

Anatomage TABLE

Anatomage Table EDU 5.0 User's Manual



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About Anatamage and Software

The Anatamage Table Application software (Table EDU 5.0) was released in 2016 as an update to the Table Application software from Anatamage, Inc. In this document, the Anatamage Table Application software refers to the latest version of the Anatamage Table Application software and is synonymous with the terms “Table application”, “Table EDU 5.0”, and “Anatamage Table application”. To learn more about Anatamage, visit our website at www.Anatamage.com.

Note: Table EDU 5.0 is intended for educational purposes only, and is not to be used for clinical or diagnostic purposes.

End of Life Statement

Table EDU 5.0 software is dependent on its hardware requirements. The life-cycle is limited only by the availability of the required hardware.

Language

The original language of this manual and the Table EDU 5.0 software is English.

Image Credit

The following image sets were provided by Dr. Jin Seo Park, Department of Anatomy, Dongguk University College of Medicine and Dr. Min Suk Chung, Department of Anatomy, Ajou University School of Medicine.

Full Body Male (Asian): The original slice data is from the Visible Korean data set.

Full Body Female (Asian): The original slice data is from the Visible Korean data set.

Full Body Male (Caucasian): The original slice data is from the Visible Human data set.

Full Dog and Cat slice data: This work (2012R1A2A2A01012808) was supported by Mid-career Researcher Program through the National Research Foundation of Korea (NRF) grant funded by the Ministry of Education, Science and Technology (MEST).

Full Head slice data: This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (MEST) (2010-0023360).

The following image set was provided by Brad Smith from the University of Michigan (brdsmith@umich.edu, NIH award N01-HD-6-3257 P/G F003637).

Embryo slice data set (Cases 2013 – 2023) Imaging was performed at the Center for In-Vivo Microscopy, Duke University.

The following image set was provided by David R. Hunt, PhD. (Physical / Forensic Anthropologist, D-ABFA) from the Smithsonian Institute.

Skull collection (Cases 3008 – 3054)

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System Requirements

The Table software is a graphically intense application for use on a PC workstation running a Windows operating system. It has not been designed for use on Linux, OSX, Android or iOS platforms such as iPads or other tablets.

Summary		
	Minimum	Recommended
CPU	Intel Core i5 2500 series (compatible multi-core processor)	Intel Core i7 3000 series (comparable multi-core processor)
RAM	8GB	16GB
GPU (Graphics Card)	ATI Radeon HD 6670 <i>or</i> Nvidia GT 640	Nvidia GeForce GTX 1070
Hard Disk	100GB	500GB
OS	Windows7 64bit	Windows7 64bit

Touchscreen Requirements

Summary	
Hardware	Minimum Requirement
Screen Size (Diagonal)	19 inches
Resolution	1280x720
Touch Points	3 or more

Installation Instructions

The Anatmage Table application is available from Anatmage. The software is distributed on a single content (Anatmage Table EDU 5.0 Upgrade) USB and requires a license USB to operate. The content USB contains both the application files and demonstration content (Full Body Male (Caucasian), Full Body Male (Asian), Full Body Female (Asian), High Resolution Data, Image Library). Be sure you have both USBs and your PC meets the minimum system requirements.


1. Insert both license USB and Anatomage Table EDU 5.0 Upgrade USB into PC workstation. Workstation should be connected to a network with internet connectivity.
2. Open Anatomage Table EDU 5.0 Upgrade USB, double click “autorun” and follow on screen instructions to complete installation.
3. Remove Anatomage Table EDU 5.0 Upgrade USB.
4. Launch Table application and enter Authorization Code to activate software license.

Controls

The following section discusses controls for the Table software. For touchscreen devices, please refer to your specific touchscreen hardware manufacture's calibration instructions and verification procedures before using with Table EDU 5.0.

For any measurement operations, Anatomage recommends the use of a USB computer mouse and keyboard when placing measurement landmarks for the best possible accuracy. Measurement landmarks placed using the touch-interface can be adjusted after their initial definition for improved accuracy.

Touch Commands	
Right click	Touch and hold.
Selecting icons	Tap icon to select. If compatible multi-icons are shown, use a second tap to select desired multi-icon.
On screen keyboard	Tap the far left edge of the table screen. The edge of a keyboard will appear. Touch, hold, and drag keyboard away from edge.

Keyboard-Only Commands	
Exiting Full-Screen and viewing application on single display monitor	<p>Step 1: Press F11 on keyboard.</p> <p>Step 2: Press the Windows key () and the left/right arrow to snap application window to left/right display monitor.</p>

Introduction to the Anatmage Table Application

Launching Table EDU 5.0 Application



From the desktop, double-tap (double-click) the Table icon to launch the Anatmage Table application. Users will be shown the Application Toolbar below.



Open File	Opens multi-dicom (DCM) scan files or Invivo (INV) scan files.
Import PACS	Opens user interface for establishing PACS connection and downloading files.
Gross Anatomy	Opens user interface for selecting full body Gross Anatomy data.
High Res Regional Anatomy	Opens user interface for selecting higher resolution regional scans from male and female real tissue data.
Image Library	Opens user interface for selecting educational clinical case data sets.
Curriculum	Opens user interface for selecting curriculum views. Curriculum views, provided by Anatmage, are single scans with pre-made annotations and view sequences for teaching purposes.
About	Displays the Table's software and hardware info.
Minimize	Minimizes the Table application. Available only when case is currently open.
Exit Application	Closes the Table application.
Cancel	Closes the Application toolbar. Available only when case is currently open.

Opening Scans

Step 1: Select **Open File** from the Application toolbar.

Step 2: Use the Windows Explorer interface to navigate to directory of INV file or DCM file series.

INV file Select file and press **Open**.

DCM series Select single DCM file and press **Open**. Software will scan through folder and check each DCM file's metadata prior to loading all DCM files in the same series.

Step 3: Table application will automatically construct image volume based on INV or DCM file.

For INV files, any additional content created and saved with the patient data using Invivo5 software (surface models, models, etc.) will be loaded as well.



WARNING: Table application and Invivo5 software will load in DCM files contained within the same folder and of the same imaging series when reconstructing the volume. It is the responsibility of the user to confirm that all slice information is available and in the same folder when loading onto Table5.0 or saving from Invivo5.



WARNING: If Table application detects that some DCM files are missing, corrupt, or otherwise determined inaccurate, an error message will appear about possible inaccurate reconstruction. The user may continue with volume reconstruction and should exercise caution when reviewing any data with possible inaccuracies.



WARNING: When loading additional content created (surface models, comments, etc.), content is created by another user and is not part of the original patient image data.

Controlling the Volume Rendering

The following section discusses use of the touchscreen for controlling the volume rendering. Table application supports keyboard, mouse, and touch controls when navigating the application. Some functions are keyboard specific and do not have a designated icon in the user interface.

Touch Control

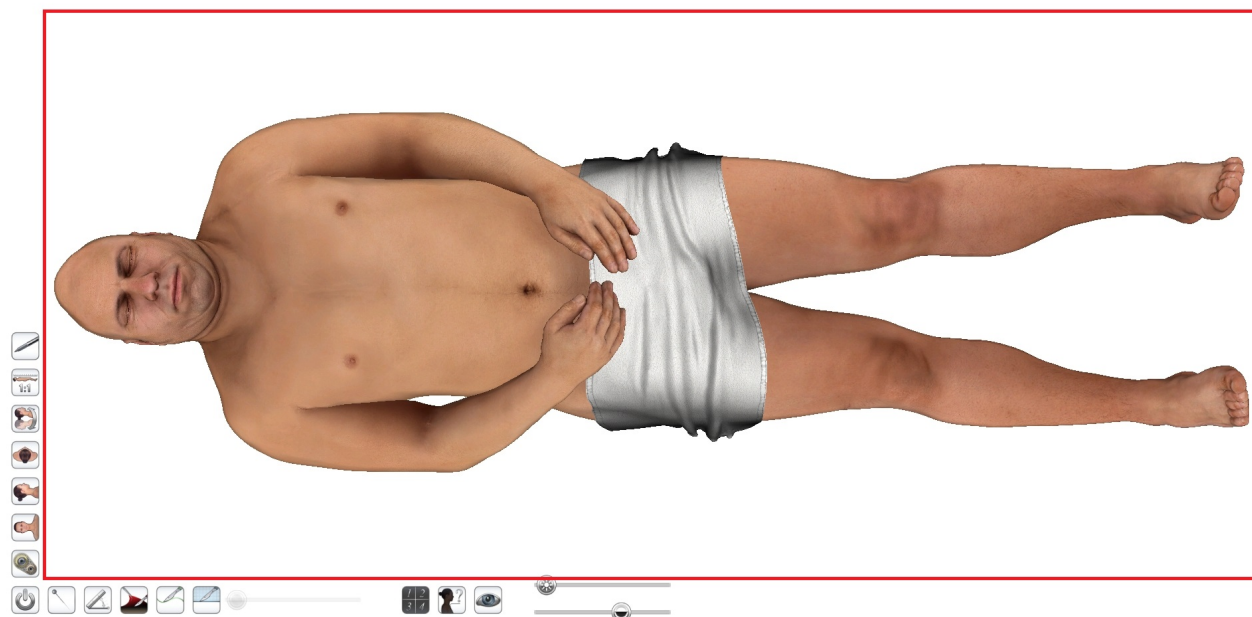
Within the Rendering Window, the Table application accepts single- and multi-touch inputs.

