

Anatom-*e*TM
Information Systems, Ltd.

User Manual

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Introduction

Welcome to Anatom-e®

Greetings and welcome to the Anatom-e® system user manual.

Anatom-e® is the only system that makes uniform, standard definition of protocols quick and easy for daily clinical use.

The system includes:

- All of the protocols from every major standards group
- The ability to easily define custom protocols for your institution or clinical trial group
- Automatic staging based on location, tumor stage (T), lymph nodal stage (N), and cell type
- Automatic selection of lymphatics at risk, elective lymphatics and CTVs from protocols
- Guides for every clinical scenario, including postoperative cases
- An anatomical atlas including thousands of normal structures on axial CT and MRI
- The ability to generate detailed reports on involved structures and possible symptoms
- The ability to present all of this on the same screen side by side with your PACS or treatment planning system via a hardware connection (*When Overlay is included*)
- The ability to import and view actual patient scans and merge them with Anatom-e®'s templates
- And much more...

Anatom-e® helps you understand and treat cases faster, more thoroughly and more accurately on a consistent basis.

We want you to use the product to the best of your ability, so if you have any questions or need assistance, please contact your Anatom-e® Account Representative.

Chapter 1

Starting the Program

Desktop Icons

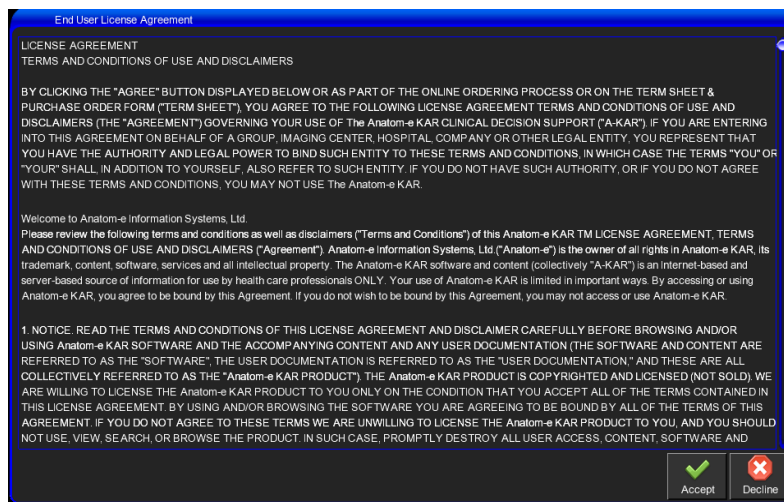


You will find 2 Anatom-e® shortcuts on the desktop of your system, labeled *Anatom-e Update* and *Anatom-e Viewer*.

- *Anatom-e Update*—Connects you with the Anatom-e® servers to download the latest data updates and changes, then opens the Anatom-e® program for you.
- *Anatom-e Viewer*—Opens the Anatom-e® program for you without updating.

End User License Agreement (EULA)

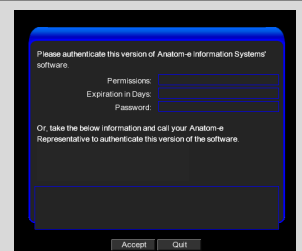
When the program launches, the End User License Agreement (EULA) is displayed. You can use the middle scroll wheel of your mouse or the scroll bar on the right side of the window to scroll through the agreement.



In order to proceed with using the software, you will need to accept the End User License Agreement.

If you choose to decline the EULA, the Anatom-e® program will close.

If you encounter this Authentication window instead of the EULA, please contact your account representative for assistance.

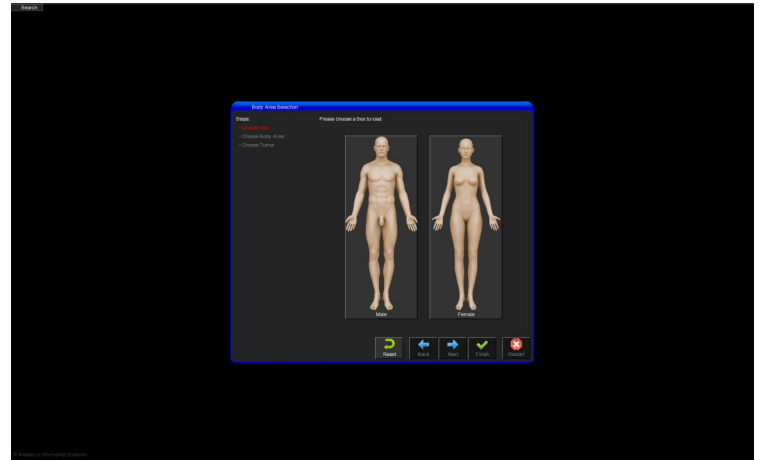


Chapter 2

Body Area Selection

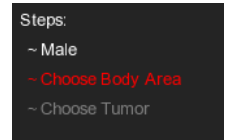
This is considered the “Home screen” of the Anatom-e® program. In the upper left corner, you can see the search tab, which we will cover in detail in Chapter 4 (pg. 13).

In the middle of the screen is the Body Area Selection Window, which allows you to select sex, body area and even specific tumor sites to view in the Anatom-e® program.



Body Area Selection Steps

There are three steps to Body Area selection: choosing a sex, choosing a body area, and (if desired) choosing a specific tumor site. A small list in the upper left corner of the window displays the choices that have already been selected.



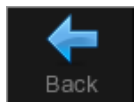
Navigation Buttons

The Body Area Selection Window has 5 buttons that are used to navigate and adjust your choices in the window.



Reset

Clears any selections that have been made on the current screen.



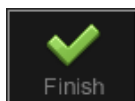
Back

Returns to the previous screen. *This button is deactivated on the first screen.*



Next

Navigates to the next screen. *This button is deactivated on most screens until after you've made a selection.*



Finish

Commits your selections and loads them in the main Anatom-e® program. *This button is deactivated until the final screen.*



Restart

Clears all selections that have been made and returns to the first screen (Choose Sex).

Choose Sex

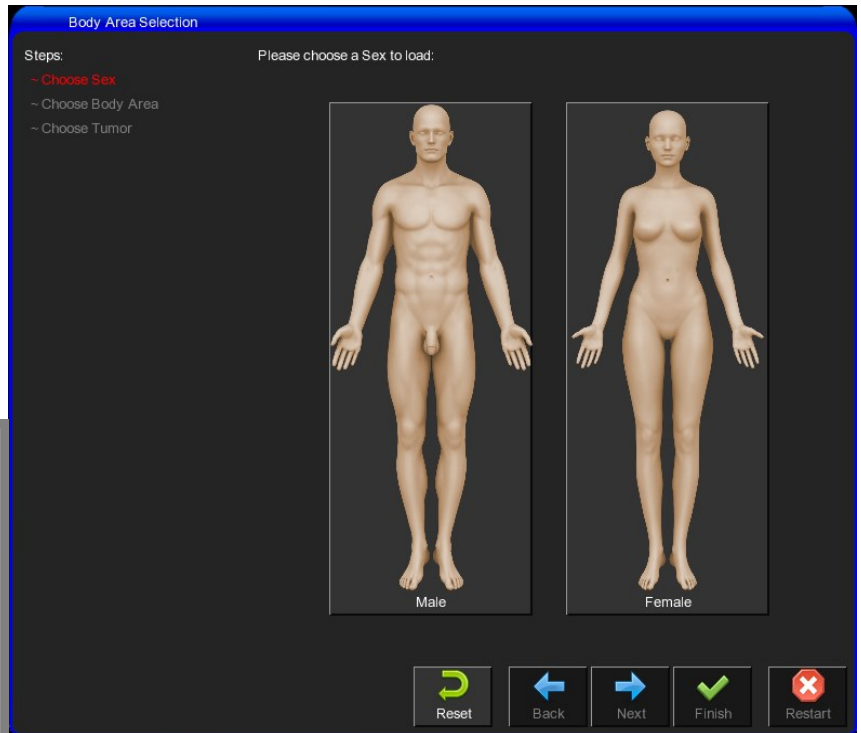
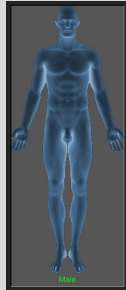
The first step in Body Area Selection is to choose a Sex.

The available choices are:

- Male
- Female

Click on your selection, and you will automatically be taken to the next screen.

If you return to this screen from a later one, your current selection will be highlighted in blue.



Choose Body Area

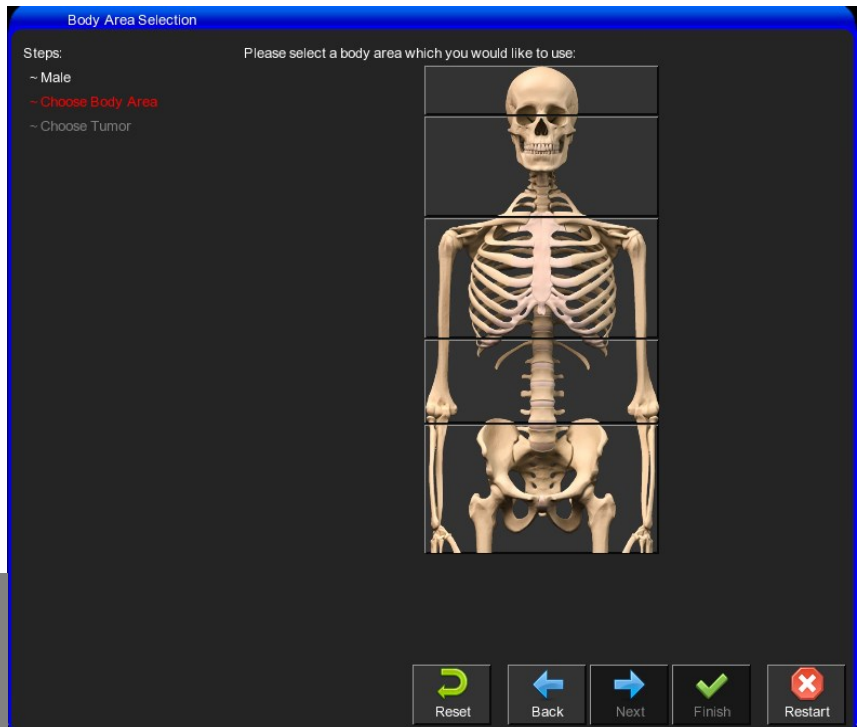
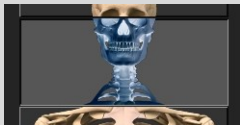
On the next screen, choose a Body Area.

The available choices (arranged from top down) are:

- Brain
- Head & Neck
- Chest
- Abdomen
- Pelvis

Again, simply click on your selection and you will be taken to the next screen.

If you return to this screen from a later one, your current selection will be highlighted in blue.



It is important to note that even though the limbs are depicted in this image, they are not included as part of Anatom-e® currently.

At this point, you have made all the selections required to access a Body Area in Anatom-e®. If you do not wish to select a specific tumor site, you may simply click the Finish button on the “Choose Tumor” screen.

Choose Tumor (Optional)

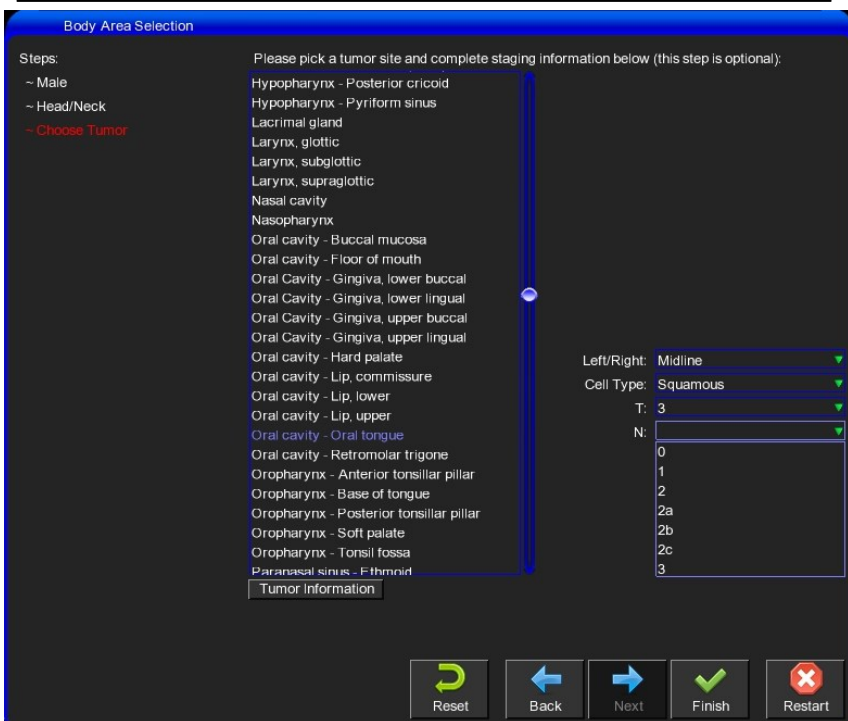
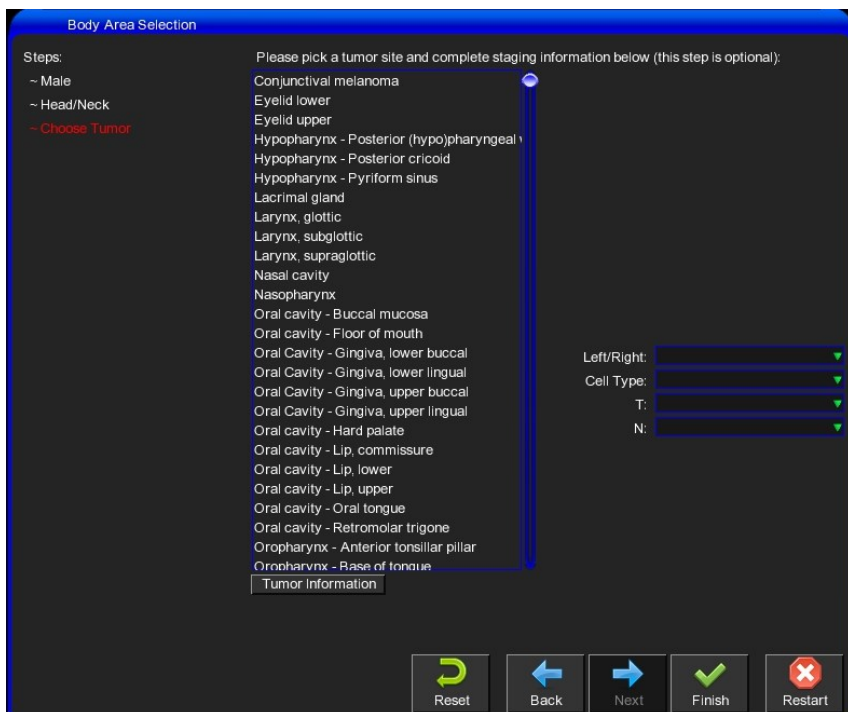
Begin by selecting a specific tumor site from the list provided. The list includes tumor sites that would be present in the selected body area and the selected sex. You can scroll through the list with the scroll bar on the right, or by hovering over the list and using the middle mouse scroll wheel. Clicking on your selection will highlight it blue.

