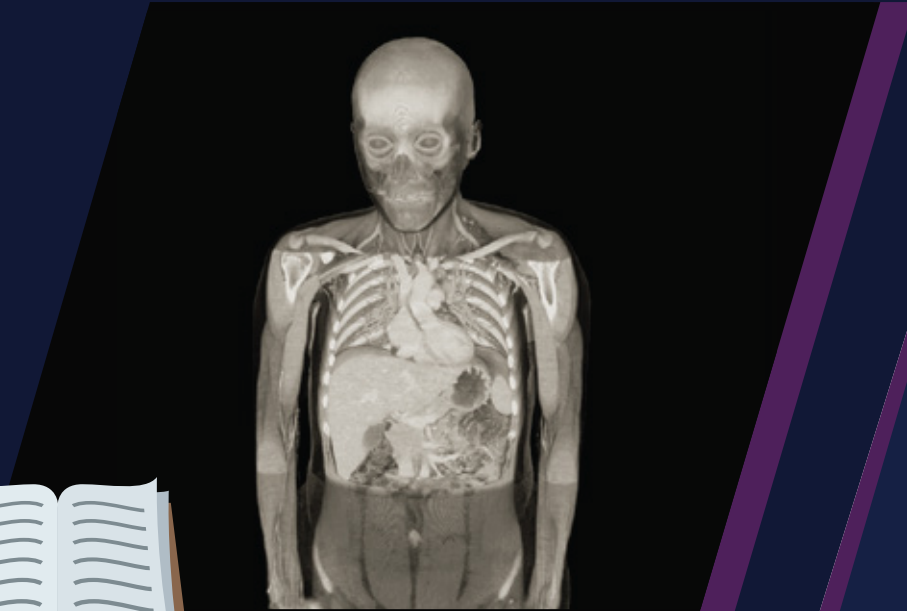
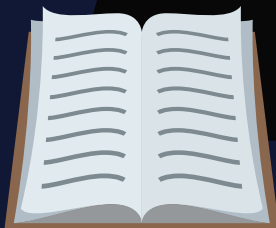




## Quick Manual



Vesalii Radiology 3D

## About Vesalii

“Vesalii” the biggest medical library in the world, aims at assisting universities, students, healthcare professionals, and even patients in receiving quality and accurate medical information. It also provides different tools to easily view, study, and understand human anatomy of the male and female using 3D, virtual reality, and real **Radiology** images.

We have the largest medically accurate content developed by our anatomy experts and doctors, offering more than 1,500 histology images, 500,000 landmarks, 20,000 traceable blood vessel and nerve paths, 200,000 **Radiology** images, and over 5 million medical words.

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## Vesalii Products

Vesalii has created software that mainly focus on the anatomy and histology of the human body in addition to radiology, and DICOM converter for the purpose of learning and harnessing the best tools to facilitate and empower the learning and researching process.



### Our Products



#### Vesalii Anatomy 3D

Explore the comprehensive structure of the female and male human body in a stunning 3D environment, covering every anatomical structure with full medical information for each.

#### Vesalii Anatomy VR

Explore the comprehensive structure of the female and male human body in an immersive virtual reality environment, covering every anatomical structure with full medical information for each.



#### Vesalii Dicom Converter 3D

Convert your DICOM files into a 3D model that can be used on your desktop computer or smartphone, allowing you to explore your DICOM images in a 3D environment.

#### Vesalii Dicom Converter VR

Convert your DICOM files into a 3D model that can be viewed using virtual reality (VR) gear, allowing you to explore your DICOM images in a one-of-a-kind experience you never experience before.



#### Vesalii Radiology 3D

Learn and understand how to read **Radiology** medical images, control tissue density, and body planes (axial, sagittal, coronal) on a stunning 3D model created from over 1 million **Radiology** images available for you to study.

#### Vesalii Radiology

Learn and understand how to read **Radiology** medical images, control tissue density, and body planes (axial, sagittal, coronal) on a stunning 3D model viewed using immersive VR technology created from over 1 million **Radiology** images available for you to study.



