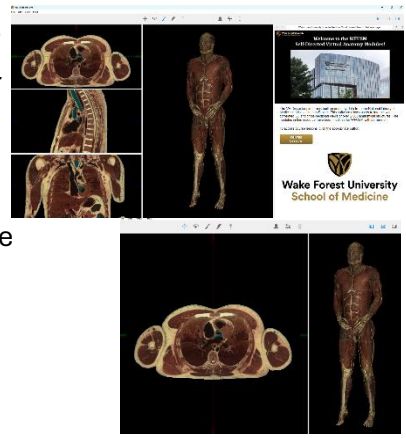
VHD Jumpstart: Introduction to the Thorax

Sectra Table Version

NOTE: *If you are not using the Sectra Table, return to the previous page and select the Touch or Non-Touch Version.*



1 *Start by setting the screen view*

- Hide or unhide the Lessons Pane by tapping the "View" icon and then tapping on the "*Lessons*" icon.
- Double-tap on the transverse cross-section to enlarge it.

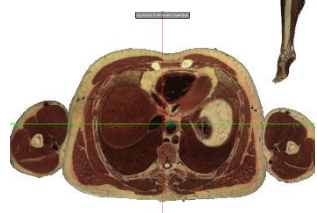
2 *Set a cross-section of the thorax*

- Add a transverse cross-section to the 3D model.
- Tap on the "*Cross-Section*" icon and select "Transverse" and "*Color*". *On the Toltech Table, anatomic cross-sections are the default option.*
- Tap on the Cross-Section icon or one of the main panels to close the window.
- Using three fingers, slide up and down over the transverse cross-section image. Scroll to the middle of the chest.
- Explore the anatomy of the thorax by tapping the "Rotate" icon and the "*Highlight*" tool . Drag one finger over structures of interest to see their labels.
- *Note*: *structures are identified at the top of the cross-section area. To see the cross-section numbers, click on View menu, and select "Show Cross Section Numbers".*

Use one finger to highlight structures.

Use two fingers to zoom and move the model.

Use three fingers to scroll through slices

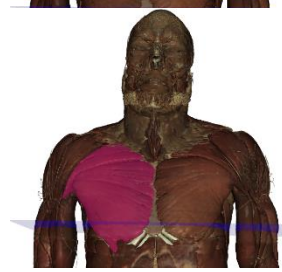


3 *Magnify the 3D model pane*

- Using two fingers, zoom out and translate the position of the 3D model.

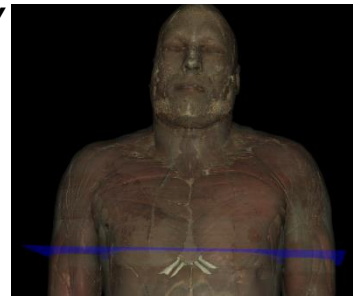
4 *Find and highlight the* P. major *muscle*

- Open the Anatomy glossary window by selecting the "*Anatomy*" icon .
- Make sure you are under the "*Index*" list
- Enter "*Pectoralis major*" into the search box.
- Tap the "*Highlight*" icon next to "*Pectoralis major – Right*" to add and highlight this muscle. (*The cross-sections are in standard radiologic orientation, so the right P. major is highlighted on the left side.*)



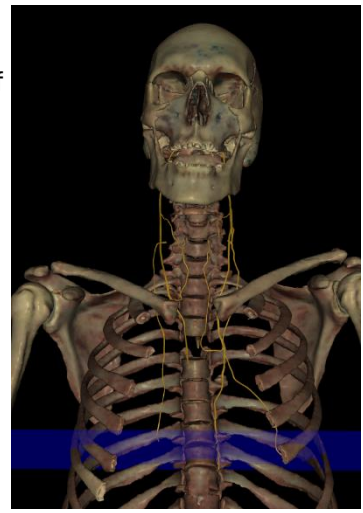
What are four other muscles that contribute to the thoracic wall? *Explore the cross-sectional and 3D models to identify muscles contributing to the thoracic wall.*

5 *Adjust the skin to see surface anatomy*



- Tap the "*Skin*" icon to reveal the skin tool.
- Slide the bar to the right or left to change the opacity of the skin.
- Before proceeding, remove the skin from the 3D model (slide the bar to the left).