There are several additional pieces of staging information that need to be selected from the drop down boxes on the right side of the screen.

Select the following:

(Certain entries may only have one option for some tumor sites.)

- **Left/Right:** Select the tumor location. Options are: Left, Right and Midline; depending on the specific tumor site.
- **Cell Type:** Select the cell type of the tumor. Options vary by tumor site.
- **T:** Select the T-Stage of the tumor. Options vary by tumor site.
- **N:** Select the N-Stage of the involved lymph nodes. Options vary by tumor site.



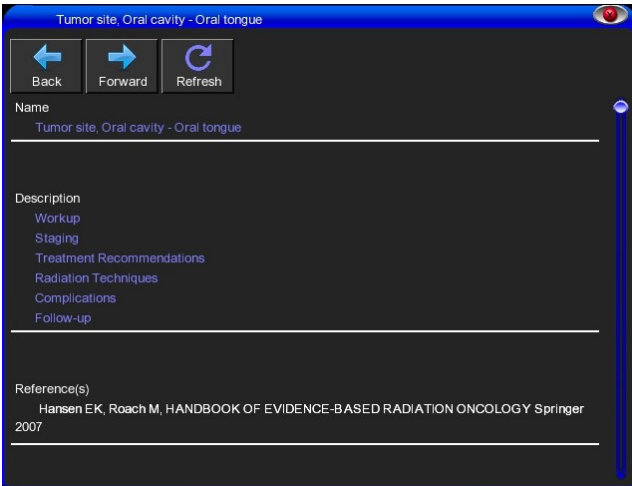
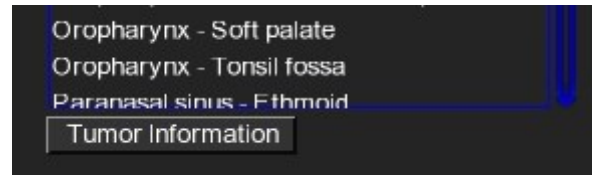
After you have selected all the information about your chosen tumor site, click the “Finish” button at the bottom of the screen to load the main Anatom-e® screen with a predelineated template data set for that tumor site.

Please see Chapter 16 (pg. 57) for more information on Tumor Sites.

If you click the Finish button before you have provided all the additional information, Anatom-e® will load your chosen Body Area as if you had left the “Choose Tumor” screen blank.

Tumor Information Button (*Optional*)

If you would like more information about a specific tumor, click the “Tumor Information” button at the bottom of the list after selecting the tumor site.

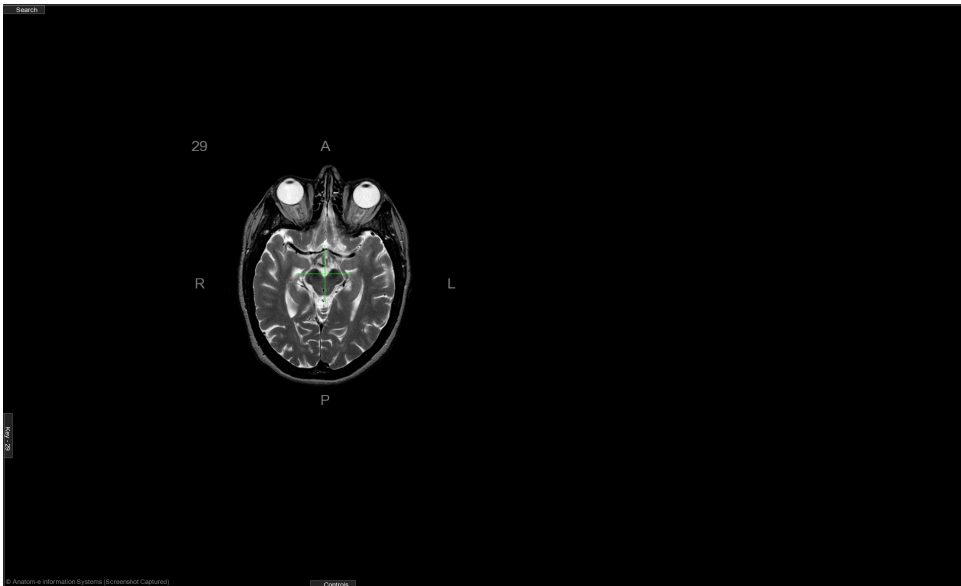


This will open a text box window with information about the specific tumor site including symptoms, staging, treatment recommendations, complications, workup, follow-up.

Please see Chapter 10 (pg. 37) for more information on text boxes.

Chapter 3

Main Screen Overview



After selecting a body area (with or without a tumor site), the Anatom-e® system loads our 2D normal patient images into the main screen.

This chapter covers adjusting the tabs, tab panels and windows to best fit your purposes in using the Anatom-e® system.

Later chapters cover the specific contents of the tab panels, how

to use the 2D and 3D Views, and the various features and tools that Anatom-e® offers.

Tabs, Tab Panels and Windows

Tab

A tab is a small rectangle which marks the position of tab panels when they are not open. For example, the tab of the Key Tab Panel can be seen here.

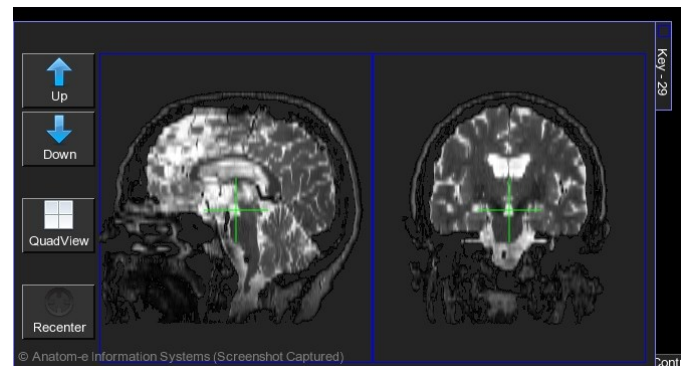
It also provides the name of the tab panel and other label data at certain times, and gives you the ability to open, pin and move the tab panels as needed.

There are 4 tab panels at the edges of the Main Anatom-e® screen: the Search Tab (*Top*), the Info Tab (*Right*), the Controls Tab (*Bottom*), and the Key Tab (*Left*).

Tab Panel

A tab panel contains buttons, sliders and other options which control, access and assist with Anatom-e® features, functions and tools.

The four tab panels provide access to Anatom-e®'s search functions, information hierarchy, image settings, location key and additional tools and functions.





See the following chapters for information on specific tab panels and their contents:

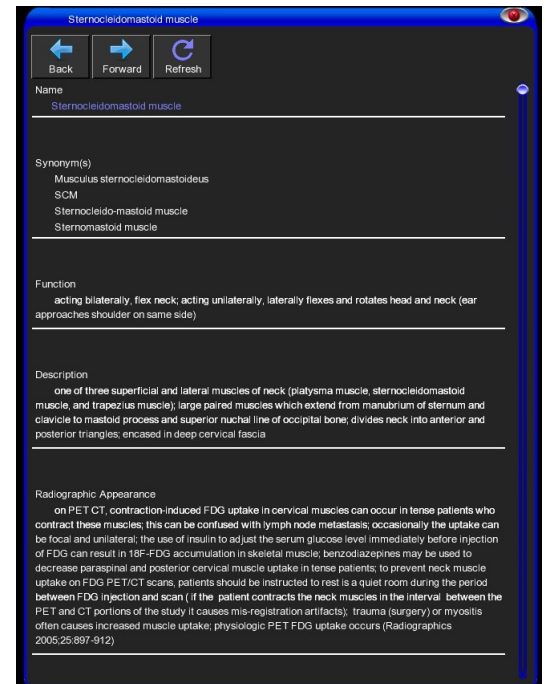
Search—Chapter 4 (pg. 13), Info—Chapter 5 (pg. 17), Controls—Chapter 6 (pg. 21), Key—Chapter 7 (pg. 27)

Window

In Anatom-e®, windows are movable adjustable panels with blue borders that can be arranged anywhere on the Anatom-e® main screen, as opposed to Tab Panels, which are tethered to the edges.

To move a window, hover over the blue bar at the top. When the cursor turns into , you can left click and drag the window to whatever position you want.

You are also able to adjust the size of some windows. Hover over the left, right or bottom edges of the window. When the cursor changes to , left click and drag to adjust the size of the window as you like. You can also adjust the size in the same way by hovering over either of the bottom corners.

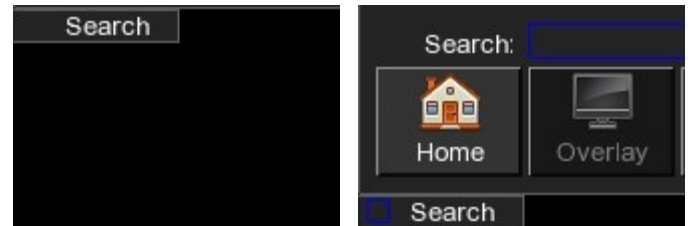


Some windows have a small red bubble with an X in the upper right corners. Clicking this closes the window. Closing a window can have different effects based on the contents of the specific window. These effects will be covered when discussing each tool or window in later chapters.

Opening Tab Panels

You can open each tab panel simply by hovering over the tab using your mouse cursor.

The tab panel will close when you move your mouse cursor away.

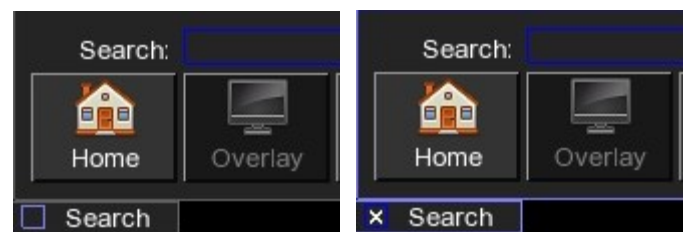


Pinning Tab Panels Open

If you wish to keep a tab panel open when you are not hovering over it, it is possible to pin the tab panel open on the screen.

To do this, hover over the tab and click the small box on the left side of the tab. An X will appear in the box, and the tab panel will be pinned open.

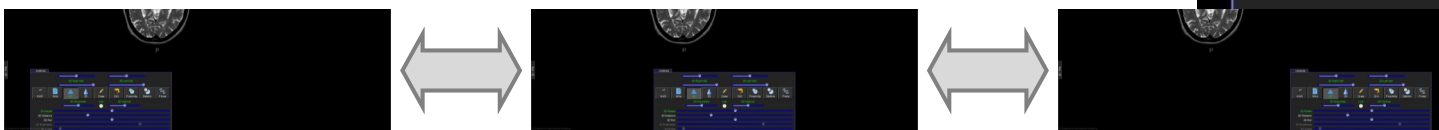
To close a pinned tab panel, click the box again. The X will disappear, and the tab panel will close as normal when you move your mouse cursor away.



Dragging Tab Panels Along an Edge

Key and Controls Tab Panels Only

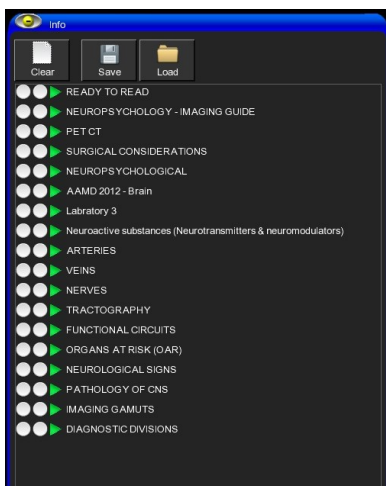
To drag a tab panel along an edge, left click on the tab and drag in either direction along the edge it is attached to. This works for both pinned and unpinned tab panels.



Tab panels cannot be dragged off of the edges they are attached to. So the Controls tab panel can only be dragged left and right along the bottom edge of the screen, and the Key tab panel can only be dragged up and down along the left edge of the screen.

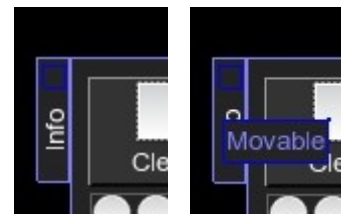
Turning Tab Panels into Windows

Info, Key, and Controls Tab Panels Only



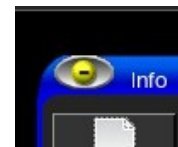
It is possible to change the Info, Key and Controls tab panels into windows.

Start by hovering over the tab and right clicking with your mouse. A small panel will pop up with the "Movable" option. Left click on this option.



The tab panel will change into a movable window.

To revert back to the attached tab panel state, click the yellow bubble in the upper left corner of the window. The window will revert back to the tabbed panel setup with the panel pinned open.



Chapter 4

Search Tab Panel

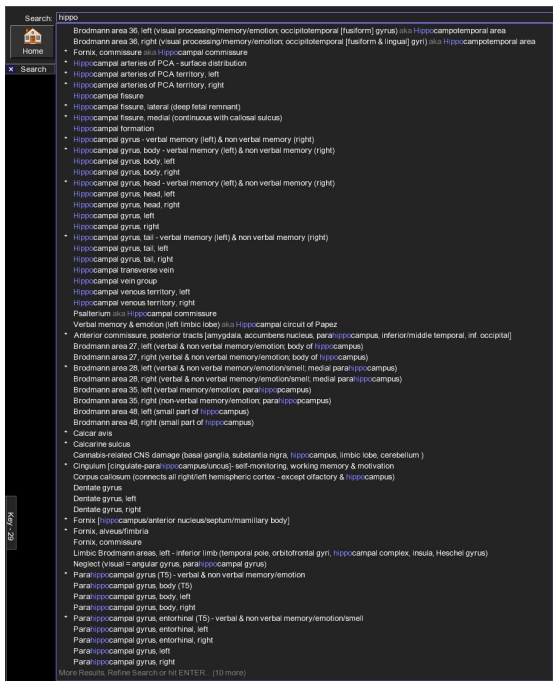


The Search Tab Panel is located at the top of the screen. It is available during Body Selection, as well as in the main screen.