### Quick Guide

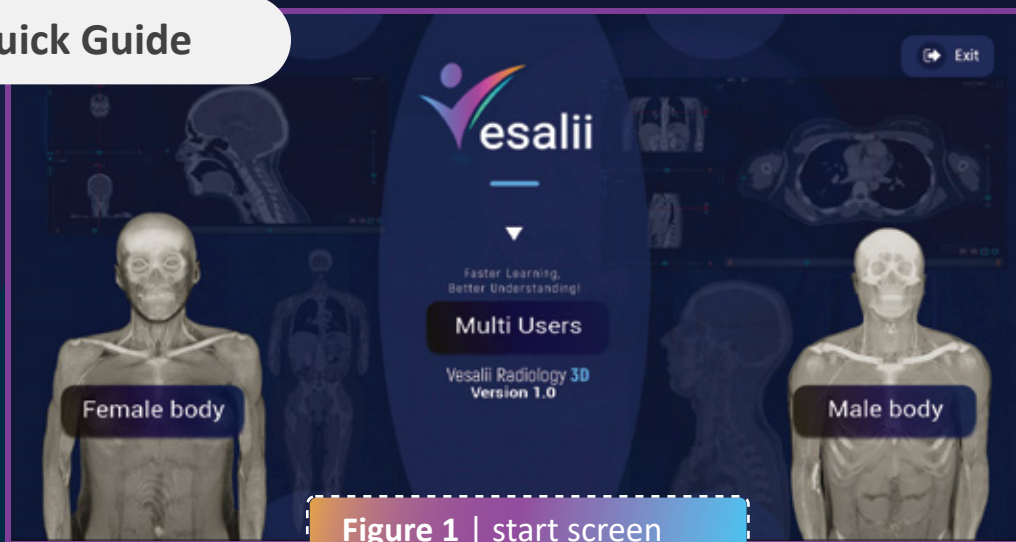



Figure 1 | start screen

Button	Function
Female Body	Access female radiology images
Male Body	Access male radiology images
Help	Visit Vesalii support <a href="http://www.Vesalii.com/support">www.Vesalii.com/support</a>
Exit	Exit Vesalii Radiology 3D

Multi Users


Create or join multi-user session, if enabled

Create or join session pages:

Create Session  Create a new multi-user session. This option is only available to educators.

- **Server Name:** The server name is filled automatically and cannot be changed.
- **Educator Name:** The Educator Name is also filled automatically based on the registered account.
- **Female:** Click the female button to create a new session featuring the images of the female body.
- **Male:** Click the male button to create a new session featuring the images of the male body.