Number of Touches	Movement	Result	Description
Volume Viewing:			
Single	Drag	Rotate	Rendering will rotate about the scanning region's geometric center point.
Two	Drag	Pan	Rendering will pan in the dragged direction.
	Pinch	Zoom in/out	Rendering will become larger or smaller.
	Rotate	Spin	Rendering will rotate about the axis perpendicular to Table surface and through the scanning region's geometric center point. (Settings → Spin Enabled)
Three	Drag up/down	Adjust Clipping Plane	Can adjust clipping plane by scrolling through volume rendering in parallel with initial cutting plane.
Slice Mode Viewing:			
Single	DISABLED	N/A	N/A
Two	Drag	Pan	Slice image will pan in the dragged direction.
	Pinch	Zoom in /out	Slice image will become larger or smaller.
Three	Drag up/down	Scroll through slices	Can scroll through cross-sectional slices of selected data.




Keyboard and Mouse Control

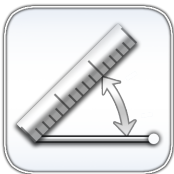



Number of Touches	Movement	Result	Description
Volume Viewing:			
Left Click	Drag	Rotate	Rendering will rotate about the scanning region's geometric center point.
Shift + Left Click	Drag	Pan	Rendering will pan in the dragged direction.
Ctrl + Left Click	Drag up/down	Zoom in/out	Rendering will become larger or smaller.
Slice Mode Viewing:			
Shift + Left Click	Drag	Pan	Rendering will pan in the dragged direction.
Ctrl + Left Click	Drag	Zoom in/out	Rendering will become larger or smaller.








User Interface and Layout


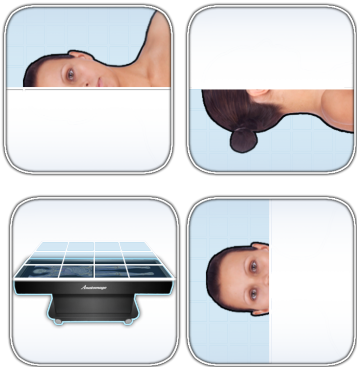


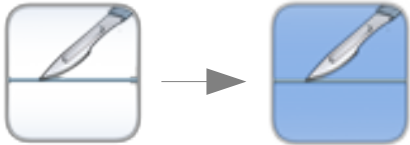







Red box outlines Rendering Window. Image rendering, surface models, and annotations will appear in this region. Region accepts keyboard, mouse, single-touch, and multi-touch controls.



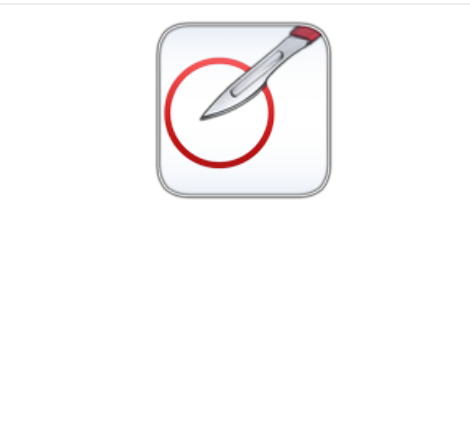

Icon	Description
	<p>Application toolbar</p> <p>Opens the Application toolbar. (Open File, Gross Anatomy, Image Library, Curriculum, etc)</p>
	<p>Pin Tool</p> <p>Used for placing 3D pin models in volume viewing.</p> <p>To place a pin, select the pin style of choice and then select a place on the volume. The pin may be moved by first taping on the pin to display a red box and yellow sphere. Holding and dragging the red box moves the pin's XYZ location while holding and dragging the yellow sphere rotates the angle of the pin.</p> 

	<p>Measurement Tool Tap the icon to show the associated measurement icons.</p> <p>The font size and color of the measurement value may be adjusted in the Adjust UI window under the Image Control Settings icon (p. 23).</p> <p>Measurements can be made in both volume and slice mode viewing.</p>
	<p>Distance Measurement Tool Step 1: Select distance measurement tool. Step 2: Tap on two locations on the volume. Red dots will indicate the selected spots, and a line will appear between them with a distance measurement. To adjust a measurement spot, select and drag the landmark red dot.</p>
	<p>Angle Measurement Tool Step 1: Select angle measurement tool. Step 2: Tap on three locations on the volume. Red dots will indicate the selected spots, and an angle will appear between them with an angle measurement. Distance measurements of the angle's sides will also appear. To adjust a measurement spot, select and drag the landmark red dot.</p>
	<p>Delete Measurement Step 1: Select measurement. Specified measurement will turn red and become bold. Step 2: Select icon to remove specified measurement.</p>

	<p>Clear All Select icon to clear all measurements from the volume.</p> <p> WARNING: Identification of anatomical landmarks and structures are limited in part to image resolution and subject to user error. To ensure correct identification of landmarks and other fine measurements, it is recommended that users plug-in and use a USB computer mouse and keyboard for the most accurate possible placement of measurement landmarks (red dots). All measurement landmarks, including those placed using the touchscreen interface, can be adjusted by selecting and dragging the landmark. It is the responsibility of the user to place or adjust the measurement landmark locations as needed for analysis.</p>
	<p>Presets Tap to show presets numbered 1-10. Using a second tap, select a particular preset or open the Presets Menu.</p> <p>User can create an unlimited number of presets using the Preset Menu. Presets will automatically switch the image in rendering window based on saved definitions. See p. 31 for more information on how to create presets.</p>
	<p>Volume Orientation Tap to select a particular orientation. From top left going clockwise: Coronal View, Sagittal View, Axial View, Flip View.</p> <p> WARNING: Image orientation is based on scanner/DCM definitions or redefined orientations from Invivo5 software.</p>
	<p>1:1 Life Size Scaling Tap icon to rescale image to life size.</p> <p> WARNING: Exact scaling depends on scan size, scan resolution, and hardware specifications.</p>

	<p>Clipping Plane Control Tap icon to display Clipping Plane Control all Clipping Plane icons as well as the Flip and Reset icons.</p> <p>Custom Clipping Plane is activated by default.</p>
	<p>Predefined Clipping Planes Select a predefined clipping plane by tapping on the icon. The volume will automatically be clipped in the designated direction. From top left going clockwise: Sagittal Plane, Coronal Plane, Axial Plane, Parallel Plane.</p> <p><i>Parallel defines the Table surface as the clipping plane.</i></p> <p><i>Only one predefined clipping plane may be applied at a time.</i></p>
	<p>Flip Tap icon to flip visibility between sides of the clipping plane. This affects all predefined clipping planes and the most recently defined custom clipping plane.</p>
	<p>Reset Tap icon to remove all applied clipping planes (custom and predefined).</p>
	<p>Custom Clipping Plane</p> <p>Step 1: Tap scalpel icon with the straight line to activate custom clipping plane. The icon will become highlighted when the custom clipping plane mode is activated.</p> <p>Step 2: Using one touch, touch anywhere within the Rendering Window and drag across the volume to generate the</p>