Search Bar, Search Button and Reset Button

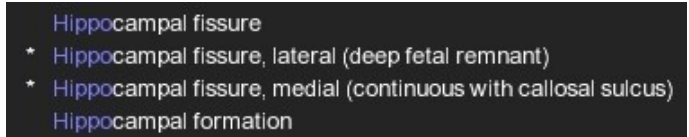


Search allows you to locate any of the thousands of elements in the Anatom-e® database. Quickly locate an object, condition or disease of interest by typing it into the search bar.



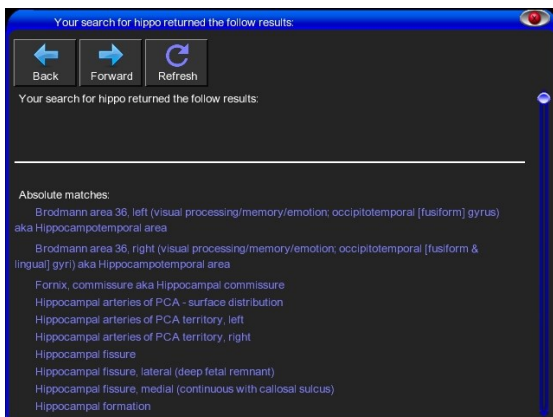
As you type, Anatom-e® will suggest possible matches to your search, including synonyms. The system highlights the text matching your search query in blue.

The * indicates that an item has a 2D object or a 3D model associated with it in the current body area.



The first several matches are displayed in a dropdown list under the search bar. As you refine your search, this list will grow

The gray text at the bottom of the dropdown indicates how many more results are available in addition to those shown in the list.



Hitting Enter or clicking the Search button to the right of the search bar will bring up a window with a complete list of search results including both Absolute and Close matches.

You can open a text box for any of the matches by clicking the item on the list.

Please see Chapter 10 (pg. 37) for more information on text boxes.

Clicking the Reset button will clear any text currently in the search bar.



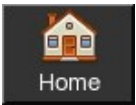
On Top Button



This button is located in the upper right hand corner of the Search Tab Panel. When activated (indicated by the green text and the depressed appearance of the button), this button keeps the Anatom-e® program on top of all other programs on the computer screen. Any other programs on the computer will not be able to appear in front of the Anatom-e® program.

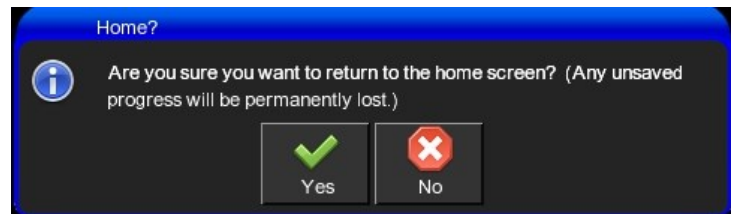


Home Button



This button allows you to return to the Home Screen and the Body Area Selection Window as described in Chapter 2 (pg. 5).

When you click the Home button, a window will pop up and ask if you are sure that you want to return to the home screen. You are warned that any unsaved progress and data will be lost. If you have saved any data or progress you will need in the future, then click “Yes” and you will be returned to the Home Screen. If you still need to save data or progress, or if you do not want to return to the Home Screen, click “No.”



The Save function is explained in Chapter 5 (pg. 18) as part of the Info Tab Panel.



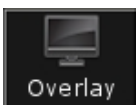
If you right click on the Home Button, you will bring up a small menu with the option to adjust the Window Settings.

Clicking on that option will bring up a window allowing you to adjust the Window Settings. If you change the values in the Width and Height boxes will change the dimensions of the Anatom-e® program. Clicking “Apply” will apply the new settings but leave the window open. Clicking “Save” will apply the settings and close the window.



By default, the program fills your computer monitor, so these dimensions are set to the same values as your screen resolution, minus a small amount of space for the task bar.

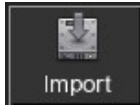
Overlay Button



This button allows you to activate the Overlay feature of Anatom-e® if it is included in your system. Overlay combines the power of Anatom-e® with your treatment planning or PACS systems while you work, by letting you view the output from both the Anatom-e® system and another computer at the same time on one computer monitor.

The Overlay feature is covered in depth in Chapter 11 (pg. 41).

Import Button



The Import feature imports patient scan series directly into the Anatom-e® program. This allows you to combine our data set with your patient’s actual scans and harness the Anatom-e® volume rendering tools to better understand specific cases.

The Import feature is covered in depth in Chapter 17 (pg. 59).

Volumes Button



Anatom-e® can reassemble DICOM images into 3D volumes, allowing you to view the patient’s data from new angles and with additional information from our system helping you to expand your understanding of the images’ content.

The Volumes feature is covered in depth in Chapter 17 (pg. 59).

Screenshot Button

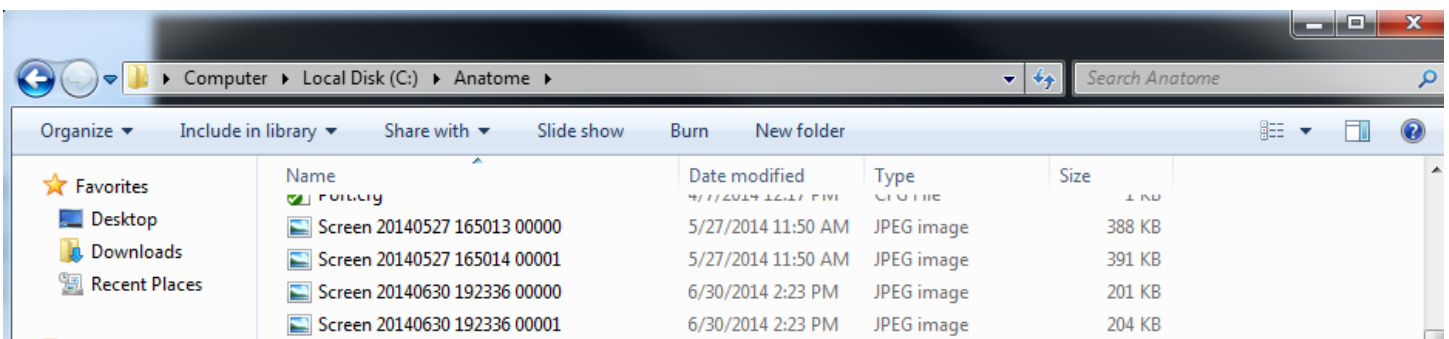


Screenshots can be a valuable resource to help you document and export data from your use of the Anatom-e® program.

To take a screenshot, either click the Screenshot Button on the Search Tab Panel at the top of the screen or use the “Print Screen” key on your keyboard. Anatom-e® displays “(Screenshot Captured)” in the lower left corner to let you know that your data has been recorded.

© Anatom-e Information Systems (Screenshot Captured)

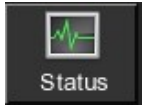
Captured screenshots can be found in the Anatom-e folder on the C: drive of your computer. Images are saved in JPEG image format and are named “Screen” followed by a series of numbers indicating the date, time (GMT—*Greenwich Mean Time*), and order number in which the shot was taken.



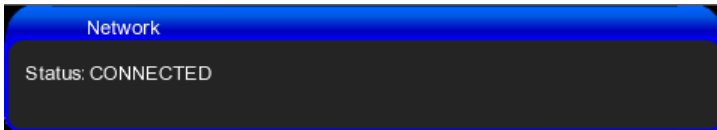
Example - Screen 20140630 192336 00000.jpg

This screenshot was taken on June 30, 2014 at 19:23:36 GMT (2:23 PM CDST—*Central Daylight Saving Time*) and it was the first shot in the series (00000 order number).

Status Button

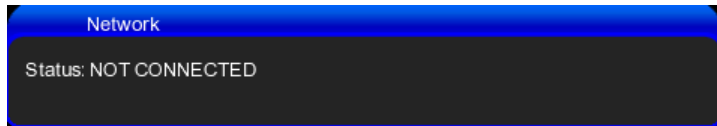


This displays the status of your connection to the Anatom-e® database servers. An active internet connection is required to access the live text box data in our system.



Status: Connected

Indicates that your system has an active network connection to our servers.



Status: Not Connected

Indicates that your system is unable to connect to our servers to retrieve text box data. You can still use other features of the Anatom-e® program but will not be able to read the text associated with individual elements.

If you encounter issues with your Anatom-e® system's network connection status, please contact your account representative for help.

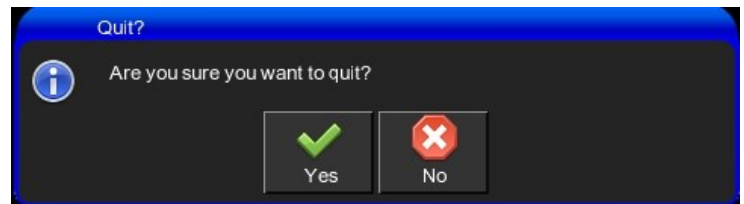
Quit Button



When you are finished with the Anatom-e® program, click this button to close it. You will be presented with a dialogue window asking if you are sure you wish to quit.

Any unsaved progress and data will be lost.

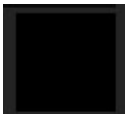
If you are sure you want to close the program and have saved any data or progress you will need in the future, then click "Yes."



If you don't wish to close the program or if you still need to save data or progress, click "No."

The Save function is explained in Chapter 5 (pg. 18) as part of the Info Tab Panel.

Background Color Box



There is a box in far right corner of the Search Tab Panel that indicates the current background color. By default it is set to Black (RGB value: 0 0 0).

Clicking on the box will bring up the Color Wheel Selection Window and allow you to change the background color.

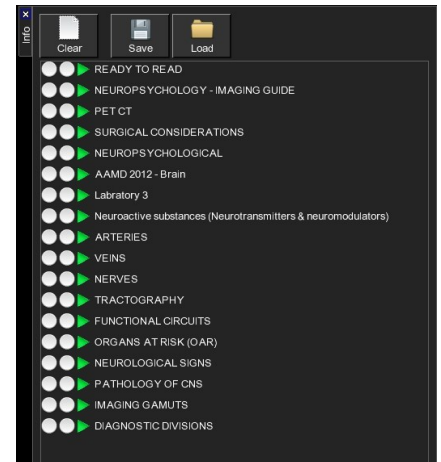
The Color Wheel Selection Window is explained in Chapter 10 (pg. 39).



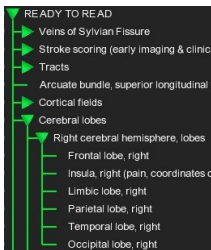
Chapter 5

Info Tab Panel

This is the Info Tab Panel. It displays a great deal of Anatom-e's® elements in an expandable hierarchy. These elements can be turned on and off using the check bubbles. Information selections can even be saved and loaded again for use later.



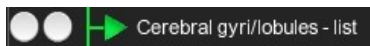
Information Hierarchy



Elements with additional elements (“children”) below them are marked with . Clicking on the green arrow will expand the hierarchy to show those child elements.

Elements without the green arrow have no children and the hierarchy cannot expand further below them.

As the hierarchy expands, vertical and horizontal scroll bars will appear on the right and bottom of the panel as needed.

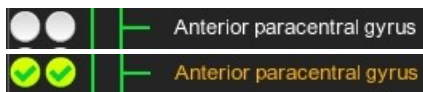


Elements can be activated using the two check bubbles on the left side of the hierarchy. When parent elements are activated this way, their children will be activated as well. When a parent element is deactivated, the children will also be deactivated.

The two bubbles correspond to portions of the structures on the right and left sides of the patient’s body. The left bubble corresponds to the patient’s right side and the right bubble corresponds to the patient’s left side.

Left click on a bubble to turn on the corresponding side of an element. Left click on the bubble again to it back off.

Activated elements are indicated by checkmarks in the appropriate bubbles .

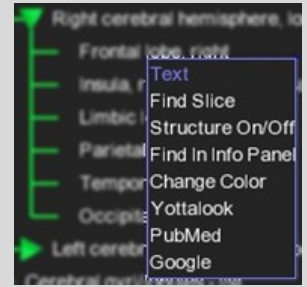


When activated, certain elements in the Information Hierarchy will be colored. This color corresponds to the color of any structures or models associated with that element.

When you mouse over elements in the Hierarchy, they will highlight the associated structures in the 2D and 3D Views. Non-activated structures will highlight with a red outline in both views, while activated structures will appear outlined in red with a blue fill.

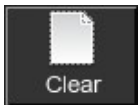
If the elements have 3D models associated with them, they will highlight in red when not activated, and in blue when activated.

Right clicking on any element in the hierarchy will bring up this menu. There are several options available on it, including the option to turn structures on or off. Structures activated and deactivated this way will act in the same way as those activated by the check bubbles in the hierarchy, with two exceptions. First, activating and deactivating elements this way does not affect the state of any child elements. Secondly, activating or deactivating an element this way will affect both sides of the element. (Both on or both off).



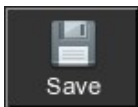
For more information about the options on this menu, please see Chapter 10 (pg. 38).

Clear Button



This button will turn off all enabled items in the hierarchy, no matter what way they were activated.