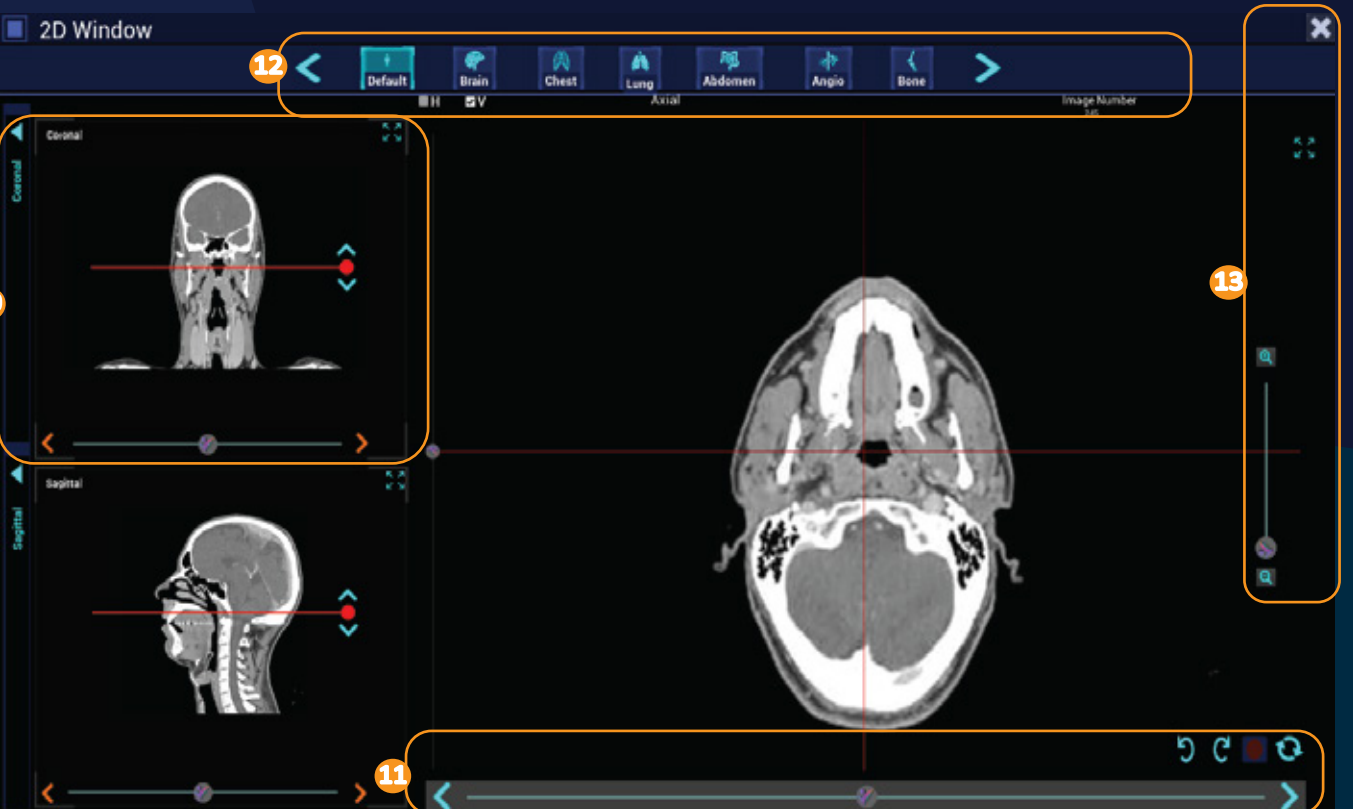
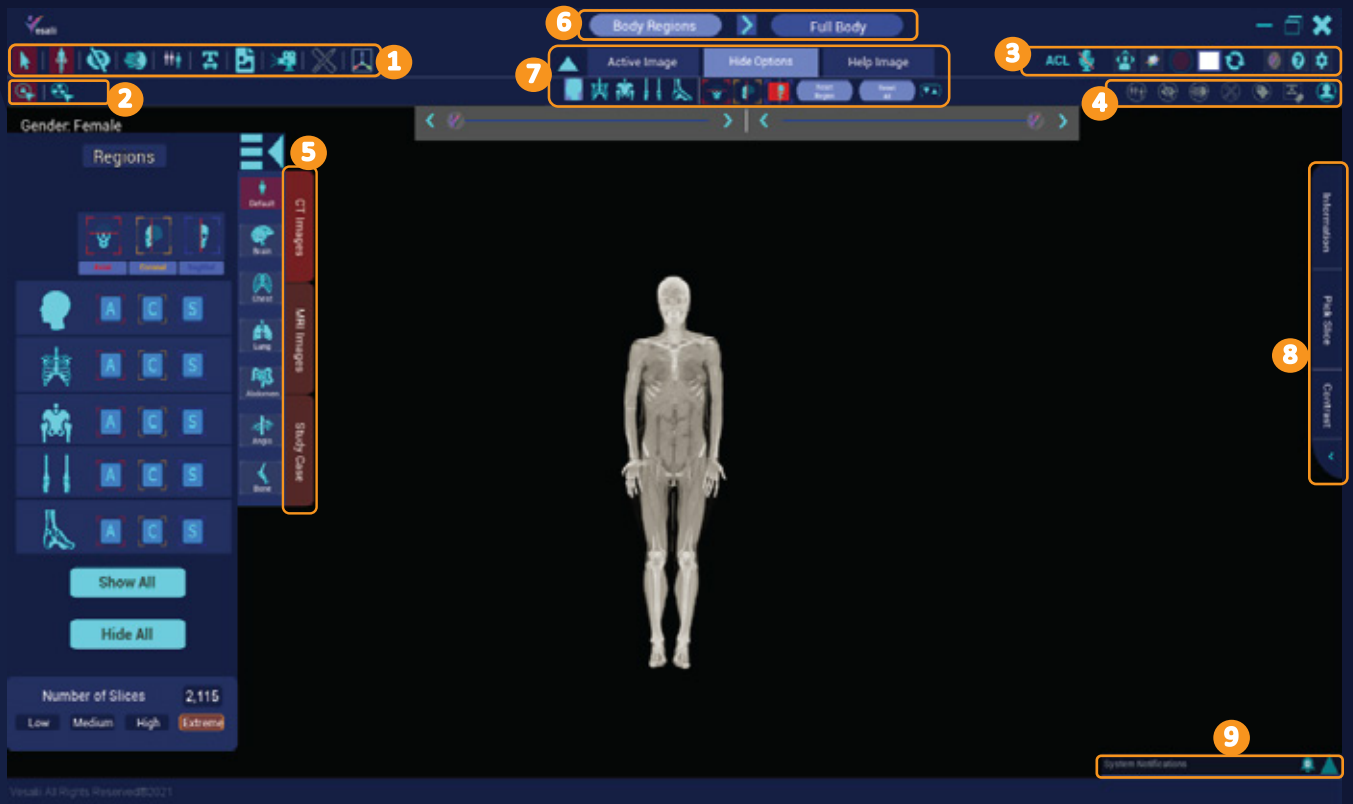


Join Session  Join a remote session created by another user. This option is available to students and educators.



















- **Session Address:** Enter the Server Name (IP address) of the user that created the session you wish to join.
- **Join:** Click to join and enter the session.
- **Student Name:** The Student Name is filled automatically, and includes the name of the student and his\her student ID number. This information is taken from the student's registered account. In a multi-user session, the Student Name can only be seen by the educator.


