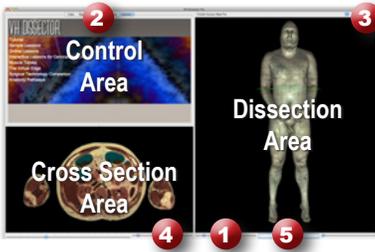


Introduction to the Thorax



Learning Objective

After completing this exercise, you will be able to name major muscles of the Thorax as well as identify major organs blood vessels and nerves

Use the reference on the left to locate controls and areas referred to in the text below.

1 Start by setting the cross section through the area we want to explore:

- Drag the reference plane in the dissection area by its green border to the middle of the chest (*the cross sections are numbered in the lower left corner, you should be close to 1450*)
- Explore the anatomy of the thorax by moving your mouse over the cross section (*structures are identified in the upper right corner of the cross section area*)



2 Now skin the cadaver to reveal more anatomy:

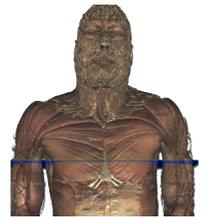
- Click on the skin in the dissection area to highlight it (*structures change colors when highlighted*)
- Click on the highlight skin again to dissect it (*now you see the fat and other subcutaneous tissue*)
- Dissect the fat just like the skin

Click on a structure to highlight
Click again to dissect



3 Take a closer look by magnifying the thorax in the dissection area:

- Zoom in using the magnification slider **1**
- Drag the dissection with your mouse to reposition it
- Dissect the veins of thorax to clean up the dissection



4 Identify the Pectoralis major muscle by highlighting it:

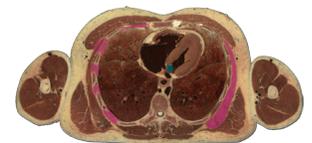
- Select the "Index" tab **2**
 - Enter "pectoralis major" into the search box
 - Select the "Pectoralis major - right" from the list
 - Click the "Add & Highlight" button
- (*the cross sections are in standard radiologic orientation so the right pectoralis major muscle is highlighted on the left hand side*)

Locate specific structures
with the index



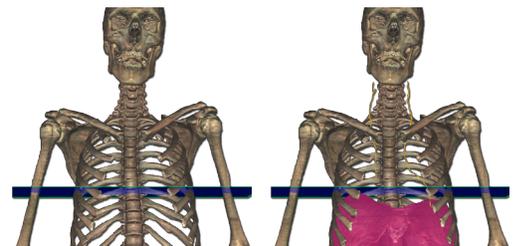
Name the four other muscles that form the thoracic wall:

1. _____
2. _____
3. _____
4. _____



5 Isolate the nerves that control the diaphragm by simplifying the dissection:

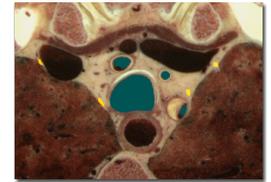
- Click the "Clear" button to clear the dissection area **3**
- Select the "Systems" tab **2**
- Select "Skeletal system" and click the "Add" button
- Dissect the bones of the sternum and costal cartilages
- From the "Regions" tab **2**, expand the "Thorax" using the icon to the left
- Expand "Peripheral nervous system" section
- Select the "Phrenic nerve" and click "Add & Highlight"



Add, remove and highlight groups of structures with systems, regions and tissues

6 Follow the Phrenic and Vagus nerves as they travel around the heart:

- Set the cross section through the first rib (*cross section 1340*)
- Add and highlight the Vagus nerve (*hint: use the index*)
- Locate the Phrenic and Vagus nerves in the cross section
- Zoom in on the cross section by using the magnification slider, **4** drag to center the image
- Follow the nerves downward (inferiorly) by holding down the command (Mac) or ctrl (PC) key while pressing the up and down arrow keys to move 1 mm at a time through the cross sections

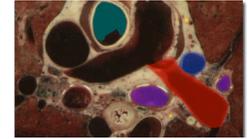


Move the cross section 1mm at a time by holding the command (Mac) or ctrl (PC) key while pressing the up or down arrow keys

Fill in the blanks:

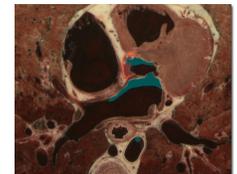
(*Hint: The hilum of the lung consists of the Pulmonary artery and vein and the main bronchus*)

1. The Phrenic nerve passes _____ (*direction*) to the hilum of the lung.
2. The Vagus nerve passes _____ (*direction*) to the hilum of the lung.



7 Visualize a more advanced anatomical concept, the Aortic Arch:

- Click the “Clear” button to clear the dissection **3**
- In the “Systems” tab, Expand the “skeletal system” and add the “Vertebral column”
- Add the heart to the dissection (*hint: use the Systems tab*)
- View the dissection at 315° using the rotation wheel **5** or the command (Mac) or ctrl (PC) key while pressing the left and right arrow keys to move 5° at a time



Rotate the dissection using the left or right arrow keys while holding the command (Mac) or ctrl (PC) key

- Set the cross section through the beginning of the aorta (*cross section 1430*)
- Locate the ascending aorta in the cross section, and highlight it
- Follow the ascending aorta superiorly in the cross section until it begins to arch
- Hold down the shift key and click to add and highlight the aortic arch

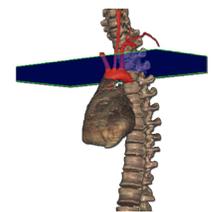


Highlight multiple structures or un-highlight a single structure by holding the shift key when clicking

Name the three branches of the aortic arch?

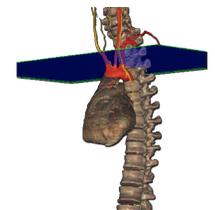
(*Hint: follow the aorta superiorly until it branches*)

1. _____
2. _____
3. _____



8 The Vagus nerve revisited:

- From the “Regions” tab expand the “Thorax” and the “Peripheral nervous system”
- Select and add and Highlight the “Vagus nerve [X]”
- In the cross section, locate the left Vagus nerve, follow the nerve inferiorly as it passes the aortic arch



What branch of the Vagus nerve loops inferior to the aortic arch?

1. _____