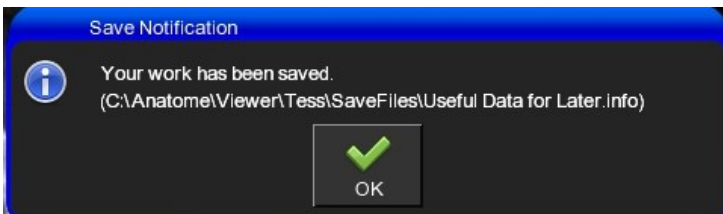
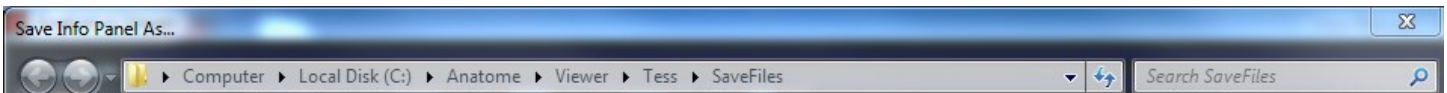
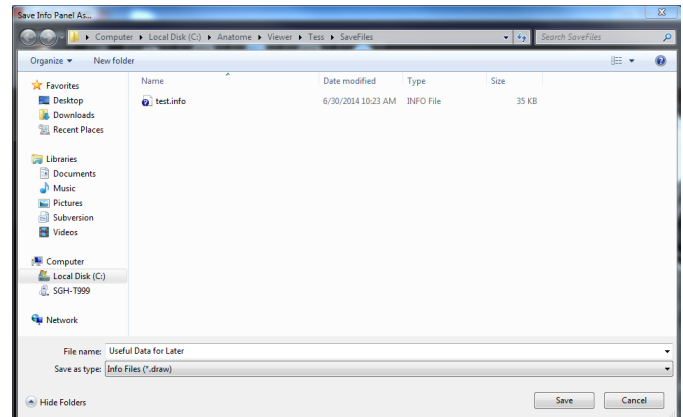
Save Button



You may find it useful to save certain configurations of elements in the Anatom-e® program for use later. You can save the activated structures in the Info Tab Panel by clicking this button.

Clicking the button will bring up a save window for your computer.

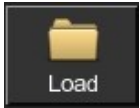
Enter a file name that will help you identify the file at a later time and click “Save.” Clicking “Cancel” will cancel this action and the information will not be saved.



Anatom-e® will display a Save Notification window after this, indicating that your data has successfully saved. The window will also provide you with the file location.

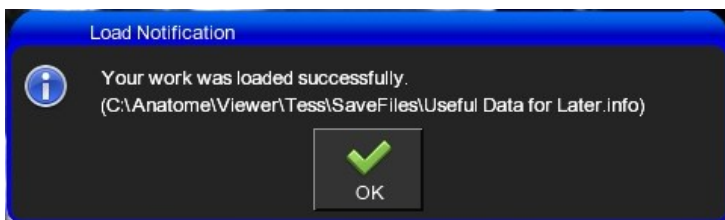
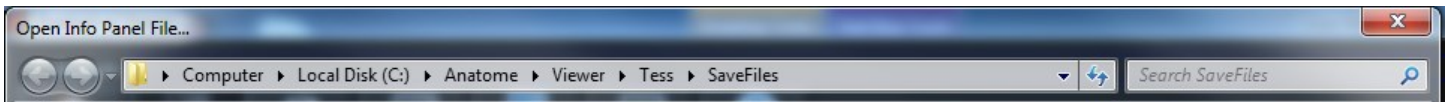
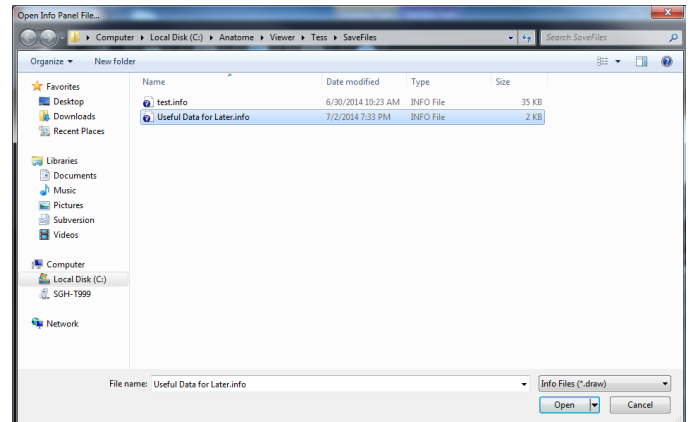
Files saved from the Info Tab Panel will have a *.info* file extension.

Load Button



Clicking the Load button will allow you to access configurations that you have previously saved.

Select the file that you are interested in from the list in the open window that pops up. Clicking “Open” will load the file into Anatom-e®. Clicking “Cancel” will cancel this action, no file will be loaded and the window will close.



Anatom-e® will display a Load Notification window, indicating that your data loaded successfully and will again provide you with the file location.

When you load a specific tumor site from Body Area Selection, the tab of the Info Tab Panel will display identifying information for that tumor site, including patient sex, the name of the tumor site, the cell type chosen, and the specific T and N stages.

Example

The tab shown here is for a Female patient with an Oral Cavity—Oral Tongue tumor of Squamous cell type, and it has been staged as T3 and N2a.

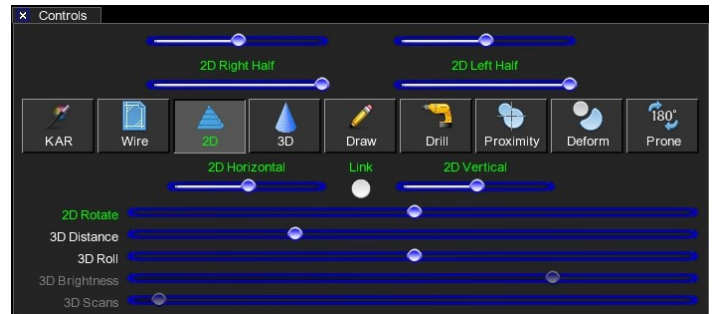
Info - Female Oral cavity - Oral tongue Squamous T3 N2a

Chapter 16 (pg. 57) covers Tumor Sites in depth.

Chapter 6

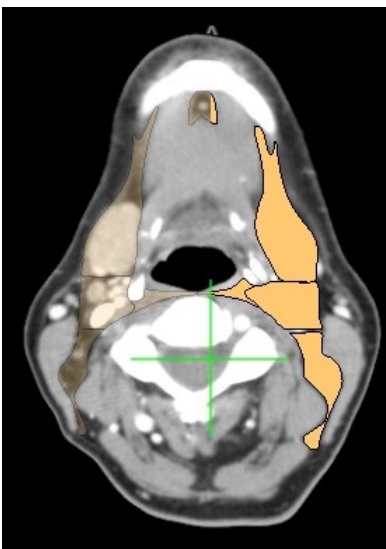
Controls Tab Panel

This panel controls several settings relating to the 2D and 3D Views in the Anatom-e® program. It also activates several additional features.



2D Image Sliders

These sliders located at the top of the Control Tab Panel control the Brightness and Opacity of the structures and the images on each side of the 2D View.



The top sliders pertain the Brightness and Opacity of the Anatom-e® structures and models on the right and left halves of the 2D View.

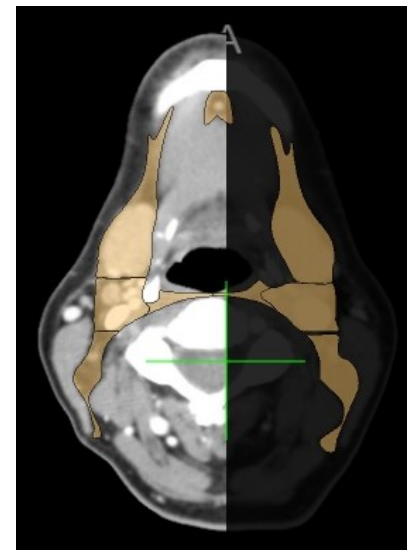
Sliding either control knob to the left will fade away the structures on the corresponding side. Sliding the knob to the right will increase the values until the structures are opaque.

By default, these sliders are set to the halfway point of each line, displaying the structures and models at 50% opacity in 2D the View.

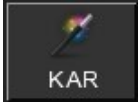
The bottom sliders control the Brightness and Opacity of the image scans on the right and left halves of the 2D View.

Sliding either control knob to the left will fade away the image scans on the corresponding side. Sliding the knob to the right will increase the values until the images are completely solid.

By default these sliders are set to the maximum of each line, displaying the image scans at 100% of opacity in the 2D View.



KAR Button



This button activates the Knowledge Assisted Reporting (KAR) feature of Anatom-e® that helps users generate in depth structured reports on specific regions of interest.

Please see Chapter 12 (pg. 45) for an in depth explanation of the KAR feature.

Wire Button



This button activates and deactivates the wireframe that outlines the anatomic structures on Anatom-e®'s normal patient scans in blue. These outlined structures are useful for matching and aligning Anatom-e®'s templates with a specific patient's scans via the Overlay or Import features.

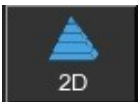
By default, the wireframe is deactivated.

Overlay is explained in Chapter 11 (pg. 41).

Import is explained in Chapter 17 (pg. 59).



2D Button



This button toggles the axial 2D View off and on. By default, the 2D View is activated when you open the Anatom-e® program.

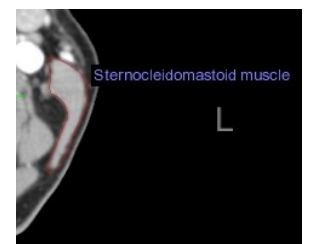
For more information on the 2D View, see Chapter 8 (pg. 33)

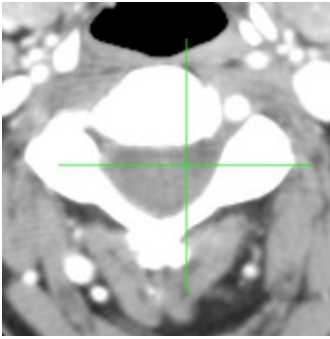


Right clicking on the 2D button will bring up the menu that you see here.

Several of the options given here help you to customize the 2D View of Anatom-e® for your use and purpose by turning on or off (“toggling”) various features and displays.

Name Toggle—By default when you hover over the 2D View with your mouse cursor, it will display the name of the structure you are hovering over. The Name Toggle option turns that setting off and on. When off, the structure names will not be displayed.





Crosshair Toggle— The crosshair helps localize a point across multiple views. The two lines mark the X axis and Y axis in the 2D View.

The crosshair is turned on by default. This option will turn it off and on again as desired.

Change Crosshair Color—This option will open the Color Wheel Selection Window allowing you to change the color of the crosshair.

The default crosshair color is Green (RGB value: 0 255 0).

The Color Wheel Selection Window is explained in Chapter 10 (pg. 39).

For more information about the crosshair in 2D View, refer to Chapter 8 (pg. 33).



Coordinates Toggle—This option will enable and disable the coordinates display, if desired.

When enabled, the coordinates of the current mouse cursor position (along the X-axis, Y-axis, and Z-axis respectively) are displayed in the Controls tab at the bottom of the screen.

By default, the coordinates display is disabled.



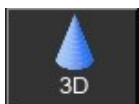
Reset View—This option will reset possible display changes to default values, such as the changes made by options from the 2D Button's right click menu. This includes:

- Brightness and Opacity of structures and scans in the 2D View
- Wireframe display
- Name display
- Crosshair display
- Coordinates display

It will not reset color changes or the position of the crosshair.

Note: This is not a comprehensive list of changes that will be reset. It only covers the changes made by controls previously discussed in this chapter. More controls will be discussed in rest of this chapter, in Chapter 8 (pg. 33), and in Chapter 9 (pg. 35).

3D Button

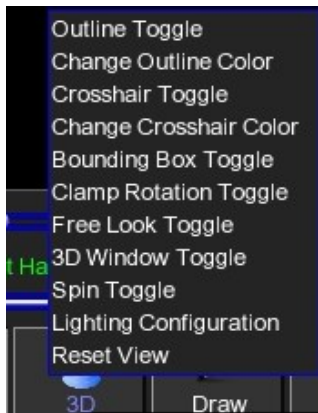


This button activates and deactivates the display of the 3D View.

By default, the 3D View is not activated when the main Anatom-e® screen is loaded.

For more information on the 3D View, see Chapter 9 (pg. 35)

This is the right click menu available for the 3D button. Several of the options given here help you to customize the 3D View of Anatom-e® for your use and purpose by turning on or off (“toggling”) various features and displays.



Outline Toggle—The outline indicates the relationship between the 3D and 2D Views. The line marks the position of the slice currently displayed in the 2D View.

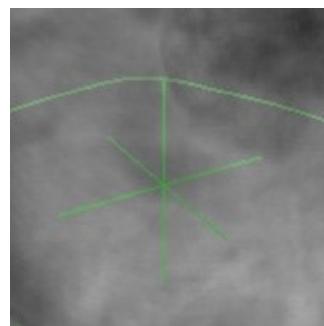
By default, the outline is turned on, however you can turn it off and on as desired using this option.



Change Outline Color—This will open the Color Wheel Selection Window allowing you to change the color of the outline.

The default color is Green (RGB value: 0 255 0).

The Color Wheel Selection Window is explained in Chapter 10 (pg. 39).



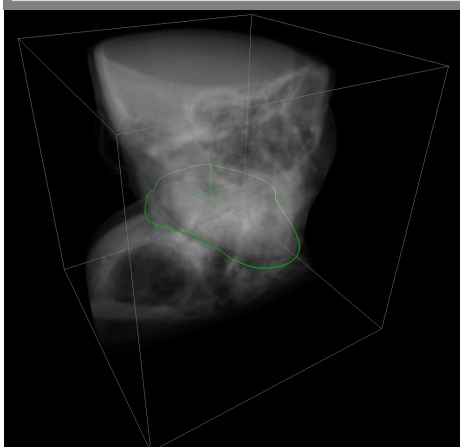
Crosshair Toggle— The crosshair helps localize a point across multiple views. The three lines mark the X-axis, Y-axis, and Z-axis in the 3D View. However, this is still the same crosshair that is displayed in all views and changes made will affect the display all views.

The crosshair is turned on by default. This option will turn it off and on again as desired.

Change Crosshair Color—This option will open the Color Wheel Selection Window allowing you to change the color of the crosshair.

The default crosshair color is Green (RGB value: 0 255 0).

For more information about the crosshair in 3D View, refer to Chapter 9 (pg. 35).



Bounding Box Toggle—This option turns on and off a cube marking the edges of the default scan series with gray lines.

By default, this box is turned off.