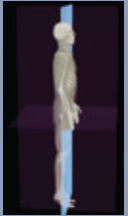
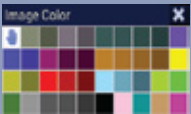



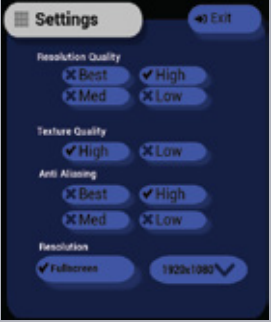

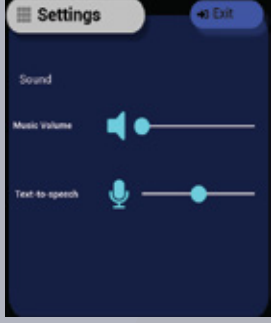



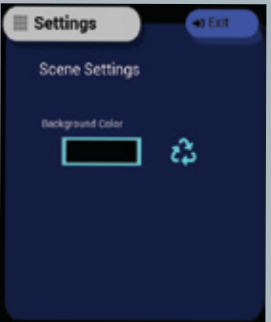

# Default Workspace



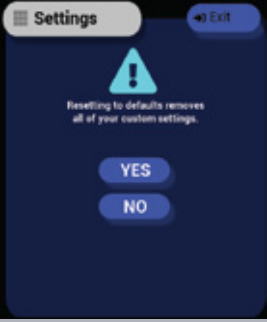








Num.	Icon	Name	Function
1		Select	Select a slice to control and use various tools on it
		Highlight	Highlight a single slice from the <b>Radiology</b> images so you can select the desired image easily (Depending on the currently active axis)
		Hide	 Make the selected slice invisible.
			 Hide all slices above the selected slice.
			 Hide all slices below the selected slice.
		Fade	 Select a slice or group and the fade action will be applied to all other slices. The slice or group you select will be highlighted in red
			 Control the level of transparency applied to the faded slices.
			 Control the level of the red tint applied to the highlighted slice(s). (This option is exclusive to the fade others tool)
			 Fade the selected slice or group.
	 Control the level of transparency applied to the faded slices.		
		Isolate	Isolate the selected slice to see it alone in the scene
		Text Stickers	 Remove the sticker.
			 Add an attachment to sticker.
 Move the sticker to another location.			
	Screenshot	Take a screenshot of the current view	
	Screen Record	Takes a video recording of the screen as you work on the model and images, showing the tabs opened and tools used. Screen Record will record the sound of the user if they speak, and the text-to-speech voice if activated.	
	Measure	Measure the distance between two points on an isolated slice	
	Transform Body	Rotate what is currently in the scene in 3 axes.	
2		Single Selection	Select a single slice
		Group Selection	Select a group of slices
		Group Size	Select a number of <b>Radiology</b> images from a drop-down list to be displayed and use tools on

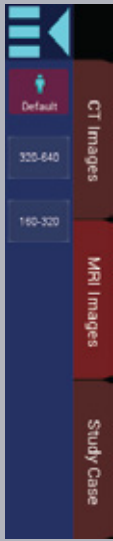
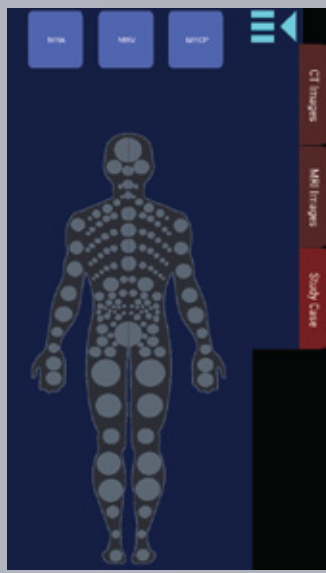
Num.	Icon	Name	Function
3		<p><b>ACL</b></p> <p></p> <p></p> <p></p> <p>(apply to all users) </p> <p>(apply to all users) </p> <p>(apply to all users) </p> <p>(apply to all users) </p> <p></p> <p></p> <p></p> <p></p> <p></p> <p></p>	<p>The ACL feature allows the host to control access permissions of other users.</p> <p><b>(Search for a user in the session by name)</b></p> <p>Remove filtering based on name, i.e., show all names on the list</p> <p>Refresh: Refresh the users in the session to reveal the name of users that have recently joined the session.</p> <p>Close: Close the ACL window.</p> <p>Mute All: Mute sounds coming from all users in the session</p> <p>Unmute All: Unmute sounds coming from all users in the session.</p> <p>Grant partial access to all: Grant partial control to all users, i.e., all users can now freely control their own view of the scene and control the mouse cursor, allowing them access to change application settings.</p> <p>Revoke partial access from all: Revoke partial control from all users with this permission.</p> <p>Mute User: Mute sound coming from the user's microphone.</p> <p>Unmute User: Unmute sound coming from the user's microphone.</p> <p>Grant user partial access, i.e., the user can now freely control the view of the scene and control the mouse cursor, allowing the user to change application settings. Other users will not see what a user with partial access is doing.</p> <p>Revoke partial access: Revoke partial control from a user.</p> <p>Full Access: Grant a user full control over the applications. Other users will now see the mouse cursor of the user with full access along with all actions performed.</p> <p>Revoke Full Access: Revoke full control access from a user.</p>
		<p><b>Mute options</b></p> <p></p> <p></p> <p><b>ACL</b> </p> <p><b>ACL</b> </p>	<p>Unmute self as it appears to the student.</p> <p>Mute self as it appears to the student.</p> <p>Unmute self as it appears to the educator.</p> <p>Mute self as it appears to the educator.</p>