	<p>custom clipping plane, defined by a blue line. The line will update to show the current clipping definition.</p> <p>Step 3: Release touch to finish defining plane.</p> <p>Step 4: Select a side of the plane to remove by tapping the volume on that side.</p> <p>Repeat the above steps to create up to six (6) Custom Clipping Planes. After the sixth plane, the seventh plane will replace the first defined Custom Clipping Plane. The eighth will replace the second and so forth.</p>
	<p>Clipping Plane Slider Bar</p> <p>When a clipping plane, either a predefined or a custom plane, is active the slider bar can be used to adjust the location of the plane. The slider bar can be used to adjust only the most recently defined clipping plane.</p>
   	<p>Dissection Tool (<i>for segmented cadaver data</i>)</p> <p>The Dissection Tool allows the user to create custom cuts and remove structures, or parts of structures, within the sculpt area. After tapping the tool, the icon becomes highlighted signifying it is enabled and the Dissection Tool dialog appears. Either a linear cut or curved sculpt can be selected. To make a custom sculpt:</p> <p>Step 1: Hold and drag the custom sculpt anywhere on the volume. A red line will appear outlining the sculpt area.</p> <p>Step 2: Tap inside or outside the area to select dissection boundaries. Either a single structure or all structures in selected boundary can be removed.</p> <p>Step 3: Remove structures within the sculpt area by tapping on them.</p> <p>Restore Tool</p> <p>Selecting this icon will restore the volume from the last</p>

	<p>sculpting operation.</p> <p>Undo: Will undo the last structure removal action.</p> <p>Redo: Will redo the last structure removal action.</p> <p>Close: Closes the Dissection Tool Dialog.</p>
	<p>Dissection Tool (for DICOM data)</p> <p>The Freehand Dissection Tool allows the user to create custom cuts on the scan volume. After tapping the tool, the icon becomes highlighted signifying it is enabled and the Freehand Dissection Tool dialog appears. To make a custom sculpt:</p> <p>Step 1: Hold and drag the custom sculpt anywhere on the volume. A green line will appear outlining the sculpt area.</p> <p>Step 2: Tap inside or outside the area to remove the all the volume on either the inside or outside of the sculpt outline, respectively.</p> <p>To enable another freehand sculpt, tap the Freehand Dissection Tool icon again. Once the icon is highlighted, repeat steps 1 and 2 to make another freehand sculpt.</p> <p>Undo: Undoes the last freehand dissection operation.</p> <p>Restore: Resets the volume so that no dissection operations are applied.</p> <p>Close: Closes the Freehand Dissection Dialog.</p>
	<p>Craniotomy Tool (For DICOM data)</p> <p>Step 1: Select craniotomy tool.</p> <p>Step 2: Hold and draw custom sculpt across any cranial portion of the CT or MRI Scan.</p> <p>Step 3: Release touch and software will automatically close the custom sculpt and perform craniotomy.</p> <div data-bbox="656 1711 774 1833">  </div> <div data-bbox="826 1711 1450 1841"> <p><i>WARNING: The Craniotomy Tool is meant to be used as a Demonstration Tool only. The amount of volume removed from a scan is dependent on the scalar range used to view DICOM data.</i></p> </div>

**Explore Tool**

Used for identifying segmentation and user created content.

To use the tool in the Female Full Body with Models and user created INV files with models:

Step 1: Tap the icon to enable the tool (icon will brighten).

Step 2: Tap anywhere on the volume. The annotation or model closest to the touch will be annotated.

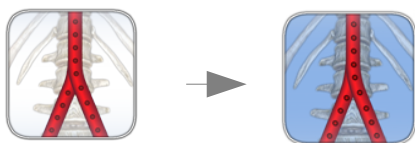
To use the tool with segmented cadaver data:

Step 1:

Tap the icon to open up the Explore Tool Dialog. Next, select a particular icon with a second tap. The icon will become highlighted to indicate it is enabled.

**Step 2:****Remove Tool**

Tap anywhere on volume. Structure closest to touch location will be removed from the volume. Tap on name to enable more detailed annotations.

**Blood Flow Tool**

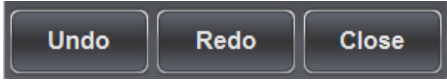


Tap on a vein or artery. Blood flow will be simulated to or from the Heart.

**Isolate Tool**

Tap anywhere on volume. Structure closest to touch location will be annotated and all other volume elements will be made transparent. Tap on the same structure again to remove all transparent structures. Tap a third time to add structures back in again. Tap on name to enable more detailed annotations.

**Label Tool**





Tap anywhere on the volume. The name of the structure closest to the touch location will be displayed. Tap on name to enable more detailed annotations.







	<p>Step 3: To exit out of any explore tool mode, tap the enabled tool to disable (the icon will no longer be highlighted).</p> <p>Undo, Redo, & Close: After using the removal, display, or name tool, tap Undo to undo the last action or Redo to redo the last action. Tap the close icon to close the Explore Tool Dialog.</p> <p>The font size and color of the explore text may be adjusted in the Adjust Annotations window under the Image Control Settings icon (p. 23).</p>
	<p>Visibility Control</p> <p><i>Structures</i> Tap icon to open Volume Visibility dialog to adjust rendering window images. User can add/remove layers of demonstration data sets or adjust volume rendering view presets for any DCM file data sets. See p. 24 for more information on using the Volume Visibility dialog.</p> <p><i>Annotations</i> Tap “A” icon next to any entry to turn on all annotations under that entry.</p>
	<p>Brightness/Contrast Slider Bars</p> <p><i>When viewing segmented cadaver data:</i> Drag the upper slider bar right/left to add or remove large systems from the volume rendering (skin, skeletal, muscular, gastrointestinal, respiratory, urinary, reproductive, and endocrine). Drag the lower slider bar left/right to add or remove the cardiovascular, nervous, and lymphatic systems from the volume rendering.</p> <p><i>When viewing DICOM data:</i> Drag the upper slider bar right/left to increase/decrease the <i>Brightness</i> (density) of the volume in the Rendering Window.</p>

Shift the lower slider bar right/left to increase/decrease the *Contrast* of the volume in the Rendering Window.

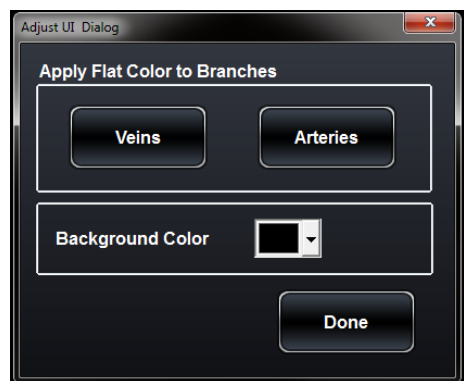
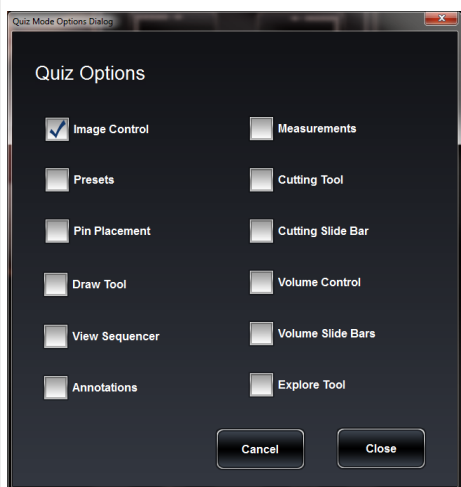


WARNING: Brightness and Contrast settings are dependent upon the volume rendering range defined in the Image Control Settings (p. 21).