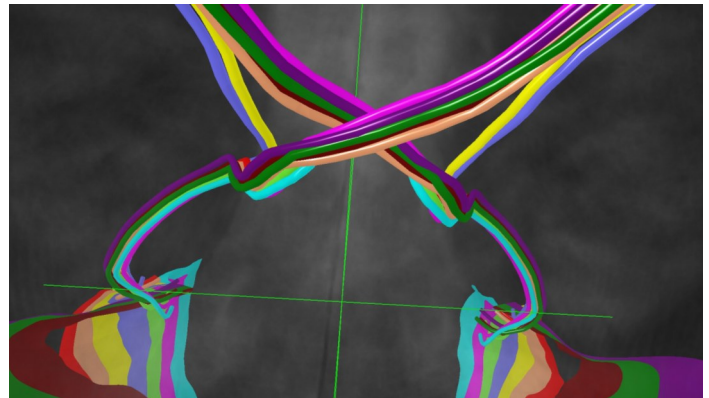
Clamp Rotation Toggle—Normally, there are limitations to how far you can rotate the 3D View using your mouse. This option will “unclamp” the rotation option allowing you to turn the 3D View 360° in any direction. You can also use it to turn the “clamp” back on when you are done.

Free Look Toggle—Free Look mode allows you to virtually “fly” through the 3D view in Anatom-e® allowing you a unique perspective that can get closer to objects than the normal 3D display settings. It even allows you to closely view objects that are in the center of the 3D View surrounded by other objects.

Navigate through the 3D View with your keyboard.

- W—Moves the 3D View closer
- A—Moves the 3D View to the right
- S—Moves the 3D View farther away
- D—Moves the 3D View to the left
- Q—Moves the 3D View upwards
- E—Moves the 3D View downwards

When you toggle Free Look mode off, the 3D View will return to the position it was in before you activated Free Look mode.

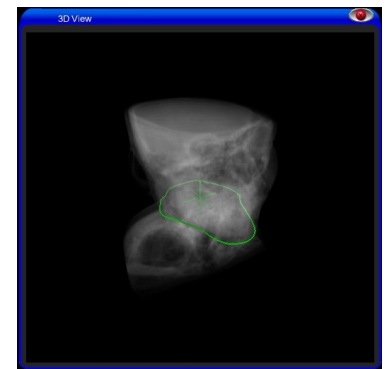


View of the optic fibers in Free Look Mode

3D Window Toggle—Displays the 3D View in a window.

To revert back to the default 3D View, click the red bubble in the upper right hand corner or select the 3D Window Toggle option again. Clicking the 3D button again will close the 3D View window. When the 3D View is turned back on, it will be in the Main Screen instead of the window.

Spin Toggle—When you activate this option, the 3D View will slowly spin on its Z-Axis, providing a continuous 360° rotation.



Lighting Configuration—Allows you to configure the lighting of 3D models and volume rendered imaging. Changes will be applied immediately. To close the window, click the red bubble in the upper right hand corner.

The volume rendering feature is not generally used for Radiation Oncology. For more information about this feature or for a demonstration, please contact your account representative.

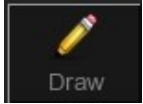
Reset View—This option will reset possible display changes to default values, such as the changes made by options from the 3D Button’s right click menu. This includes:

- 3D View display
- Outline display
- Crosshair display
- Bounding Box display
- Free Look mode
- 3D View window
- Spin mode

It will not reset color changes, lighting changes, the position of the crosshair, or the position of the outline.

Note: This is not a comprehensive list of changes that will be reset. It only covers the changes made by some of the controls previously discussed in this chapter. More controls will be discussed in rest of this chapter, in Chapter 8 (pg. 33), and in Chapter 9 (pg. 35).

Draw Button



The Draw feature allows you to annotate specific slices in Anatom-e® and to save and load this information.

For more information on the Draw feature, see Chapter 15 (pg. 55)

Drill Button



The Drill feature generates a KAR report based on a straight tubular path projected (“drilled”) through a series of images.

For more information on the Drill feature, see Chapter 12 (pg. 47)

Proximity Button



The Proximity feature outputs information about the distance of activated structure elements from a designated point.

For more information on the Proximity feature, see Chapter 13 (pg. 51)

Deform Button



The Deform feature simulates anatomical changes due to tumor mass effect and infiltration. *(This feature is for research and experimental use only.)*

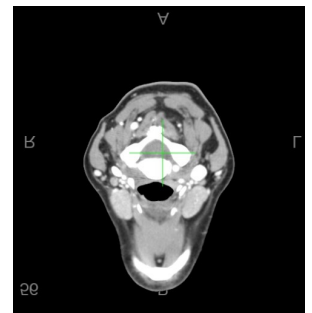
For more information on the Deform feature, see Chapter 16 (pg. 53)

Prone Button



This button flips the 2D View over the horizontal axis in order to simulate a patient in the prone position.

The 2D view will revert to its original orientation if you use the “Reset View” option from the right click menus of either the 2D or 3D button.



For more information about 2D View, see Chapter 8 (pg. 33)

2D Horizontal, Vertical and Rotate Sliders

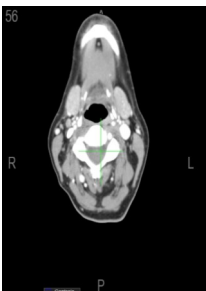
These sliders allow you to deform and rotate the 2D Anatom-e®

templates to better align with patient images while using the Overlay feature.

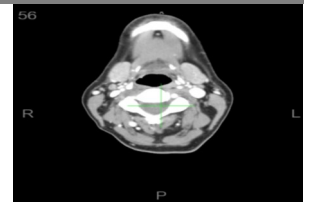


Overlay is covered in depth in Chapter 11 (pg. 41).

2D Horizontal—This slider stretches the 2D view along the horizontal axis, parallel to the top and bottom edges of the screen.



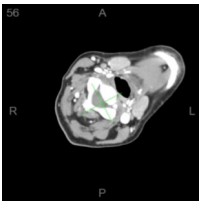
The default value of this slider has the control knob positioned halfway along the line.



2D Vertical—This slider stretches the 2D view along the vertical axis, parallel to the left and right edges of the screen.

The default value of this slider has the control knob positioned halfway along the line.

Link—When this check bubble is enabled, it links the 2D Horizontal and 2D Vertical sliders together, allowing the image to be adjusted proportionally using the sliders.



2D Rotate—This slider rotates the 2D View around the center of the image.

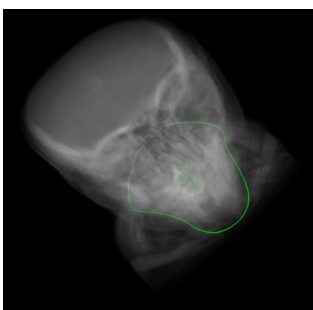
The default value of this slider has the control knob positioned halfway along the line, with the 2D image not having been rotated at all.

You are also able to rotate the 2D View by holding down the Ctrl key and scrolling with your middle mouse scroll wheel.

If you use the “Reset View” option from the right click menus of either the 2D or 3D button, the 2D view will revert to its original appearance, size and orientation.

3D Distance and Roll Sliders

These sliders adjust the appearance of the 3D View.



3D Distance—Moves the 3D View closer or farther away from the user’s viewpoint.

3D Roll—Rotates the 3D View along its Y-axis.

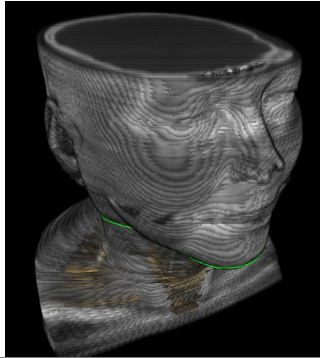
“Reset View” will restore these sliders to their default values.

3D Brightness and Scans Sliders

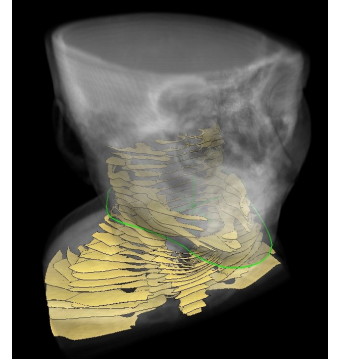


These sliders adjust the appearance of scans and Anatom-e® structures in the 3D View. While the 3D View is deactivated, they are also deactivated. Using “Reset View” will restore these sliders to their default values.

3D Brightness—Adjusts the color Brightness of structures in the 3D View



3D Scans—Adjusts the opacity of the image scans that make up the 3D View.



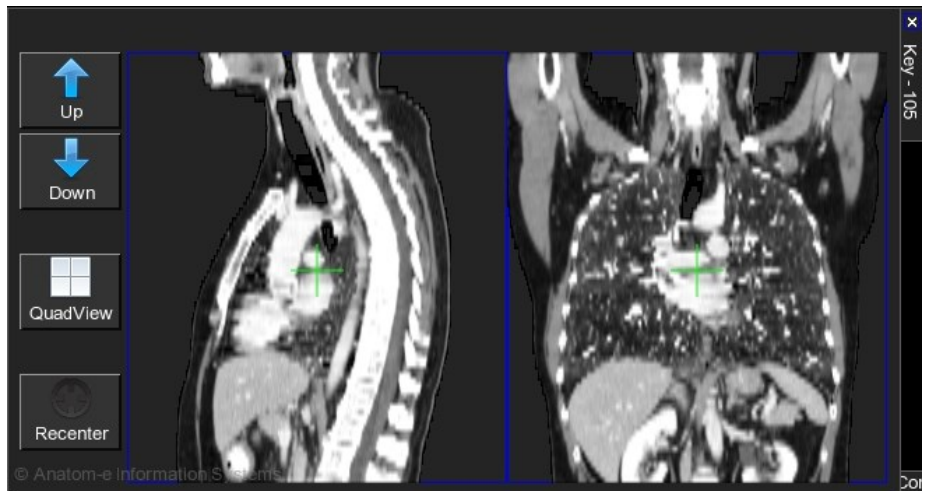
For more information about the 3D View, please see Chapter 9 (pg. 35)

Chapter 7

Key Tab Panel

The Key Tab Panel helps you localize your position and navigate in the coronal and sagittal planes. The 2D View displays images in the axial plane.

These three views together help to localize and navigate in all three dimensions and 3D View.



Coronal—Coronal images are arranged from front to back, displaying the scans along the X-axis and the Z-axis.

Sagittal—Sagittal images are arranged from side to side, displaying the scans along the Y-axis and the Z-axis.

Axial—Axial images are arranged from top to bottom, displaying the scans along the X-axis and the Y-axis.

Slice Number

x Key - 105 The number on the tab indicates the current slice that is displayed as the axial 2D View. The number of slices in a scan varies by the body area and the specific scan.

Up and Down Arrow Buttons



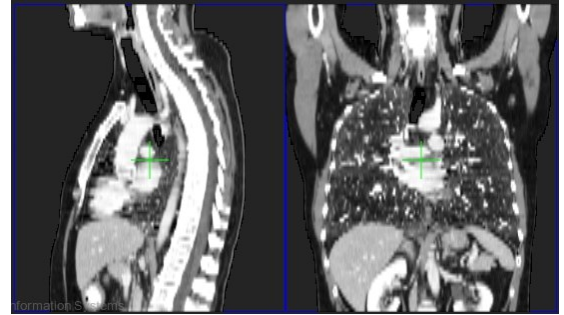
These buttons are used to navigate through the axial slices of the 2D View.

You can also use the Up and Down arrow keys or the Page Up and Page Down keys on your keyboard to navigate through the slices.

Sagittal and Coronal Views

The crosshair position in these views directly correlates to the position of the crosshair in the axial 2D View and in 3D View. Clicking anywhere in any of these views will reposition the crosshair to that point in all three views.

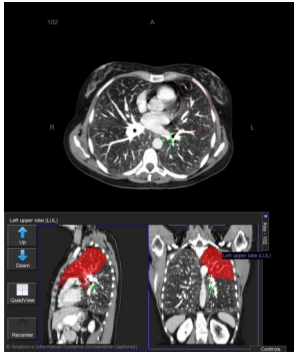
Hovering over either view will allow you to scroll through the sliced images in that view.



Sagittal

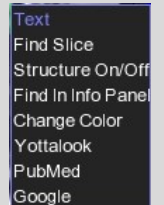
Coronal

Hovering over a specific anatomical structure in either view will highlight that structure in all three views as well.



Right clicking on a structure in sagittal or coronal view will bring up this menu giving you several options for the structure.

For more information about the options on this menu, please see Chapter 10 (pg. 38).



Quad View Button



Brings up the quad view window that displays axial, sagittal, coronal and 3D Views all at the same time in this window.

To close Quad View, click the red bubble in the upper right hand corner or click the Quad View button again.

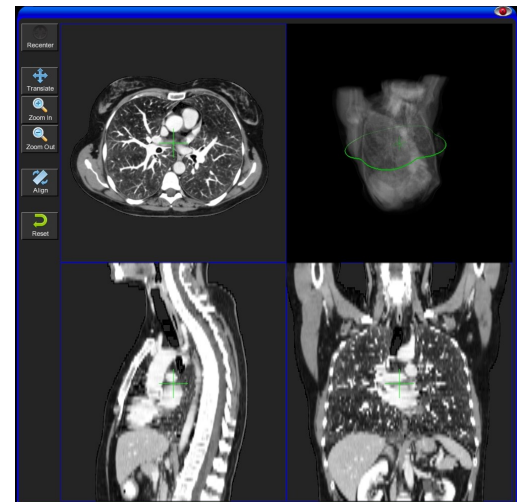
Clicking anywhere in the axial, sagittal or coronal view will reposition the crosshair to that point in all views.

Hovering over the axial, sagittal or coronal view will allow you to scroll through the sliced images in that view.

Hovering over a specific anatomical structure in axial, sagittal or coronal view will highlight that structure in all views as well.

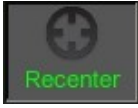
Hovering over the 3D view will allow you to zoom in and out on it with your middle mouse scroll wheel.

Right clicking and dragging on the 3D view will allow you to rotate it.



For more information on manipulating the 3D View please see Chapter 9 (pg. 35).

Quad View Navigation Buttons



Recenter

While this button is active, the axial, sagittal and coronal views will align with the current position of the crosshair at the center of the image.



Translate

While active, this allows the axial, sagittal and coronal views to be dragged within their windows by clicking on the images.



Zoom In

Zooms in on the center point of the axial, sagittal and coronal views.