Num.	Icon	Name	Function
		<b>Navigation Button</b>	Show/Hide navigation ring
Navigation Ring		<b>Zooming</b>	Clicking on the  or  buttons to zoom in/out of the view
		<b>Increase/Decrease Camera Depth</b>	Use  or  buttons to increase or decrease camera depth
		<b>Directional Arrows</b>	Used to move the entire 3D view up, down, left, or right
		<b>Reset Camera</b>	Used to reset the camera view to the original position
		<b>Move</b>	Used to move navigation ring on screen
		<b>Close</b>	Used to close current navigation ring
	Clicking on  will reopen the navigation ring		
		<b>Planes of Body</b>	Used to reveal three plane lines that can be moved on the body <div style="display: flex; align-items: center; margin-top: 10px;">   </div>
		<b>Color Density</b>	Change the color of the <b>Radiology</b> image depending on the contrast of the image
		<b>Image Color</b>	Change the tint color of <b>Radiology</b> images to the desired color <div style="display: flex; align-items: center; margin-top: 10px;">  </div>
		<b>Reset Color</b>	Reset the color of the <b>Radiology</b> images to the default setting
		<b>Vesalii Store</b>	Takes you to the Vesalii store to view all Vesalii products
		<b>Help Center</b>	Open a window to view the button controls for the application
		<b>Settings</b>	Open settings menu where resolution, language, and sounds can be changed
3.1		<b>Settings</b>	Open settings menu where resolution, language, save path for screenshots and recordings, sound, and scene options can be changed.

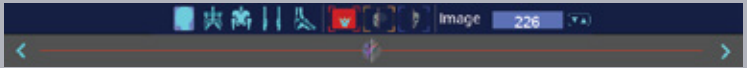


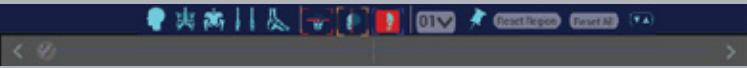


Num.	Icon	Name	Function
3.2		Resolution	<p><b>Resolution Quality:</b> Change resolution quality (Best, High, Med, or Low).</p> <p><b>Texture Quality:</b> Change the quality of textures (High or Low).</p> <p><b>Anti Aliasing:</b> Change anti-aliasing option (Best, High, Med, or Low). The higher the setting, the smoother the edges of displayed objects in the scene become.</p> <p><b>Resolution:</b></p> <ul style="list-style-type: none"> <li>- Choose between running the application in fullscreen or windowed mode.</li> <li>- Change the resolution of the application.</li> </ul>
3.3		Language	<p>Select the language for the application. Language change is application-wide, meaning that it affects all aspects of the application, including menus, bars, panels, and body structure names and description. There are 7 languages available now.</p>
3.4		Sound	<p><b>Music Volume</b>  Control background music volume</p> <p><b>Text-to-speech</b>  Control text-to-speech volume.</p>
3.5		Save Path	<p>Select the desired save path for screenshots and screen recordings taken through the application.</p>
3.6		Scene	<p><b>Background Color</b> Change the color of the scene background. Press  to rest background color to default setting.</p>

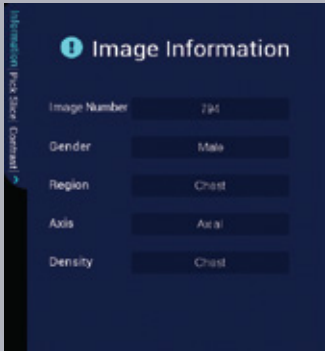
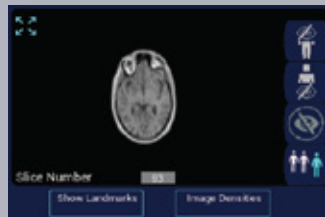
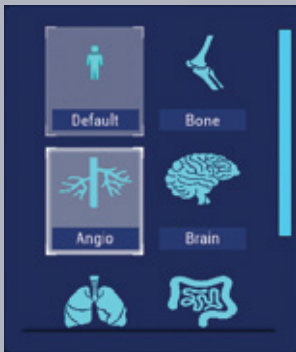
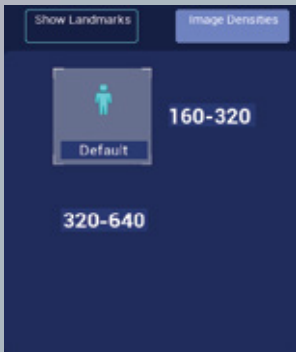








