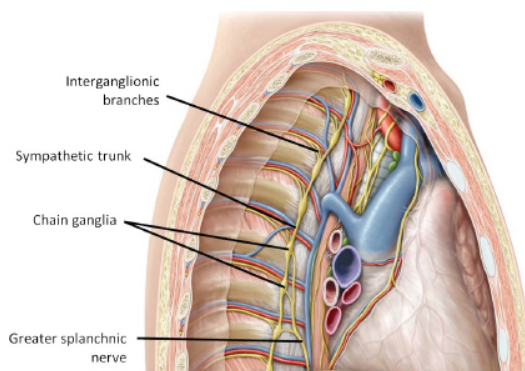
One old dissection trick is to rub the area with the blunt end of your scalpel handle to liquefy the fatty tissue a bit—then wipe the area down with paper towels to remove the liquid fatty tissue.

The sympathetic trunk is part of the autonomic nervous system (ANS). It is a bilateral structure composed of interconnected **sympathetic (chain) ganglia**.

Trace the sympathetic trunk from the superior thoracic aperture down to the diaphragm.

FIND

- **Chain ganglia**
- **Interganglionic branches** connect adjacent ganglia
- **Greater splanchnic nerve** is composed of medially-directed branches from thoracic chain ganglia T-5 to T-9 or so. This nerve heads medially toward the center of the body and penetrates the diaphragm to abdominal organs derived from the foregut (e.g., stomach). **The greater splanchnic nerve supplies sympathetic fibers to the foregut.**



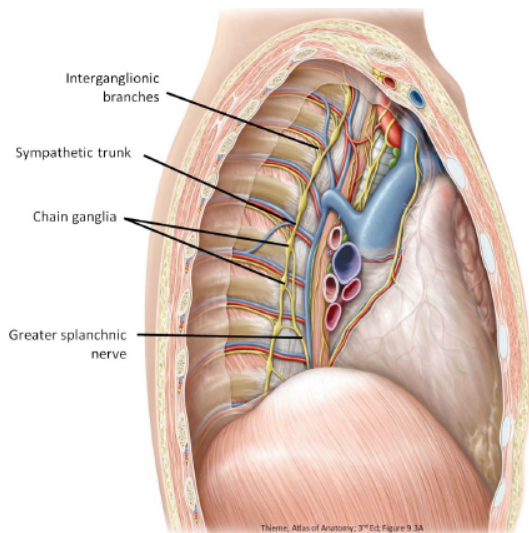


Figure 8.29. Sympathetic trunk: Right lateral view.

 When you have finished this session, return the lung and chest wall to your cadaver.

CHECKLIST, LAB #8

REVIEW AND MAKE SURE YOU HAVE IDENTIFIED EACH OF THE STRUCTURES BELOW.

CHEST WALL

- Sternum: body, manubrium, and xiphoid
- Ribs, costal cartilages, and costal margin
- External and internal intercostal muscles
- Innermost intercostal muscles
- Internal thoracic artery and veins
- One example of an anterior intercostal artery

PLEURA/PLEURA CAVITIES

- Parietal pleura
 - Costal
 - Cervical (cupula)
 - Mediastinal
 - Diaphragmatic
- Visceral pleura

CHECKLIST, LAB #8

REVIEW AND MAKE SURE YOU HAVE IDENTIFIED EACH OF THE STRUCTURES BELOW.

CHEST WALL

- Sternum: body, manubrium, and xiphoid
- Ribs, costal cartilages, and costal margin
- External and internal intercostal muscles
- Innermost intercostal muscles
- Internal thoracic artery and veins
- One example of an anterior intercostal artery

PLEURA/PLEURA CAVITIES

- Parietal pleura
 - Costal
 - Cervical (cupula)
 - Mediastinal
 - Diaphragmatic
- Visceral pleura
- Pleural cavity

SUPERIOR MEDIASTINUM

- Superior thoracic aperture
- Trachea
- Esophagus
- L & R subclavian veins
- L & R internal jugular veins
- L & R brachiocephalic veins
- Superior vena cava
- Azygos vein
- Aortic arch
- Brachiocephalic artery (trunk)
- L & R common carotid arteries
- L & R subclavian arteries
- Thymus
- L & R phrenic nerves
- L & R vagus nerves

L & R subclavian arteries

Thymus

L & R phrenic nerves

L & R vagus nerves

POSTERIOR MEDIASTINUM

Azygos vein

Posterior intercostal arteries and veins

Intercostal nerves

Sympathetic trunk w/ chain ganglia

Greater splanchnic nerve

◀ PREVIOUS
Lab 1: Lab Orientation

Week 6: Chest Wall and Overview of Thoracic Cavity
NEXT ▶