Zoom Out

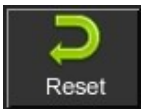
Zooms out on the center point of the axial, sagittal and coronal views.



Align

When activated, this button allows you to use Quad View with a patient's imported scan series. This works in conjunction with the Import feature.

Aligning the Anatom-e® template with imported images is described in Chapter 17 (pg. 63)

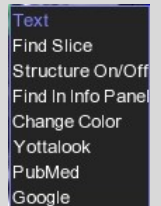


Reset

Returns the axial, sagittal and coronal views to their default position and size. This does not affect the position in the slices, the crosshair position, or any adjustments made to the 3D view.

Right clicking on a structure in axial, sagittal or coronal view will bring up this menu giving you several options for the structure.

For more information about the options on this menu, please see Chapter 10 (pg. 38).



Recenter Button



While active, the sagittal and coronal views displayed in the Key Tab Panel will align with the current position of the crosshair at the center of the image.

Chapter 8

2D View in the Main Window

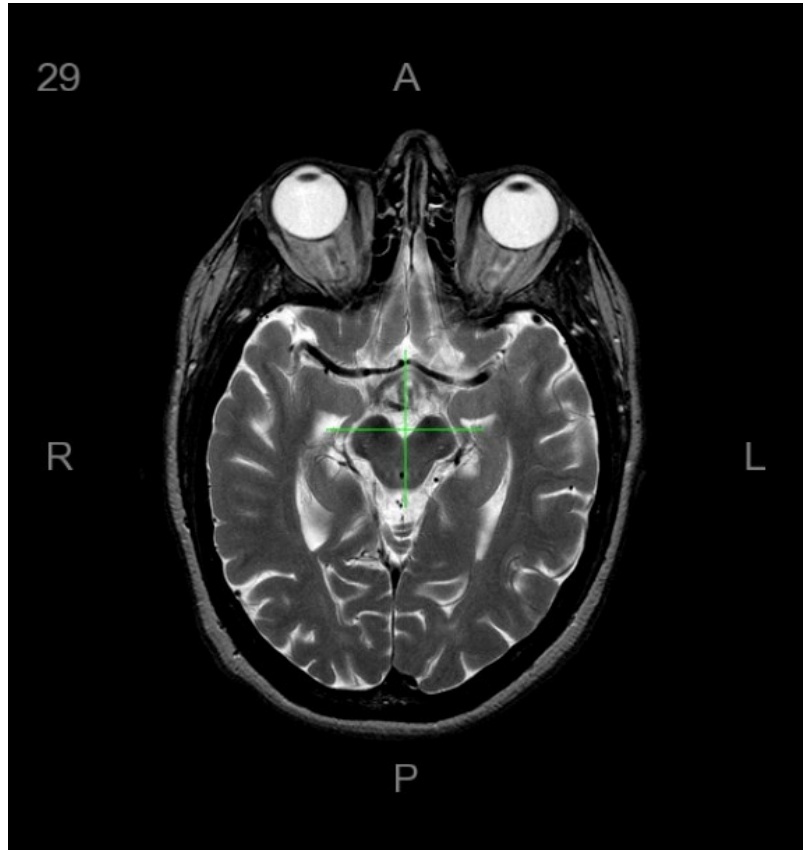
The 2D View displays axial patient image scans. These scans are used to access and display graphical anatomic information in the Anatom-e® system.

The 2D View can be adjusted and customized with many of the Controls described in Chapter 6 (pg. 21).

Labels

The number in the upper left hand corner indicates the slice number of the image series you are currently viewing.

You can navigate through the slices using the Up and Down arrows or the Page Up and Page Down keys on your keyboard. You can also navigate with the Up and Down Arrow Buttons on the Key Tab Panel (Chapter 7, pg. 29).



The A, P, R, and L labels see here refer to the patient's Anterior, Posterior, Right and Left.

Dragging and Zooming

Left clicking and dragging will allow you to move the 2D View anywhere in the Main Window.

Scrolling forward with your middle mouse wheel will zoom in on the 2D View, while scrolling back will zoom out.

Certain tools within Anatom-e® may disable or replace these controls while they are active.

Rotating

You are able to rotate the 2D image in either a clockwise or counter-clockwise direction by holding down the Ctrl key and scrolling either up or down with your middle mouse scroll wheel.

To rotate the 2D View will a slider, please see Chapter 6 (pg. 27).

Crosshair

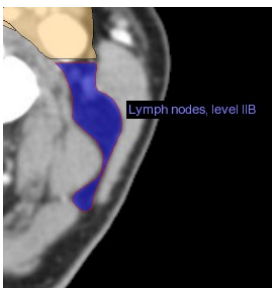
The crosshair helps localize a point across multiple views. The two lines mark the X axis and Y axis in the 2D View.

You can change the position of the crosshair by simply clicking any point on the 2D View.

To activate or deactivate the crosshair, please see Chapter 6 (pg. 23).

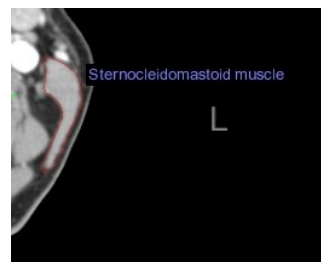
Hovering Over Structures

When you hover over a structure in the 2D View with your mouse cursor, it will display the name of the anatomic structure you are hovering over as well as outlining that structure in red.



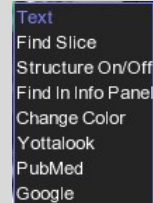
If you hover over a structure that is currently activated, it will display the name of the structure, outline it in red and highlight it in blue.

Hovering over a non-active model in 2D will highlight it in red. Hovering over an active model in 2D will highlight it in blue.



Right clicking on a structure in 2D View will bring up this menu giving you several options for the structure.

For more information about the options on this menu, please see Chapter 10 (pg. 38).



Chapter 9

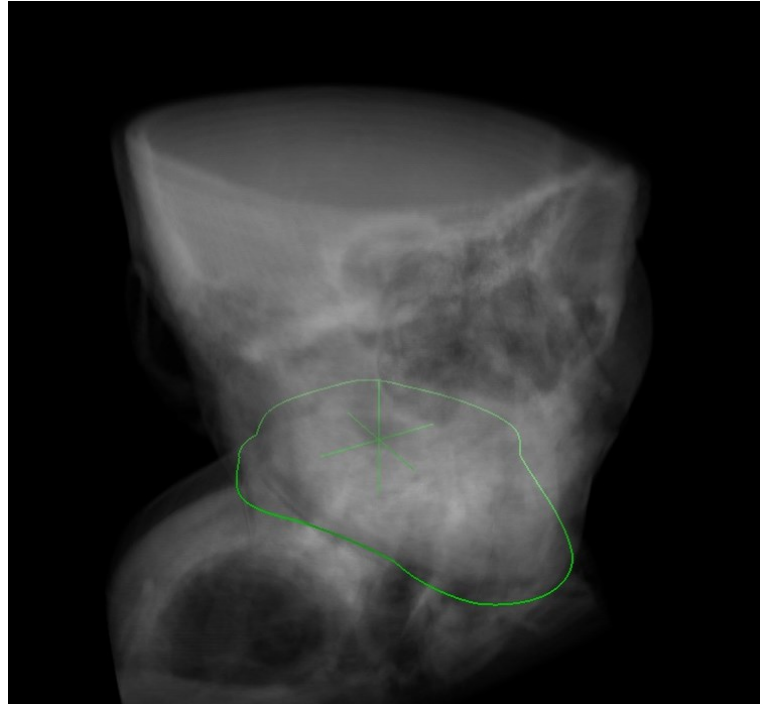
3D View in the Main Window

Anatom-e®'s 3D View is built from axial scans stacked together. It is a valuable tool for visualizing the complete shape and path of structures in Anatom-e®.

The 3D View can be adjusted and customized with many of the Controls described in Chapter 6 (pg. 21).

Outline

The outline indicates the relationship between the 3D and 2D Views. The line marks the position of the slice currently displayed in the 2D View. As you navigate up and down in the slices, the outline will move.



To activate or deactivate the outline, please see Chapter 6 (pg. 24).

Crosshair

The crosshair helps localize a point across multiple views. The three lines mark the X-axis, Y-axis, and Z-axis in the 3D View. However, this is still the same crosshair that is displayed in all views and changes made will affect the display all views.

You can change the position of the crosshair by simply clicking any point on the 2D View or the on the Sagittal or Coronal Views in the Key Tab Panel.

To activate or deactivate the crosshair, please see Chapter 6 (pg. 24).

For more information on the Sagittal and Coronal Views, please see Chapter 7 (pg. 29).

Rotating

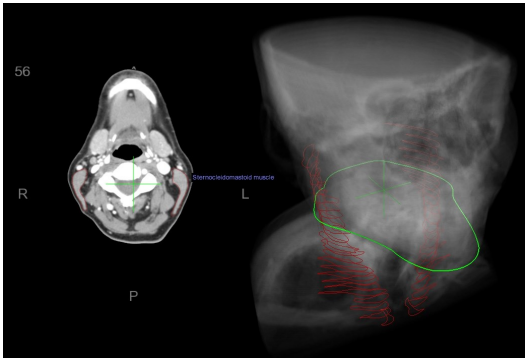
Right clicking and dragging will free rotate the 3D view in space so that you may get a better look at structures from additional angles.

For more freedom in rotating the 3D view, refer to Chapter 6 (pg. 24).

Dragging

To move the 3D View to a different position in the Main Screen, hold down Ctrl + Shift keys, right click and drag to your preferred position.

Identifying Structures from 2D View in 3D

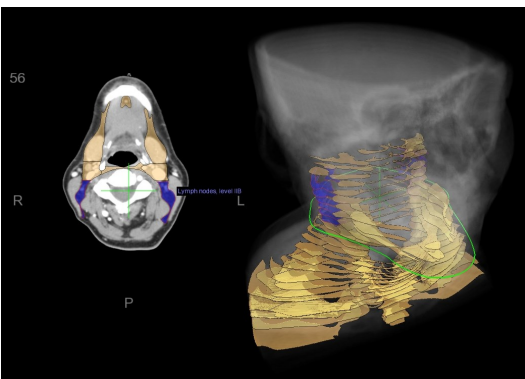


When you hover over a structure in the 2D View, it will highlight with a red outline in 3D view.

If you hover over an active structure in 2D View, it will highlight with a red outline and blue fill.

Hovering over a non-active model in 2D will highlight it in red.

Hovering over an active model in 2D will highlight it in blue.

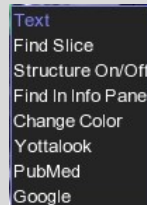


Hovering Over Structures in 3D View

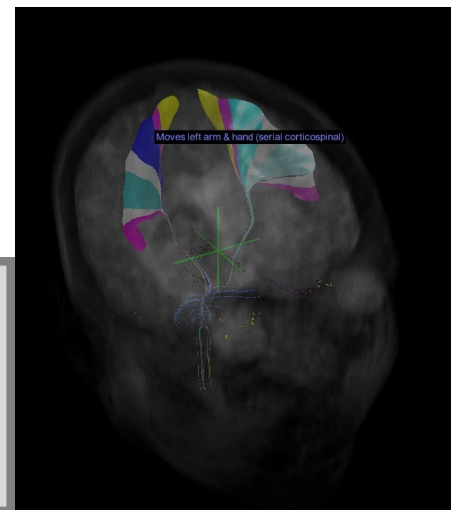
When you hover over at an active modelled structure in 3D View, display the name of the structure and highlight it in blue.

Right clicking on a modelled structure in 3D View will bring up this menu giving you several options for the structure.

For more information about the options on this menu, please see Chapter 10 (pg. 38).

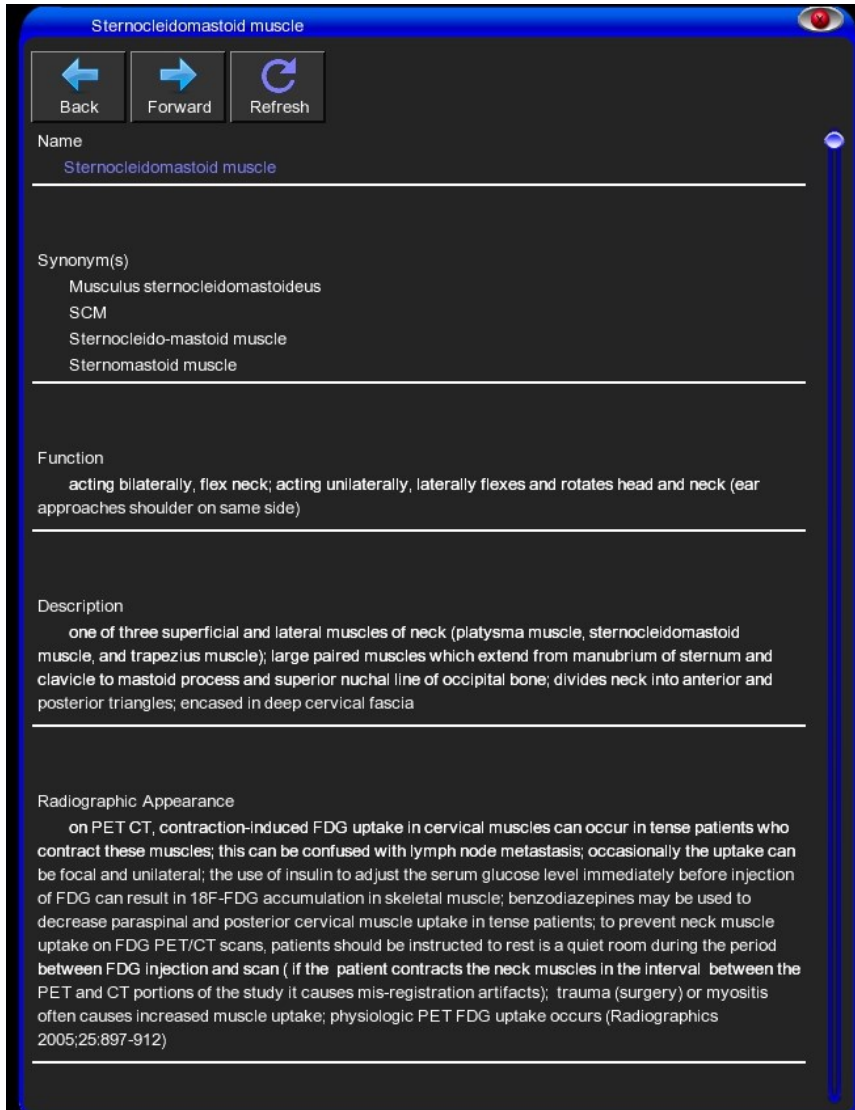


Models Only



Chapter 10

Text Box



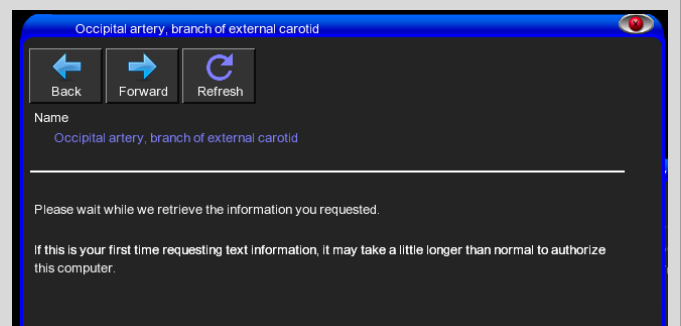
Anatom-e® has a great deal of information about each of the elements in its extensive database. This information can be accessed through the text box.