	<p>Annotation Controls (for DICOM data)</p> <p>Opens Annotation dialog for enabling/disabling comment visibility.</p> <ul style="list-style-type: none"> • Tap On/Off icon at the top left of the dialog to show or hide all enabled annotations. • Tap On/Off icon next to each entry to turn categories or individual annotations On/Off. • Tap a system or category to show associated subsystems. Selected entry will be highlighted blue. • User can adjust where annotation texts will appear: <i>Top, Bottom, Right, Left</i>. • Search bar in lower right of dialog allows user to search for a particular structure. Tap Clear to clear all search terms. • Annotations saved with Invivo will appear with <i>Comment</i> and <i>Marker</i> as System and Category, respectively. • User can adjust coordinates of annotations by dragging text to a new location. Tap the circle to the right of the associated structure in the Annotation Dialog to save the new annotation coordinates.
	<p>View Sequencer</p> <p>Tap icon to import and playback View Sequences (.vseq files) created from Invivo5 software. Use this icon to also play the 4D cases in the Image Library.</p> <p>This icon can also be used to view Curriculum slides in the Curriculum data sets.</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p><i>WARNING: View Sequencer behavior is best when using the same particular image data set that was used when initially creating the View Sequence in Invivo5.</i></p> </div> </div>
	<p>Draw Tool</p> <p>Tap to open the Pen Tool Dialog. Using second tap, select a particular Pen Tool.</p> <p>Draw by dragging in rendering window.</p>

	<p>Predefined Draw Colors Tap to select a predefined Pen Tool color. From top left going clockwise: Red, White, Yellow, Blue.</p> <p>Default width of Draw Stroke for all colors is 2.</p>
	<p>Draw Preset The Draw Preset tool allows the user to customize the color and width of a pen.</p> <p>Step 1: Tap to select a particular pen preset. Step 2: Tap the Draw Tool Settings icon to adjust color and stroke width.</p> <p><i>The Pen Tool will save the latest setting used for each preset.</i></p>
	<p>Eraser: Tap and drag on display window to remove pen, text, or arrow marks.</p>
	<p>Text Tool: Tap to activate and tap on display window.</p>
	<p>Arrow Tool: Tap to activate and tap on display window to draw arrow tail. Tap again to draw arrow head.</p>
	<p>Save Image: Tap the camera icon to save a screen shot (.jpg, .png, or .bmp) of the application.</p>

	<p>Undo: Tap icon to undo last drawing action.</p> <p>Minimize: Tap icon to minimize Draw Tool dialog.</p> <p>Close: Tap icon to erase all drawings in the Rendering Window.</p>
  	<p>Image Control Settings</p> <p>Tap the icon to open the Image Control Settings dialog to adjust the multi-touch and rotation controls, volume rendering range, camera projection, UI settings, and enable Quiz mode..</p> <p>Adjust Layout: Toggle the application icons between the four quadrants of the Anatmage Table. Icons are rotated to accommodate users in different areas of the Anatmage Table.</p> <p>Enable Vertical: Toggle between Vertical Viewing Mode and Horizontal Viewing Mode. In Vertical Viewing Mode, icons are rotated and condensed into categories, as shown in the image below. Table application has slightly limited functionality.</p> <div data-bbox="662 1213 771 1312"> </div> <p>WARNING: <i>If Table application detects that some DCM files are missing, corrupt, or otherwise determined inaccurate, an error message will appear about possible inaccurate reconstruction. The user may continue with volume reconstruction and should exercise caution when reviewing any data with possible inaccuracies. An inaccurate volume reconstruction created in Horizontal Viewing Mode will still contain inaccuracies when viewed in Vertical Viewing Mode.</i></p> <p>Ruler: Displays a ruler along the length of the Rendering Window. Highlighted when enabled. Scales to life-size when 1:1 life size is activated.</p> <div data-bbox="662 1642 771 1740"> </div> <p>WARNING: <i>Exact scaling depends on scan size, scan resolution, and hardware specifications.</i></p> <p><i>Volume Rendering Preference:</i></p>



Min/Max: Define the minimum and maximum limits of the scalar values for reconstructing volume from slice image data.

Anatomage recommends -500 to 1500 for CT data and 0 to 3000 for MRI data. Table 5.0 will automatically set this value upon loading a scan.



WARNING: The values set in this Volume Rendering Preference field will have a direct effect on how the image data is reconstructed and displayed within the rendering window. The rendering range should be adjusted appropriately depending upon the modality (CT, MR, etc.) and scanning parameters.

Quality: When icon is selected, quality rendering is on. When icon is not selected, performance rendering is turned on.

Apply: Enable any changes made to the rendering range or rendering performance adjustments.

Quiz Mode: Lock specific features. Define locked features using **Options**. Create a password for managing use of the Quiz Mode and enable it using **Enable**. Password must be used for disabling Quiz Mode as well. In the event that the password is forgotten, the master password can be used to disable Quiz Mode.

Master password – AnatoTest0

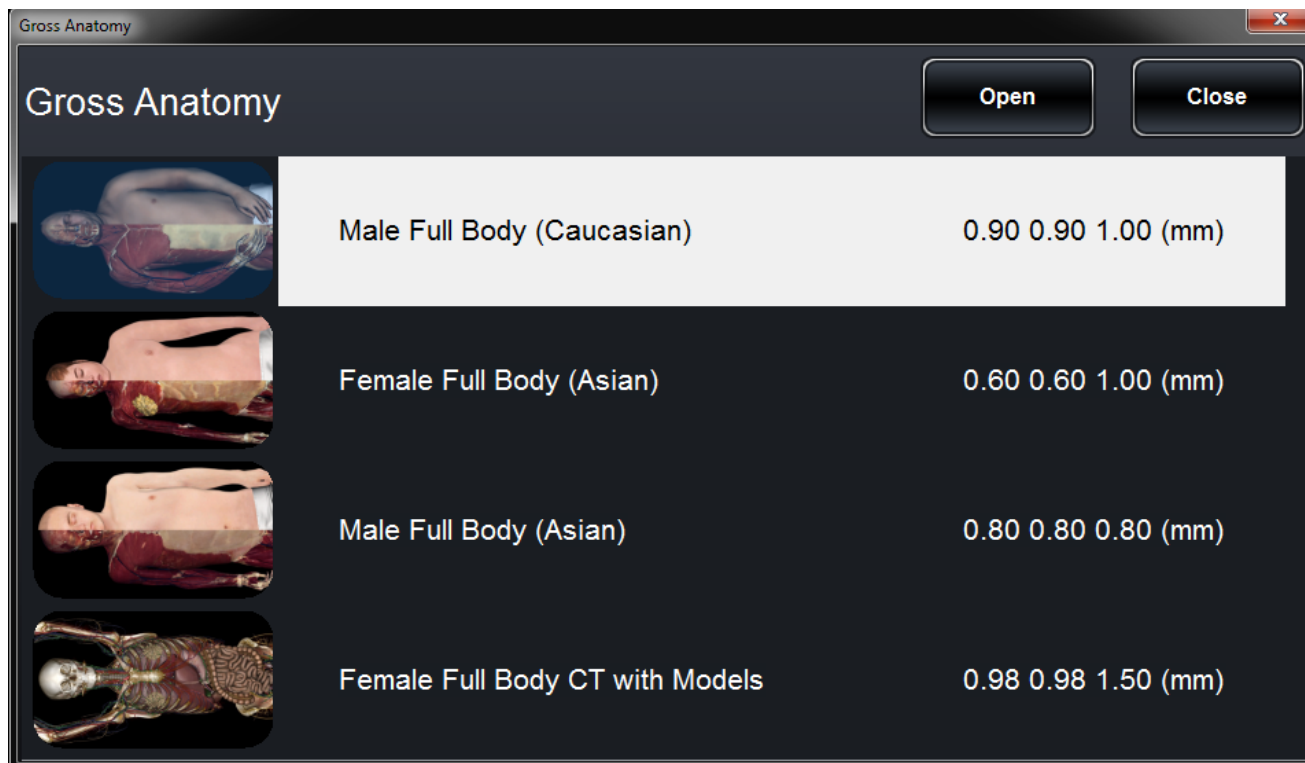
Adjust Colors: The user can apply a flat Red or Blue color to arteries and veins. The user can also change the background color of the Volume Rendering Window to other colors using the drop down menu.



Gross Anatomy

(This section contains images featuring educational content and should not be used as clinical reference or for diagnostic purposes).

Tap **Gross Anatomy** on Application toolbar to open the Full Body Anatomy menu.



- Dialog lists all available Gross Anatomy scans with resolution.
- Tap entry name, then tap **Open**.
- Tap **Close** to close dialog.