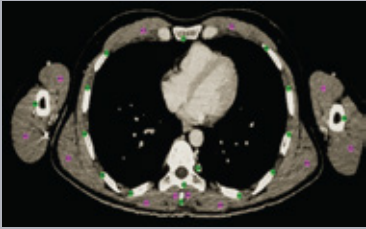
Num.	Icon	Name	Function
3.7		<b>Reset</b>	Resets all options to the original setting.
3.8		<b>Exit</b>	Close  the settings window.
4	      	<b>Disable Isolate</b> <b>Disable Hide</b> <b>Disable Fade</b> <b>Disable Measurement</b> <b>Clear Labels</b> <b>Clear stickers</b> <b>Reset Body</b>	Cancels the isolate action to bring all other Images back in view Disable the hide action applied to all hidden images Disable the fade action applied to all faded images Remove the measuring tool effect from the scene Remove all landmark labels Remove all stickers Remove the effects of applied tools (Hide, Fade, etc.) and reset the position of the image(s) to default without affecting other selections, such as the region
5 5.1		<b>Left-side Panel</b> 	Select one of the preset densities for the <b>CT</b> images to better see certain structures based on their density. Choosing a density from here affects the selected region and axis, and the change is reflected in the image information tab. The default density in CT is the same as the Chest



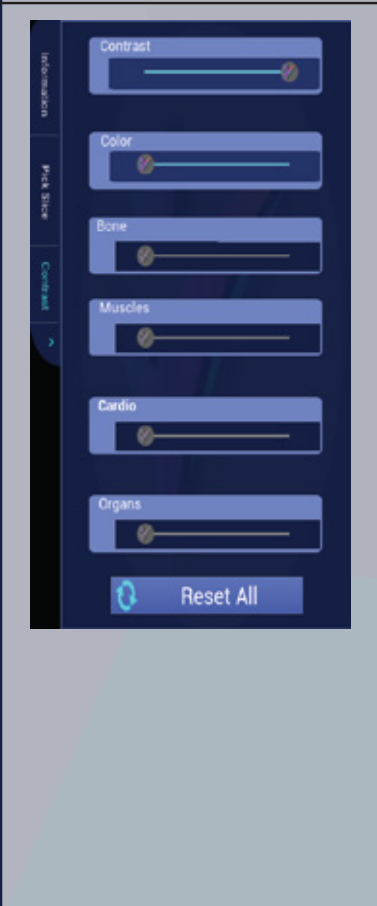


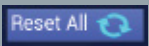
Num.	Icon	Name	Function
5.2		MRI Images	<p>Select one of the preset densities for the <b>MRI</b> images to better see certain structures based on their density.</p> <p>Choosing a density from here affects the selected region and axis, and the change is reflected in the image information tab.</p> <p>The default density in MRI is the same as 160-320</p>
5.3		Study Case	<p>See a radiological image of a case study. First select an imaging technique (MRA, MRV, or MRCP), then select a region from the dotted model and the image of the case study will appear in the scene. You can rotate the image of the case study using the slider at the top of the scene.</p>

Num.	Icon	Name	Function
6		<p><b>Body Regions</b></p>	<p>Select an axis or more to display all <b>Radiology</b> images in the selected axis, or select a region to display <b>Radiology</b> images in all axes for the region. Also select a certain region and certain axis to be displayed</p> <p><b>Axial plane:</b> Shows the images in the axial plane  <b>Coronal plane:</b> Shows the images in the coronal plane  <b>Sagittal plane:</b> Shows the images in the sagittal plane</p> <p><b>Show All</b> Show all body regions  <b>Hide All</b> Hide all body regions</p> <p>Control the number of <b>Radiology</b> images to be displayed</p>
		<p><b>View Switch</b></p>	<p>Switch between viewing the full body or body regions</p>
		<p><b>Full Body</b></p>	<p>Display the full body according to the selected axis</p> <p><b>Axial plane:</b> Shows the images in the axial plane  <b>Coronal plane:</b> Shows the images in the coronal plane  <b>Sagittal plane:</b> Shows the images in the sagittal plane</p> <p><b>Show All</b> Show full body in all axes  <b>Hide All</b> Hide full body in all axes</p> <p>Control the number of <b>Radiology</b> images to be displayed</p>