Information will vary for each entry but may include synonyms, symptoms, descriptions, functions, radiographic appearance, arterial supply, venous drainage, innervation, draining lymph nodes, radiation tolerance doses, treatment recommendations, and anatomic variations. There is also information about differential diagnoses, imaging gamuts, neurological signs/syndromes, and surgical interventions. Information may include pictures and diagrams. There are also links to other Anatom-e® elements, useful web links, and even videos of certain conditions.

An active internet connection is required to view this Text Box information. Our database is constantly expanding and your network link to our servers allows you access to the most current information available.

Text Box Error Messages

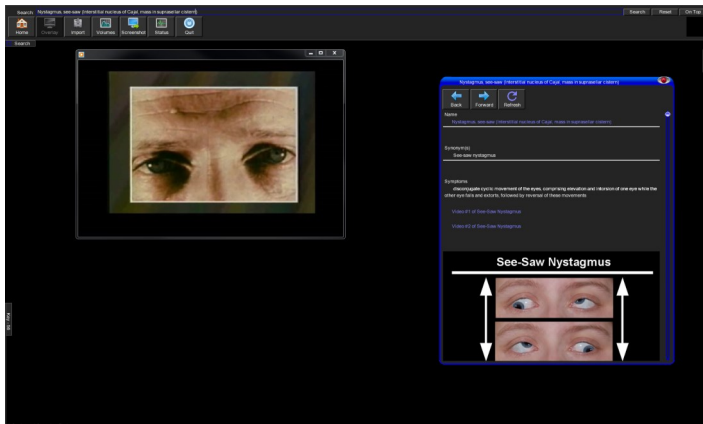
You may encounter this message while attempting to access Anatom-e® Text Box information. If it persists for longer than a few minutes, please contact your account representative for assistance.



Links in the Text Box

Links in the Text Box are displayed as light blue text. Links to another Anatom-e® element have the standard right click menu (covered later in this chapter). Links to

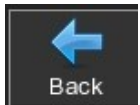
Air, trachea
Clavicle, left
Clavicle, right



outside websites, files or videos do not have a right click menu.

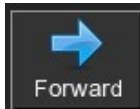
Web links will open in your internet browser, while videos will open in your multimedia player.

Text Box Navigation Buttons



Back

Returns you to the previous element you viewed in the Text Box.



Forward

Navigates you to elements that you viewed after the element you accessed via the Back button.



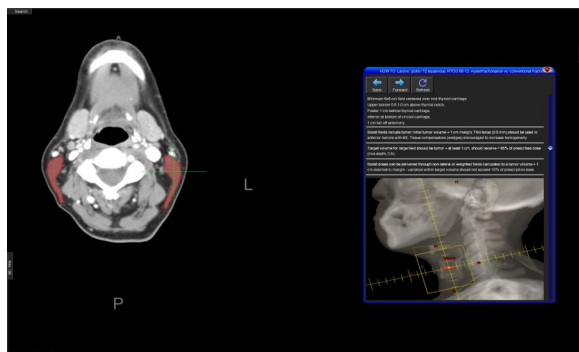
Refresh

Reloads the Text Box information for the element you are currently viewing.

Standard Right Click Menu for Elements

This menu can be accessed by right clicking on an element's name in the Text Box or in the Info Tab Panel Hierarchy. It can also be accessed by right clicking on a structure in 2D View, in the Sagittal and Coronal views in the Key Tab Panel or in the 3D view in the case of modelled structures.

Text
Find Slice
Structure On/Off
Find In Info Panel
Change Color
Yottalook
PubMed
Google

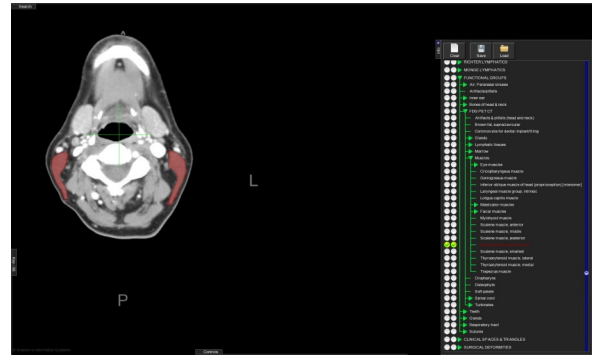


Text—Selection of this option will open up the Text Box for a specific element.

Find Slice—This option activates the structure and sets the 2D View to the first slice that it appears on. *If there is no associated structure in the current body area, Find Slice will do nothing.*

Structure On/Off—This will activate the structure, if it is not already activated. If the structure is currently activated, it will deactivate it. *If there is no associated structure in the current body area, Structure On/Off will do nothing.*

Find In Info Panel—This will expand the Info Tab Panel Hierarchy to display all instances of the element. *If the element is not part of the hierarchy the current body area, Find in Info Panel will do nothing.*

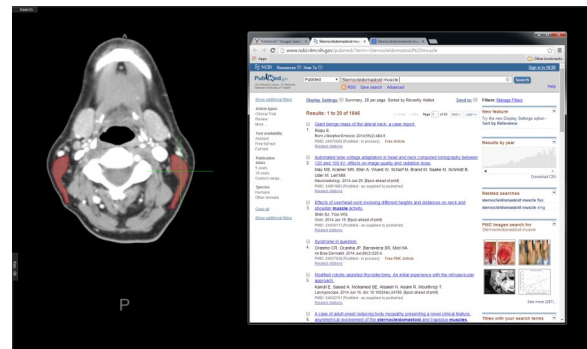
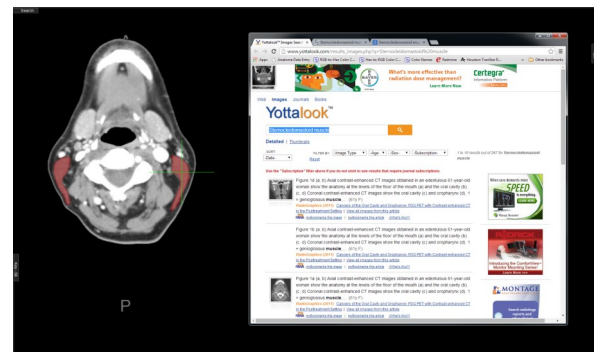


Change Color—Opens the Color Wheel Selection Window. The default colors of structures will vary. The Color Wheel Selection Window is covered later in this chapter.

Yottalook—This will open a web browser window and search for the element on Yottalook.

Yottalook is a free medical imaging search engine.

<http://www.yottalook.com/>



PubMed—This will open a web browser window and search for the element on PubMed.

PubMed is a free resource that is developed and maintained by the National Center for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM), located at the National Institutes of Health (NIH).

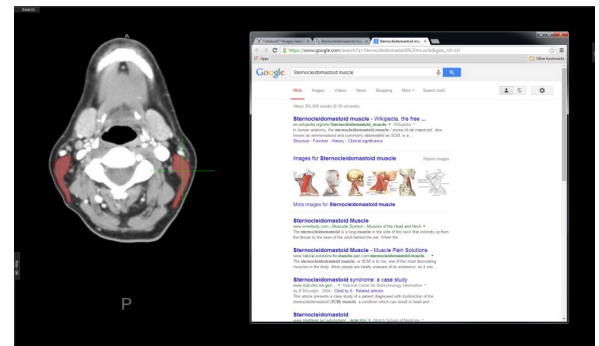
PubMed comprises over 23 million citations for biomedical literature from MEDLINE, life science journals, and online books. PubMed citations and abstracts include the fields of biomedicine and health, covering portions of the life sciences, behavioral sciences, chemical sciences, and bioengineering.

<http://www.ncbi.nlm.nih.gov/pubmed>

Google—This will open a web browser window and search for the element on Google.

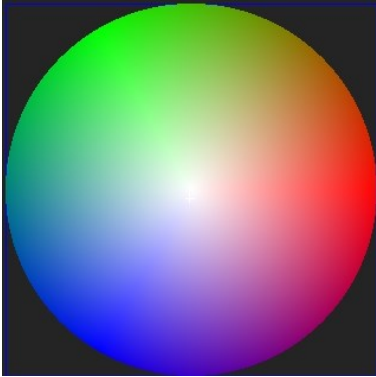
Google is the most-used search engine on the Internet.

<http://www.google.com/>



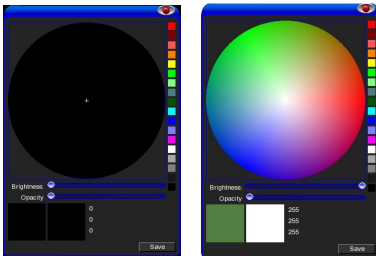
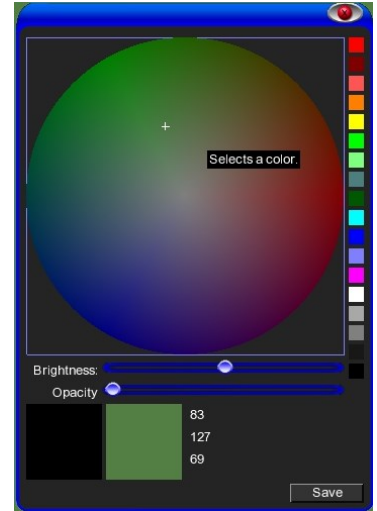
Color Wheel Selection Window

This window allows you to change the color of a certain area or aspect of the program, such as a specific structure, the 3D outline, the crosshair, and/or the background of the Main Screen.



The color wheel displays a range of colors available for your selection. Clicking anywhere on the wheel will select the color currently displayed at that point on the wheel.

You can also select a color from the eighteen swatches on the right side of the window by simply clicking on the swatch.



The two sliders below the color wheel control the Brightness and Opacity of the colors displayed in the color wheel.

The left box at the bottom of the window indicates the color before the window was opened.



The right box indicates the color that you have currently selected.

The numbers on the right side of the boxes indicate the RGB values of the current color selection (the color in the right box).

In many cases, when a color is selected it is displayed as the color of the program aspect you are changing, however this change will not persist after closing the window unless you apply it by clicking the Save button, which will also close the window.

If you do not wish to save your changes, simply click on the red bubble in the upper right corner. This will close the window and the color will revert back to the color in the left box.

Color Name (RGB value)

- Red (255 0 0)
- Medium Red (128 0 0)
- Pink (255 85 85)
- Orange (255 128 0)
- Yellow (255 255 0)
- Green (0 255 0)
- Light Green (128 255 128)
- Off Green (76 127 126)
- Dark Green (0 89 0)
- Cyan (0 255 255)
- Blue (0 0 255)
- Light Blue (128 128 255)
- Purple (255 0 255)
- White (255 255 255)
- Light Grey (168 168 168)
- Grey (128 128 128)
- Dark Grey (24 24 24)
- Black (0 0 0)



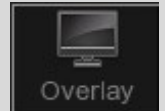
Chapter 11

Overlay

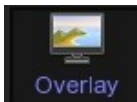


Overlay combines the power of Anatom-e® with your treatment planning or PACS systems while you work, by letting you view the output from both the Anatom-e® system and another computer at the same time on one computer monitor.

For Overlay to work, your Anatom-e® system requires a hardware connection to your other computer. If this connection is not present the Overlay button text will be greyed out.



If you are experiencing trouble with the Overlay function, or if you would like more information about having this feature as part of your Anatom-e® system, please contact your account representative.

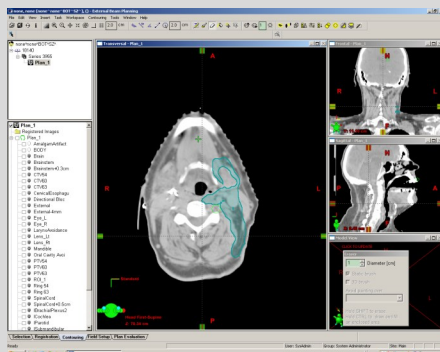


When activated the Overlay button will appear depressed and the screen will be colored.

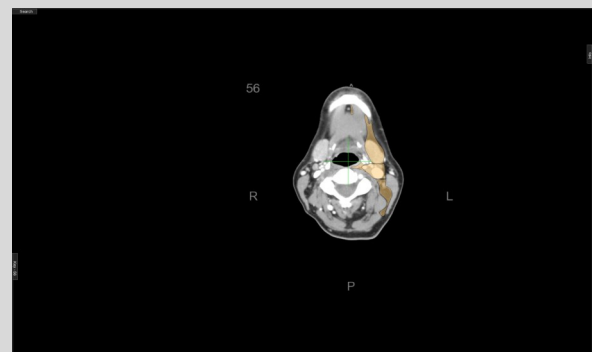
Overlay combines the on-screen information from your PACS or treatment planning system with Anatom-e®'s Main Screen.

Example

Treatment Planning System



Anatom-e®



Treatment Planning System with Anatom-e® Overlay

It is important to note that Overlay only combines the on screen information from the two systems. Each is still controlled and operates separately. This allows you to contour on your treatment planning system while using the Anatom-e® templates as a guide, or even tracing around them after aligning with your patient scans.