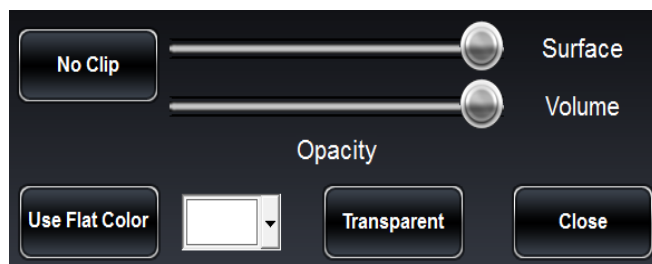
Image Adjustment

Segmented Cadaver Data

Selecting the Volume Visibility Control Icon will open the following dialog.



- Volumes are organized into systems, categories, and structures.
- Tap On/Off icon at the bottom of the system list to turn **all structures** On/Off.
- Tap On/Off icon next to each entry to turn systems, categories, or individual structures On/Off.
- Tap a system or category to show associated subsystems. Selected entry name will be highlighted blue.
- Tap circle icon next to entry names to adjust **Opacity**, **No Clip**, and **Color** settings for volumes. If adjusted, circle icon becomes gray.



No Clip: If turned on, volume cannot be sliced through.

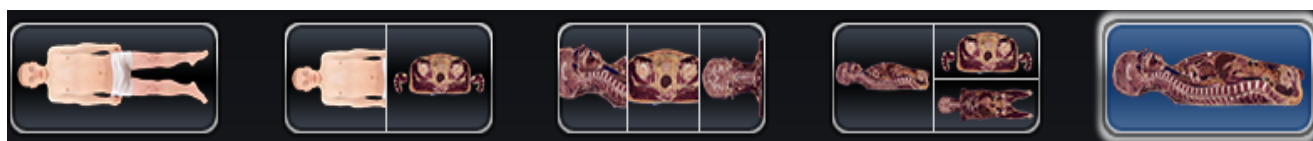
Opacity: Adjust slider bars to adjust surface and volume transparencies.

Transparent: Auto adjust surface and volume transparencies (50% surface opacity, 0% volume opacity)

Flat Color: Choose a color in the drop down color menu. Tap button to highlight structure in chosen color.

- Search bar in lower right corner allows user to search for a particular structure. Tap **Clear** to clear all search terms.

Viewing Layouts Select different layout icons to view volume cross-sections. **Layout 1** allows users to view a volume rendering of the data. **Layout 2** allows users to view both a volume rendering as well as a slice cross section simultaneously. Using **Layout 3** and **Layout 4**, users can view all three cross-sections (axial, coronal, sagittal) simultaneously. Using **Layout 5**, users can view one cross-section at a time. Users can scroll through each cross-sectional view independently. Use clipping plane icons and clipping plane slider bar to adjust individual cross-sections. Tap on Layout icons to toggle between views.



Various volume and slice mode viewing options.

Annotations

Annotations can be activated in the Volume Visibility Dialog. Annotations are linked with clipping planes. Chosen annotations will be displayed, but lead lines will only appear when associated volume is close to the clipping plane. If no clipping plane is defined, lead lines will always appear.

- Tap the “A” icon next to each entry to enable all annotations under that entry.
- Tap the “Annotation Visibility” checkmark box to show/hide all enabled annotations.
- Tap “Custom Annotation” to create your own annotation. Type out the desired annotation text and tap anywhere on the volume to select annotation coordinate.
- Tap on the settings tab and tap “Adjust Text” to adjust where annotation texts will appear (*Top, Bottom, Right, Left*) and how annotation text will appear.
- Annotations saved with Invivo will appear with *Comment* and *Marker* as System and Category, respectively.
- User can adjust coordinates of annotations by dragging text to a new location. Tap the circle to the right of the associated structure in the Annotation Dialog to save the new annotation coordinates.



WARNING: Saving the new coordinates for an annotation will overwrite the associated information on the currently loaded .csv annotation spreadsheet. A back up annotation spreadsheet is available on the Table desktop.

Load Annotation File Load in custom annotations (.csv file with character set “UTF-8”, separated by tab, and set to “quoted field as text”) created using Invivo5 software (or other software).

Customizing Annotations (for DICOM Data)

Annotations can be added, removed, or edited by opening the annotation file linked to the desired data set (.csv file with character set “UTF-8”, separated by tab and set to “quoted field as text”) in OpenOffice. Separate annotation files can be found for the Male Full Body (Caucasian) scan, Female Full Body Scan, Male Full Body (Asian) scan, Female Full Body with models scan, as well as each of the High Res Regional scans. For more instruction on customizing annotations, consult the “How to Make and Import Custom Annotations 5.0” PDF file.

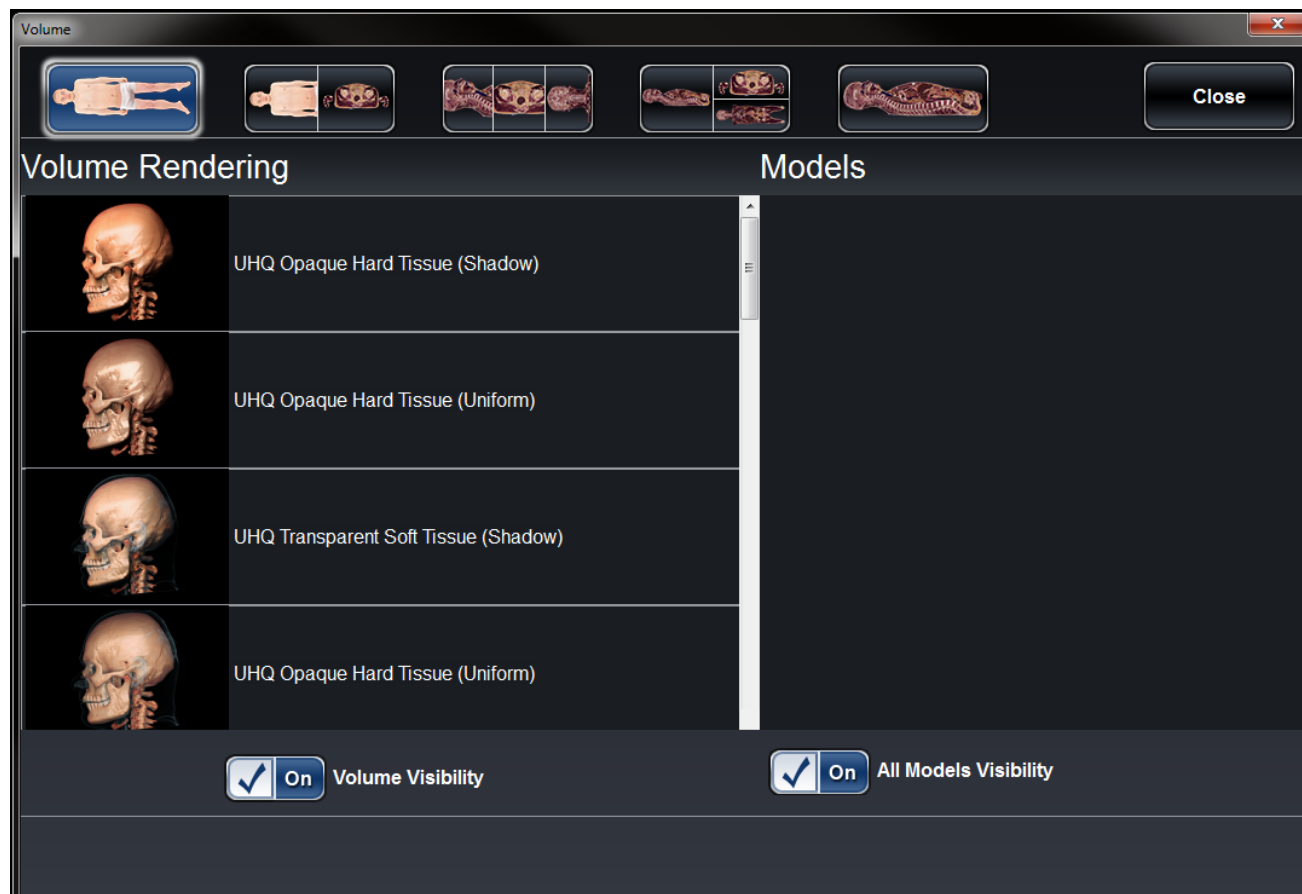


WARNING: Open same data set that was used to create annotation file in order to preserve correct coordinate system.

Female Full Body with Models and DCM/INV Files

(This section contains images featuring educational content and should not be used as clinical reference or for diagnostic purposes).