Num.	Icon	Name	Function
7	<div data-bbox="177 230 400 286">Active Image</div> <div data-bbox="405 230 628 286">Hide Options</div> <div data-bbox="633 230 857 286">Help Image</div> <div data-bbox="177 327 517 389">Active Image</div> <div data-bbox="177 680 517 743">Hide Options</div> <div data-bbox="177 1084 504 1146">Help Image</div>	<p data-bbox="549 331 724 367"><b>Active Image</b></p> <p data-bbox="549 703 724 739"><b>Hide Options</b></p> <p data-bbox="549 1088 612 1124"><b>Help</b></p>	 <p data-bbox="783 389 1501 490">Determine the desired region and axis, and select any slice using the slider (When in full body view, the option to select the region is disabled )</p> <p data-bbox="783 524 1469 591"><b>Image 226</b> The number of the selected <b>Radiology</b> image</p> <p data-bbox="951 607 1299 642"> Show or hide the slider</p>  <p data-bbox="783 770 1485 871">Determine the desired region and axis, and hide the images using the two sliders (When in full body view, the option to select the region is disabled )</p> <p data-bbox="804 916 1442 952"><b>Reset Region</b> Disable the hide action in the active region</p> <p data-bbox="804 983 1490 1050"><b>Reset All</b> Reset All: Disable the hide action on all regions and axis</p>  <p data-bbox="783 1173 1501 1296">Reveals a bar that allows you to select a region, an axis, and the number of images to appear in the scene using a slider. (When an axis for any region is active from the main regions tab, it will be disabled here).</p> <p data-bbox="820 1368 1442 1404"> <b>Pin:</b> Pin down the current view to the scene</p> <p data-bbox="804 1435 1410 1471"><b>Reset Region</b> Removes the pins on the selected region</p> <p data-bbox="804 1503 1315 1538"><b>Reset All</b> Removes the pins on all regions</p>
8		<p data-bbox="549 1599 687 1666"><b>Right-side Panel</b></p>	<p data-bbox="783 1599 1474 1666">Contains the tabs for Information, Pick Slice, and adjusting the Contrast of the radiology images.</p>








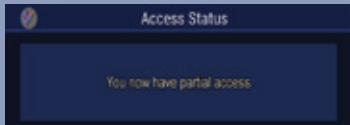
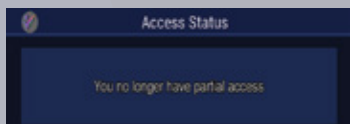
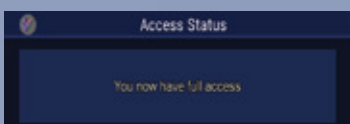
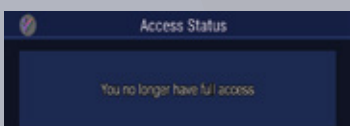
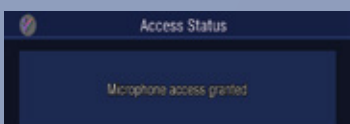
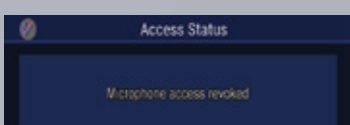
Num.	Icon	Name	Function
8.1		<b>Information</b>	Show information related to the selected <b>Radiology</b> image, such as number of image, gender, region, axis, and density
8.2	  	<b>Pick Slice</b>   Hide all slices above the selected image  Hide all slices below the selected image  Undo the hiding action  Isolate the selected slice to see it alone in the scene  Click to open the image in the 2D window. (You can click the image itself for the same effect).    <b>CT images</b>  <b>MRI</b>	Select the slice to apply different actions to it, such as revealing its landmarks and changing its density.  Change the density of the selected <b>CT</b> image to make structures with a certain density more visible  Selecting a density from here will only affect the image selected through the pick slice function and not whole region or axis.  Change the density of the selected <b>MRI</b> image to make structures with a certain density more visible  Selecting a density from here will only affect the image selected through the pick slice function and not whole region or axis.

Num.	Icon	Name	Function
		<p><b>Show Landmarks</b></p> <p><b>Search box</b></p>	<p>Show the landmarks on the parts visible on the selected image; this option is available only when you isolate a slice. Landmarks reveal the exact location of parts in the slice with their names.</p>  <p>Filter the landmarks appearing in this list by typing a keyword</p> <p>Turns off the lights of the selected landmarks and unselects them from the list.</p> <p>Show/hide landmark on slice</p> <p>Show information for the selected landmark</p> <p>Activate text-to-speech</p> <p>Click on the icon of the system you desire to reveal landmarks for only the system you selected.</p> <p><b>Note:</b> Clicking on a landmark on the image will highlight the landmark on the image and in the list, and it will also reveal its label.</p>
10		<p><b>Coronal</b></p>	<p>The name of the axis of the secondary slot, which is coronal in this case</p> <p>Maximize the image in the secondary slot, i.e., the image in this axis goes to the main slot and the image that was in the main slot goes to the secondary slot</p> <p>Hide the secondary axis slot</p> <p>Control the level of the main image by moving this slider up or down.</p> <p>Move through the image sequence for the axis.</p>
11			<p>Rotate the image to the left</p> <p>Rotate the image to the right</p> <p>Re-center the image, retaining any changes to scale and rotation</p> <p>Reset its rotation, zoom, and position</p> <p>Move to the next image in the sequence.</p> <p>Move to the previous image in the sequence.</p>