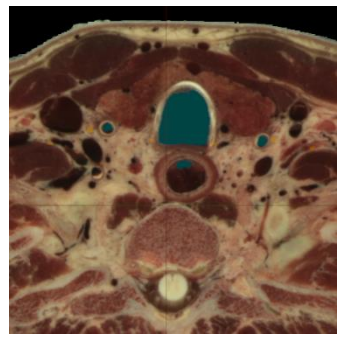
6 *Isolate the Phrenic Nerves by simplifying the 3D model*



- Clear the 3D model by tapping the "*Hide All*" icon at the top of the Anatomy glossary.
- Next, tap the "*Systems*" icon on the left side of the Anatomy glossary to open the Systems list.
- Add the full skeletal system to the 3D model by selecting the "*Visible*" icon to the left of "*Skeletal System*". Tap the Anatomy icon to close the Anatomy window.
- Dissect the bones of the sternum and costal cartilages using the "*Dissect*" tool .
- Then, expand "*Nervous System*" > "*Peripheral Nervous System*" > "*Spinal Nerves*".
- Expand "*Cervical Plexus – Left*" and "*Cervical Plexus – Right*".
- Add and highlight left and right "*Phrenic Nerve*" using the "*Highlight*" icon .

Within the Anatomy window, toggle between "*Index*" , "*Regions*", and "*Systems*" to sort through a listing of specific anatomical structures that you can show, hide, or highlight.

7 *Follow the Phrenic and Vagus Nerves*



- Scroll through the transverse cross-section to view the first rib.
- Find and highlight the "*Vagus Nerve*" (*Hint: use the search box in the index list*).
- Locate the phrenic and vagus nerves in the cross-section.
- Zoom in and center the cross-section to get a closer look at the nerves (*Hint: use two fingers!*).
- Follow the nerves inferiorly by scroll through the cross-section with three fingers.

8 *Visualize a more complex structure, the Aortic Arch*

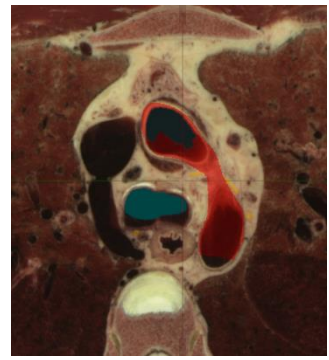
- Clear the 3D model .
- Confirm you are on the "*Systems*" list , then click "*Collapse*" in the top right corner of the Anatomy glossary.
- Expand "*Skeletal System*" > "*Axial Skeleton*" and add "*Vertebral Column*"
- Next, expand "*Cardiovascular System*" and add "*Heart*".
- Tap the "*Rotate*" icon , then rotate the 3D model to a posterolateral view.

- Scroll through the cross-section to view the aorta where it exits the heart.
- Manually highlight the "*Ascending Aorta*".
- Scroll through the cross-sections to follow the ascending aorta superiorly until it begins to arch.
- Manually highlight the "*Aortic Arch*".

List the three branches of the aortic arch. *Visually trace the aorta superiorly to identify the branches. Remember to use the highlight function and hover over the cross-section!*

9 *Revisit the Vagus Nerve*

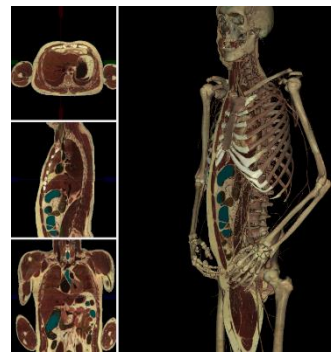
- Open the "*Systems*" list and expand "*Nervous System*" > "*Peripheral Nervous System*" > "*Cranial Nerves*".
- Highlight the left and right "*Vagus Nerve [X]*"
- Scroll through the cross-section, locate the left vagus nerve and follow it inferiorly as it passes the aortic arch.



What branch of the vagus nerve loops inferior to the aortic arch? *Examine the cross-sectional anatomy.*

10 *Free Exploration*

- Practice using these tools (and exploring other options) to examine additional thoracic structures of interest.
- Click the "*Cross-Section*" tool and select "*Visible*" and "*Anatomy*" under the Sagittal cross-section. Click the Cross-Section icon or one of the main panels to close the window.
- When finished, click the home button on the top right corner to return the main VHD window.
- Select "*View*" > "*Reset 3D*" to reset the models.



One of my favorite tools is to use an anatomic cross-section superimposed on a 3D model. Try it!

Original design: Toltech
Modified with permission: Tafline Arbor, Ph.D., WFUSM