Selecting the Volume Visibility Control Icon will open the following dialog.



Volume Visibility	Turn On/Off volume rendering.
All Models Visibility	Turn On/Off model visibility.
Volume Renderings (Gray Scale, X-Ray, Transparent Soft Tissue, Transparent Hard Tissue, Transparent Soft + Hard, etc.)	Collection of different volume rendering presets. Each can be adjusted using the <i>Brightness</i> and <i>Contrast</i> settings or the Rendering Slider Bars on the main Table user interface. Users can create their own custom volume rendering presets using the Invivo5 software. This setting can be exported as a volume configure file (.vcf). Custom loads in a .vcf file.



WARNING: Ultra High Quality Rendering (UHQ) requires an NVIDIA graphics card to function. If Table application detects that some DCM files are missing, corrupt, or otherwise determined inaccurate, an error message will appear about possible inaccurate reconstruction. The user may continue with volume reconstruction and should exercise caution when reviewing any data with possible inaccuracies.

Viewing Layouts

Layout 1 allows users to view a volume rendering of the data. **Layout 2** allows users to view both a volume rendering as well as a slice cross section simultaneously. Using **Layout 3** and **Layout 4**, users can view all three cross-sections (axial, coronal, sagittal) simultaneously. Using **Layout 5**, users can view one cross-section at a time. Users can scroll through each cross-sectional view independently.



CT Presets (Only available in slice mode for DCM image sets)

Tap to show all available radiology presets. Using a second tap, select a particular radiology preset.

Available CT presets: Brain, Abdomen, Mediastinum, Bone, Lung, Liver

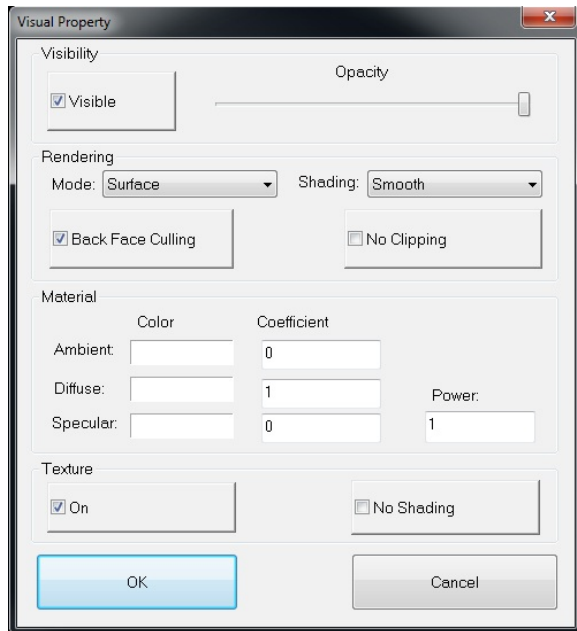


WARNING: CT presets are dependent upon original scanner/DCM HU definitions. User is responsible for adjusting rendering range and settings to ensure all structures are visible in the scan.



WARNING: MRI scans will automatically have their volume rendering range adjusted for optimal viewing. The user can specify a specific rendering range by manually entering the minimum and maximum values in the settings menu.

Model Settings



Open Visual Property Dialog for currently selected digital surface model.

Visibility

- Turn On/Off model visibility
- Adjust the *Opacity* of a particular model

Rendering

- Adjust *Mode*: Surface, Wireframe, or Points
- Adjust shading: Smooth or Flat
- Turn On/Off **Back Face Culling**
- Enable **No Clipping** (clipping planes do not affect model)

Material

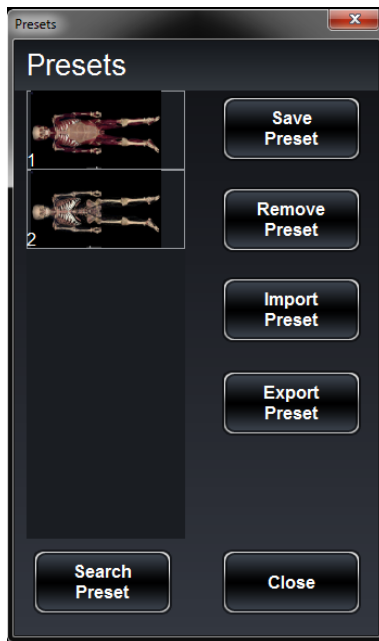
- Adjust surface model appearance by changing color and light settings

Texture

- Turn On/Off texture applied to model
- Turn On/Off shading applied to model

Tapping **OK** will close the *Visual Property* window and save the changed settings.

Preset Dialog



Save Preset

Create an unlimited number of presets: saves volume orientation, clipping planes, freehand dissection cuts, model visibility, volume visibility, slice mode layout, annotations, and pins.

Remove Preset

Delete the currently selected preset.

Export Preset

Export all saved presets as a visibility preset file (.vpf).

Import Preset

Load in .vpf file

Search Preset

Search by Preset Number.

Close

Close Preset Dialog.

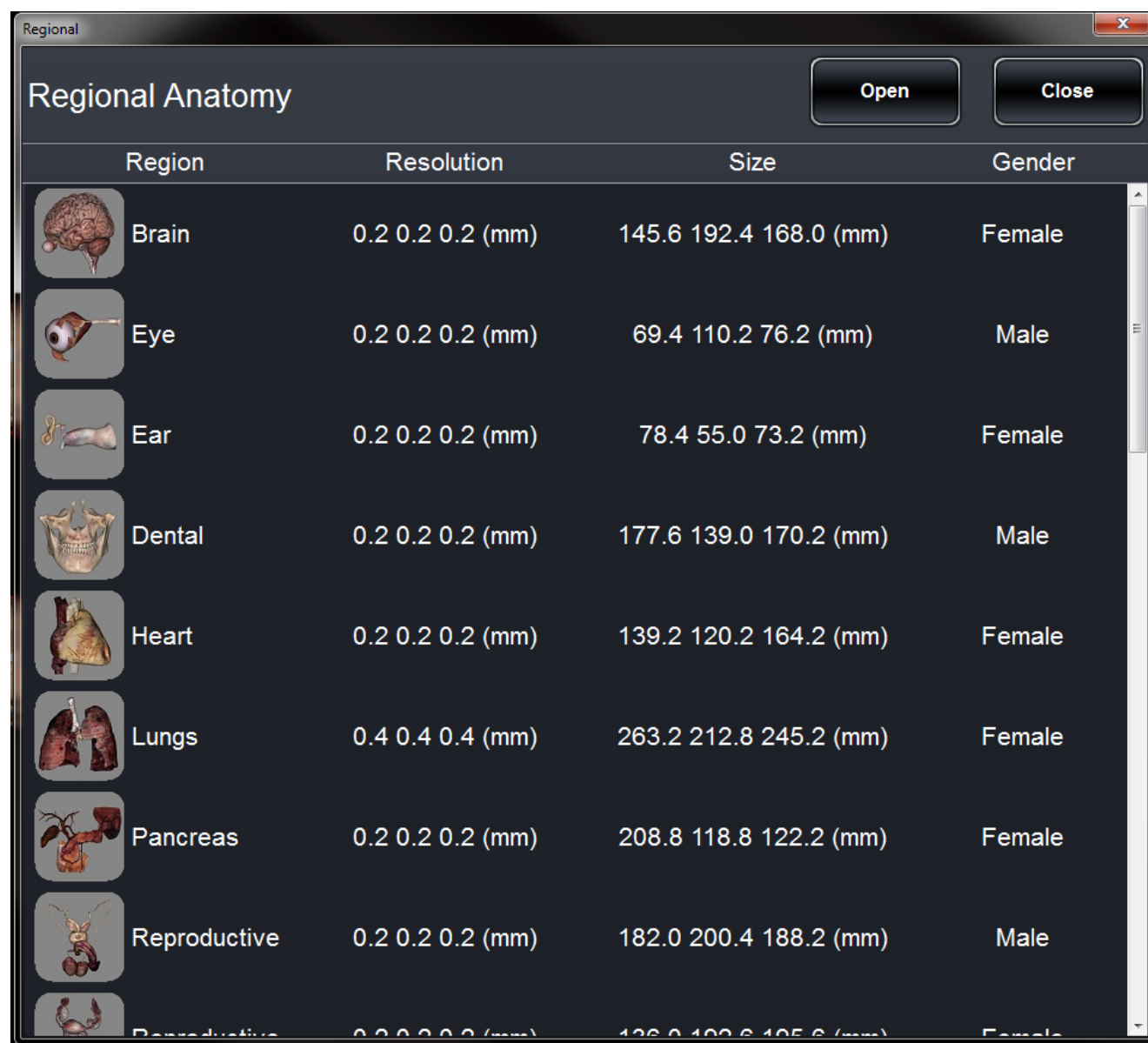


WARNING: Preset behavior is best when using the same particular image data set and volume rendering range that was used when initially creating the presets.