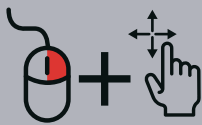
Num.	Icon	Name	Function
12			<p>Switch between the vertical and horizontal slider.</p> <p>Switch to the next density</p> <p>Switch to the previous density</p> <p>The axis of the image in the main slot, which is axial in this case</p> <p>The number of the image in the main slot, which is 245 in this case</p>
13			<p>Zoom in on the image</p> <p>Zoom out of the image</p> <p><b>(Move the knob on the slider up to zoom in, and move it down to zoom out)</b></p> <p>maximize the main image slot. This will remove the secondary axes slots and the main slot will take up the entire window.</p> <p>Close the 2D window.</p>
8.3		<p><b>Contrast</b></p> 	<p><b>Contrast:</b> Change the contrast of the images</p> <p><b>Color:</b> Change the color of the <b>Radiology</b> images depending on the contrast of the images</p> <p><b>Bones:</b> Increase or decrease the visibility of bones by altering the yellow color in the images.</p> <p><b>Muscles:</b> Increase or decrease the visibility of muscles by altering the red color in the images.</p> <p><b>Cardio:</b> Increase or decrease the visibility of blood vessels by altering the blue color in the images.</p> <p><b>Organs:</b> Increase or decrease the visibility of the organs by altering the green color in the images.</p> <p><b>Note:</b> The slide for these densities is active only if the Color slide has been moved from its default setting</p> <p>Resets all sliders to the default setting</p>

Num.	Icon	Name	Function
9		<b>System Notification</b>  	<p>This is the notification bar as it appears to the professor. The first notification the professor receives in a session will expand the notification bar into a tab. Pressing the  will minimize the tab back into a bar. All subsequent notifications in the session will cause the notification bar to change color to red. Pressing the  button on the notification bar will expand it and remove its red color</p> <p>Shows the number of notifications the educator has not seen.</p>
			<p><b>Notifications appearing on the notification bar include:</b></p>
			<p>A notification that appears to the professor when a student leaves the session.</p>
			<p>A notification that appears to the professor when a student joins the session.</p>
			<p>A notification that appears to the professor when a student requests access.</p>
			<p>Pressing the  button next to a student's name will unmute the student and enable their microphone button, allowing the student access to unmute and mute themselves freely until the student is muted again by the professor. Pressing the  button next to a student's name will remove the student from the list without giving them access to speak, i.e., nothing changes and the student's microphone remains muted.</p> <p>When users are muted by the professor, the users cannot unmute themselves because the microphone icon will be disabled. In this case, the Access Request  icon becomes active for the user; pressing the Access Request icon will send a notification to the professor that the user is requesting access to speak.</p>



Num.	Icon	Name	Func-
			An icon that indicates that the user has full access.
			An icon that indicates that the user has partial access.
			An icon that indicates that the user is not on mute.
			An icon that indicates that the user is on mute.
			<b>In addition to the indicators above, the student will have a notification box pop out when the professor takes any of the following actions:</b>
			A notification that appears to the student when partial access is granted.
			A notification that appears to the student when partial access is revoked.
			A notification that appears to the student when full access is granted.
			A notification that appears to the student when full access is revoked.
			A notification that appears to the student when no longer on mute.
			A notification that appears to the student when put on mute.

# Mouse + Mac touchpad Controls



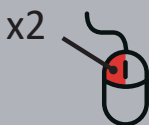
Rotate camera



Right click menu



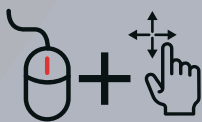
select, move, functions



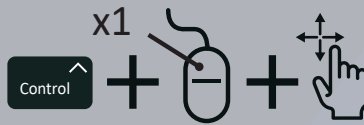
Focus on body part



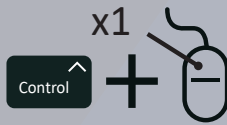
↑ Zoom in  
↓ Zoom out



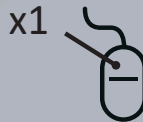
Pan camera



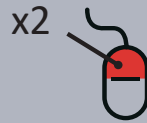
Rotate camera



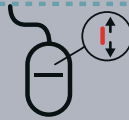
Right click menu



select, move, functions



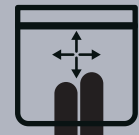
Focus on body part



↑ Zoom out  
↓ Zoom in



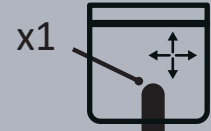
Pan camera



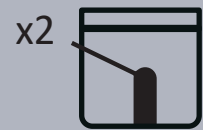
Rotate camera



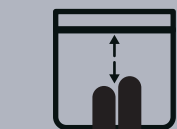
Right click menu



select, move, functions



Focus on body part



↑ Zoom out  
↓ Zoom in



Pan camera



Right-click for macOS users can be activated from:  
System Preferences > Mouse > Secondary click activation