High Resolution Regional Anatomy

(This section contains images featuring educational content and should not be used as clinical reference or for diagnostic purposes).

Tap **High Res Regional Scans** on Application toolbar to open the *Regional* Dialog.



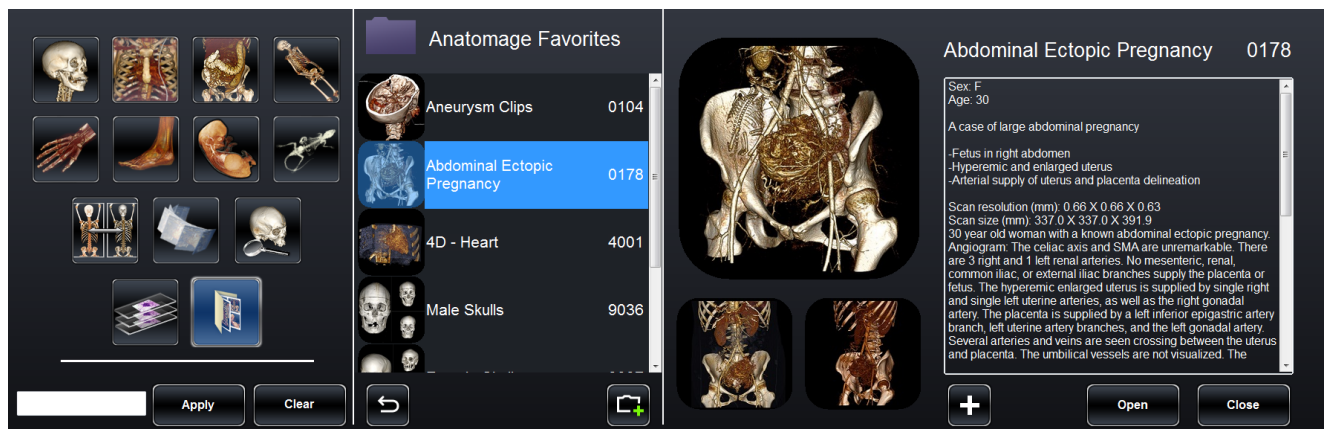
- Dialog lists all available regional scans with *Region*, *Resolution*, *Size*, and *Gender* of original scan.
- Tap entry name, then tap **Open**.
- Tap **Close** to close dialog.

Image Library

(This section contains images featuring educational content and should not be used as clinical reference or for diagnostic purposes).


The Image Library is a collection of scans showing various clinical case examples. Through the use of contrast media and other imaging techniques, real patient anatomical features are highlighted. Each scan comes with scan information, if available.

Select **Image Library** from Application toolbar to open the *Case Library* dialog.



- Scans are sorted by region (*Head & Neck, Thorax, etc.*) and type (*4D, Comparison, etc.*)
- Tap on a divisional icon to view all associated scans.
- Select scan name to display additional clinical information (*Info, History, Findings, Impression, Other*) along with scan resolution and size.



- Tap on the  icon to access **Folders** category. Anatomage preinstalls three default folders including Recently Opened scans, Anatomage's Favorite scans, and Recently Added scans.



- To create your own folder, tap the  button and enter in the desired Folder name.




- To remove your own folder, tap the  button.



- To add a case to a folder, tap the  button and choose the desired folder.

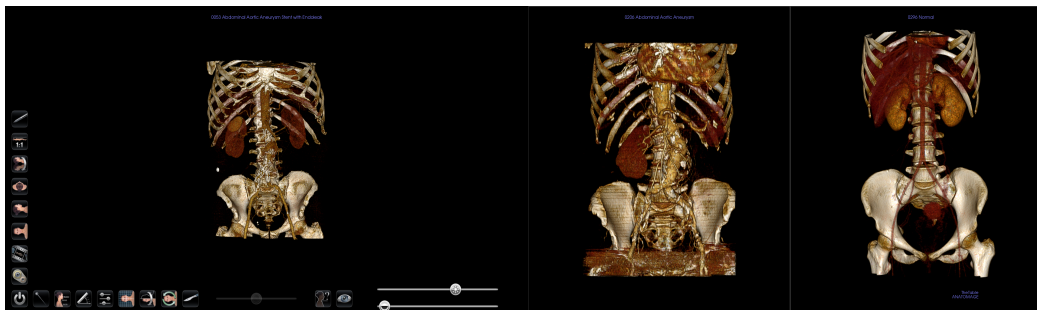


- To remove a case to a folder, tap the  button.

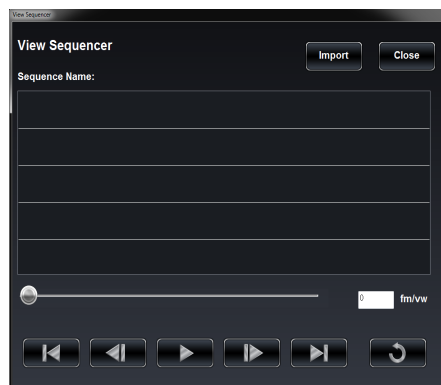
- Recently opened scans are saved under the **Recently Opened** folder.

Comparison

Displays three related scans linked in movement, clipping plane, brightness/contrast, and volume rendering mode for comparison. Note: Comparison Cases are not compatible with Vertical Viewing Mode.



4D scans







Scans showing movement



To Play 4D scan:

Step 1: Tap the View Sequencer icon



Step 2: Tap  to start/pause movement. Tap  to loop playback.

Step 3: Tap  to move forward one frame. Tap  to move backward one frame.

Step 4: Tap  to cut to the last frame. Tap  to return to the first frame in the sequence.

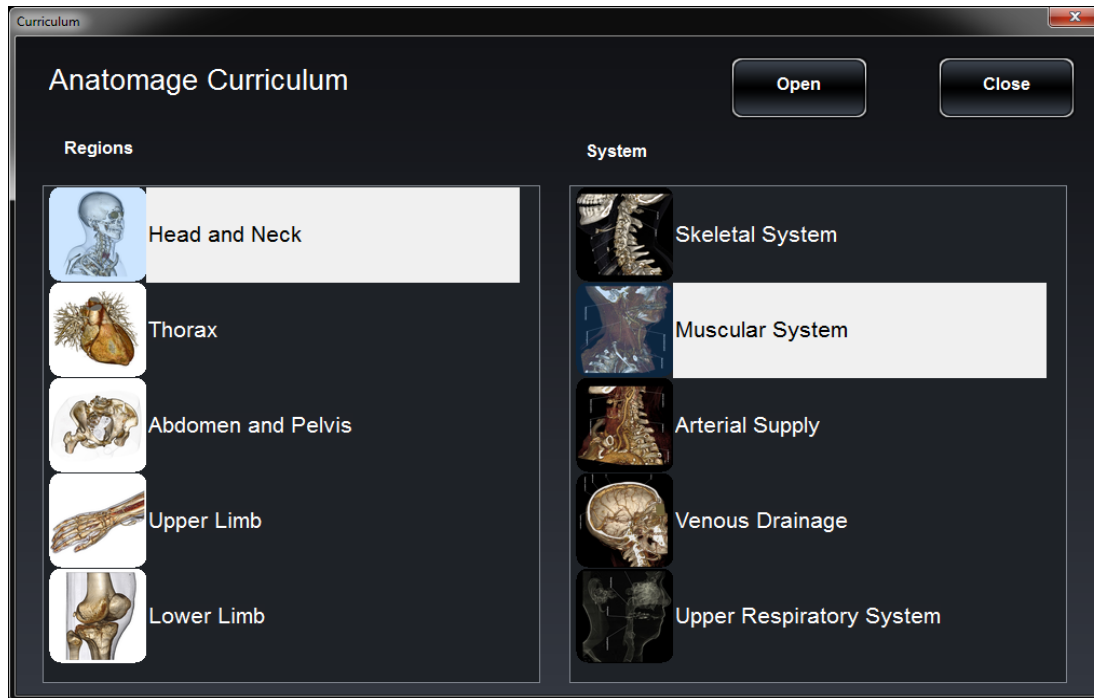
Step 5: Tap Close to close dialog.

User can rotate or clip volume while video loop is playing. Video playback will pause when user is rotating volume. Pause playback when not viewing scan to conserve computer memory.

Curriculum

The Curriculum consists of a set of single scans with pre-made annotations and view sequences, provided by Anatomage. Scans are sorted by region (*Thorax*, *Upper Limb*, etc) and system (*skeletal*, *muscular*, etc). The curriculum is intended for teaching purposes.

(This section contains images featuring educational content and should not be used as clinical reference or for diagnostic purposes).

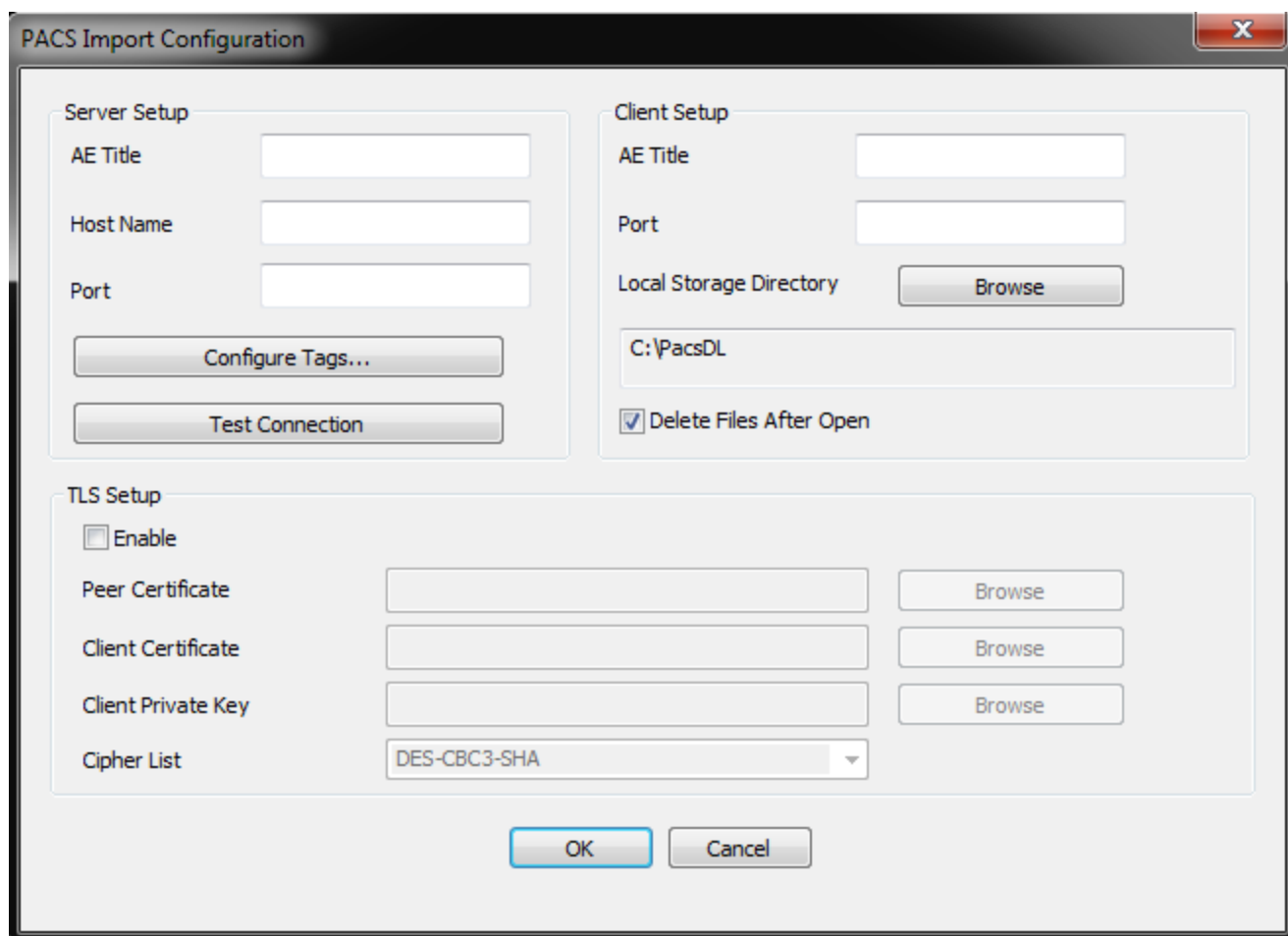


PACS Integration

The Anatomage Table can import scans directly from PACS server. Tap on “Import PACS” and tap on “Configure”. Under Server Setup, type in the PACS server AE Title, Host Name and Port. Under Client Setup, type in the AE Title and Port.

Tap Test Connection to confirm that the connection is successful.

Please contact Anatomage with any questions regarding this process.



The image shows a "PACS Import Configuration" dialog box with three main sections: Server Setup, Client Setup, and TLS Setup. The Server Setup section includes fields for AE Title, Host Name, and Port, along with "Configure Tags..." and "Test Connection" buttons. The Client Setup section includes fields for AE Title and Port, a "Browse" button for the Local Storage Directory (currently showing "C:\PacsDL"), and a checked checkbox for "Delete Files After Open". The TLS Setup section has an "Enable" checkbox, fields for Peer Certificate, Client Certificate, and Client Private Key (each with a "Browse" button), and a "Cipher List" dropdown menu set to "DES-CBC3-SHA". "OK" and "Cancel" buttons are at the bottom.

Section	Field/Option	Value/Action
Server Setup	AE Title	[Empty]
	Host Name	[Empty]
	Port	[Empty]
	Buttons	Configure Tags..., Test Connection
Client Setup	AE Title	[Empty]
	Port	[Empty]
	Local Storage Directory	C:\PacsDL (Browse button)
	Delete Files After Open	<input checked="" type="checkbox"/>
TLS Setup	Enable	<input type="checkbox"/>
	Peer Certificate	[Empty] (Browse button)
	Client Certificate	[Empty] (Browse button)
	Client Private Key	[Empty] (Browse button)
	Cipher List	DES-CBC3-SHA (dropdown)



WARNING: Anatomage is not responsible for verifying the accuracy of patient information from a PACS system. Anatomage also assumes no responsibility in relation to privacy requirements for viewing and sharing patient scan information.

Table Application Troubleshooting

This section discusses common software troubleshooting issues.

For all troubleshooting, be sure to follow the safety guidelines outlined in the **Safety Instructions and Warnings** section of the hardware manual.

Issue With	Problem	Action
Installation	Error Message: <i>Server is not responding</i>	Check Internet connection. If Internet is connected, try again later.
	Error Message: <i>Please run as administrator to activate software</i>	Run the application as administrator.
	Error Message: <i>Invalid Authorization code</i>	Check license code and try again.
File Operations	Error Message: <i>Error: Cannot read this file</i>	Check if this file is supported by Table5.0.
	Error Message: <i>Failed to read DICOM file!</i>	Check if this file is supported by Table5.0.
Image Rendering	Error Message: <i>Can't detect hardware acceleration for OpenGL support!</i>	Check if graphics card meets system requirements. Check if latest driver is installed for graphics card.
	Image is distorted	Switch to another view and switch back.
	Grayscale image shows up for all rendering presets	Check if graphics card meets system requirements. Check if latest driver is installed for graphics card.
	Warning message: <i>3D reconstruction may not work!</i>	Check if the DICOM files are exported correctly.
	Slow performance	Keep a maximum of five applications open at any given time. Switch from Quality to Performance mode. Pause loop playback for 4D scans when not viewing.
Computer	Blue screen	Restart system and see if problem persists.
		Note the error code given and learn more at support.microsoft.com
		Use Windows install disc/USB drive to reformat the computer. Contact Anatmage for new Table Application authorization code(s).