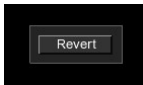


Right clicking on the Overlay Button will bring up this menu. The menu is available even if the Overlay feature is not enabled on your system.

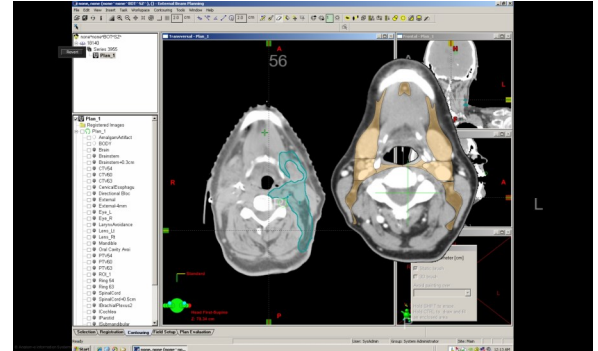
Capture Mode

Capture Mode hides all tabs, panels, windows and the 3D View, allowing you to get clearer screenshots of information from the computer you are overlaying with.

Capture Mode does not hide the 2D View.



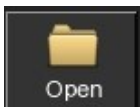
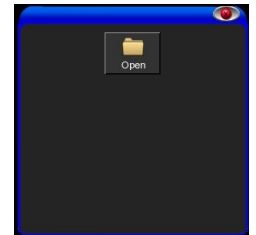
To exit Capture Mode, click the Revert button.



Overlay Import

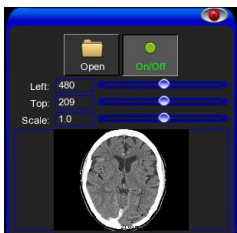
Overlay Import allows you to use the Anatom-e® Overlay tools with an image file from your computer.

When you select Overlay Import, you will be presented with this small window.



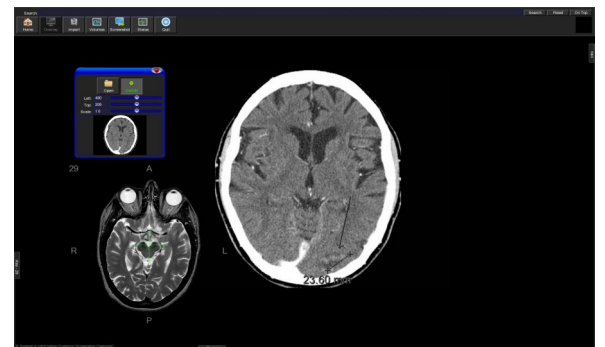
Open

Use this button to locate the image file you wish to use.



A thumbnail of the image will be displayed in the window and the actual image will be displayed in the Main Screen, the same as when using regular Overlay.

Use the sliders to adjust the image's offset (from the left and top of the Main Screen) and the image's scale.



On/Off

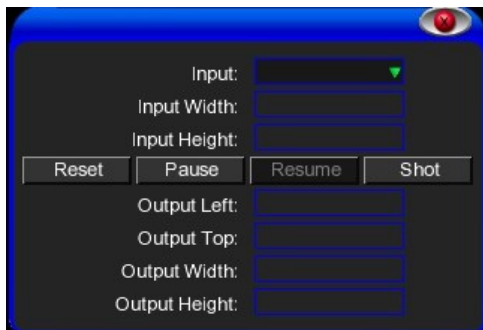
This button controls whether or not the image file is displayed.

When it is depressed with a green dot, the image will appear in the Main Screen.

When it is raised with a red dot, the image is hidden.

If the button is in the "On" position, the image will be displayed, even if you close the Overlay Import window.

Overlay Settings



This window provides a means to adjust the settings of your Overlay hardware connection.

Input—Selects the Input device for Overlay.

Input Width—This value represents the width of the input signal from your PACS or treatment planning system.

Input Height—This value represents the height of the input signal from your PACS or treatment planning system.

If you are unsure of the Input Width and Height values, you may refer to the Display properties of your PACS or treatment planning system.

Reset—Refreshes your hardware connection if there is a display issue. *If you continue to experience display issues, please contact your account representative.*

Pause—Freezes the image feed from the system you are overlaying onto. No changes made on the other system will be displayed in the Anatom-e® window until you select Resume.

Resume—Unfreezes the image feed from the system you are overlaying onto after you have selected Pause.

Shot—Takes a screenshot.

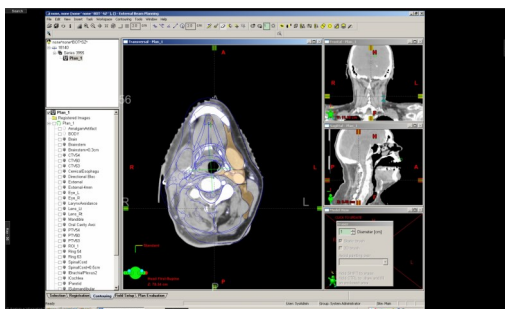
Output Left—Adjusts the offset of the Overlay image feed from the left edge of the Anatom-e® main screen.

Output Top—Adjusts the offset of the Overlay image feed from the top edge of the Anatom-e® window.

Output Width—The display width dimension of the image feed in the Anatom-e® window.

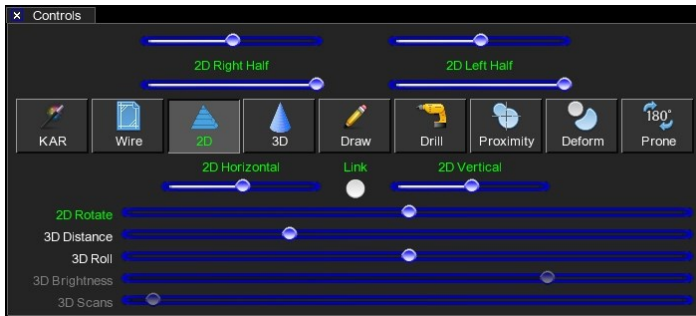
Output Height—The display height dimension of the image feed in the Anatom-e® window.

Aligning Overlay



Tools to help you align Anatom-e® can be found on the Controls Tab Panel, which is covered in Chapter 6 (pg. 21).

If you are having issues aligning Overlay images, or you would like a demonstration or training session, please contact your account representative.



The 2D Horizontal, Vertical and Rotate sliders allow you to stretch, compress, and turn the template to better fit with your patient.

The 2D Structure and Image sliders allow you to fade the normal patient scans from Anatom-e® so you can align the template over your patient.

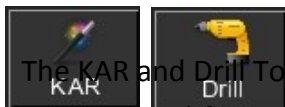
The Wireframe feature gives you landmarks to help with these tasks and to align specific regions of interest with.



If you experience any issues with the Overlay function, please contact your account representative for assistance.

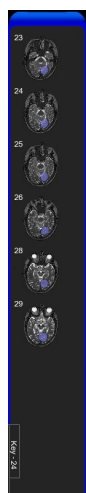
Chapter 12

KAR and Drill Tools



The KAR and Drill Tools both output structured reports based on Anatom-e®'s Knowledge Assisted Reporting (KAR) feature. This feature gives you detailed lists of involved anatomy, differential diagnoses, imaging gamuts and possible neurological and functional impairments for specific regions of interest.

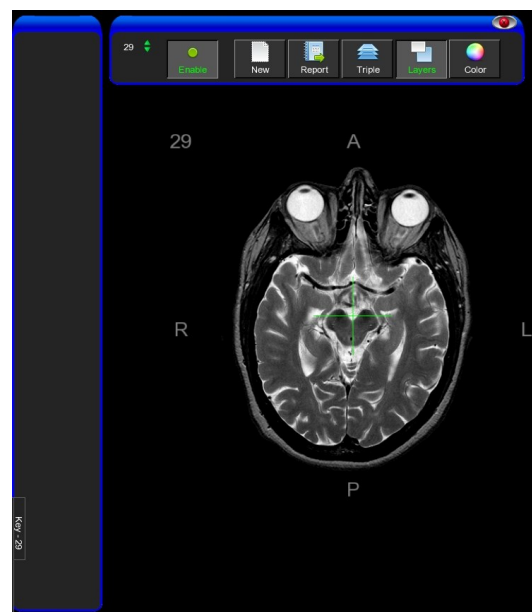
KAR Tool



The KAR Tool has three windows dealing with thumbnails, navigation, and the report.

Thumbnail Window

The long vertical window on the left side of the screen displays thumbnails of the slices which currently have regions of interest circled. The numbers to the left of each thumbnail indicated the slice number. The structure report covers all of these slices. Clicking on a thumbnail image will take you to that specific slice.

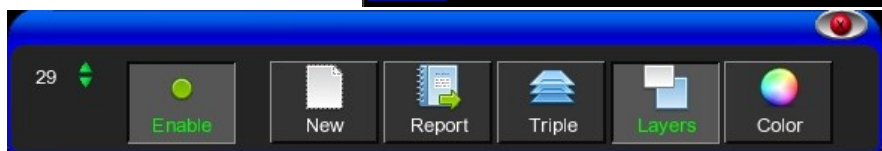


Navigation Window Buttons



Slice Number and Arrows

This number indicates the



current slice displayed in 2D View. You can navigate through the slices using the Up and Down arrows or the Page Up and Page Down keys on your keyboard. You can also navigate with the Up and Down Arrow Buttons on the Key Tab Panel (pg. 29). While using the KAR Tool, you can also navigate through the slices using the middle mouse scroll wheel. While the KAR Tool is open, you will not be able to zoom in and out of the 2D View with the middle mouse scroll wheel.



Enable

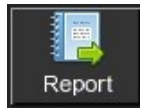
This button enables and disables the drawing portion of the KAR tool. Left click and drag while this button is enabled (Green), to draw a circle around a region of interest. When you release the left mouse button, the circle will be automatically closed and a report will be generated. You will not be able to drag and move the 2D View while this button is enabled. When this button is disabled (Red), you will be able to drag and move the 2D View as normal. You still will not be able to zoom in and out with the middle mouse scroll wheel while the KAR Tool is open.

It is important to note that KAR only supports drawing one circle per slice. If you draw a circle around another region on the slice, KAR will use that circle and clear the previous circle.



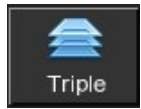
New

Clicking this button clears all of the current values and drawings, allowing you to begin generating a fresh report. The circles you have drawn will remain unless you clear them by clicking the New button.



Report

A report is automatically generated when a circle closes, however if you accidentally close the report window you can generate the report again by clicking this button.



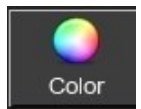
Triple

When enabled, this button copies circles drawn around a region of interest to the same spot on the slice above and the slice below the current slice. Thus, you are able to cover the region on three slices, while only drawing one circle.



Layers

While enabled, this button keeps the drawn circles on top of any activated structures. When this button is disabled, activated structures will appear on top of the drawn circles.



Color

This will open the Color Wheel Selection Window allowing you to change the color of the circles that are drawn with the KAR Tool. The default color is Light Blue (RGB value: 128 128 255).

The Color Wheel Selection Window is explained in Chapter 10 (pg. 39).



Report Window

This window displays all the possible information that could be included in the report you export from the KAR Tool. The information is divided into several categories and tabs. You can customize the output of your structure report from this window.

Category Collapse and Expand Arrows

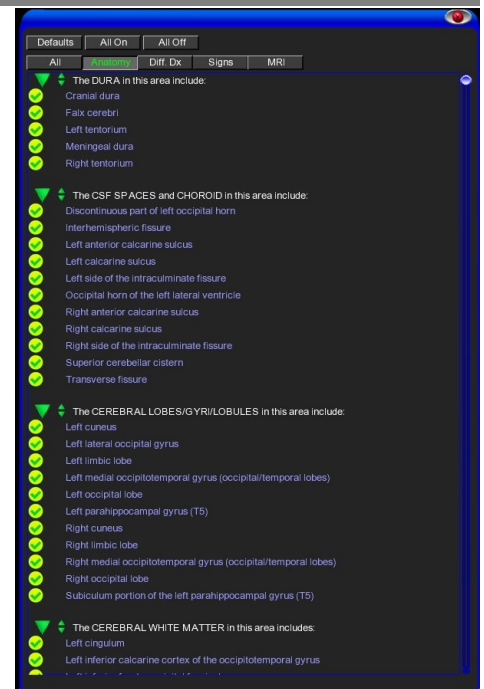
The single large arrow next to a category title allows you to include or exclude the entire category as desired. A collapsed category is excluded from the structured report.

Category Order Arrows

The two small arrows next to a category title allow you to reorder the category list to best suit your needs and preferences.

Element Check Bubbles

The check bubble next to each element determines whether or not that element appears in the exported structured report. By default all elements in each category are included. You can uncheck the bubbles to remove certain elements from the exported report.





Defaults

Loads the default values for the KAR Tool and report, resetting any changes you may have made.

All On

Activates all elements in the current report window to be included in the structured report.

All Off

Deactivates all elements in the current report window excluding them in the structured report.

All—Tab

Displays all possible categories and elements in this region of interest from all of the Report tabs.

Anatomy—Tab

Displays the anatomic structures and functional circuits in this region of interest.

Diff. Dx—Tab

Displays the differential diagnoses and imaging gamuts for a lesion in this region of interest.

Signs—Tab

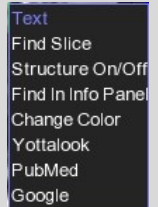
Displays the neurological signs and functional disruptions for a lesion in this region of interest.

MRI—Tab

Displays the MRI specific imaging gamuts for a lesion in this region of interest.

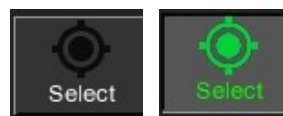
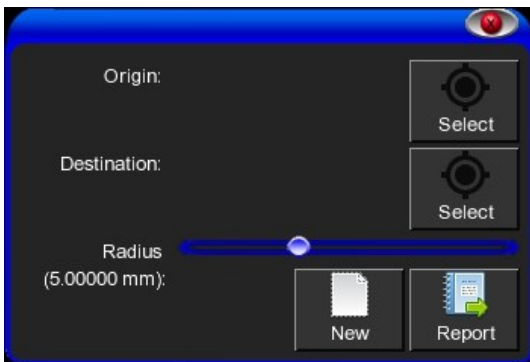
Right clicking on an individual element in the Report list will bring up this menu giving you several options for the element.

For more information about the options on this menu, please see Chapter 10 (pg. 38).



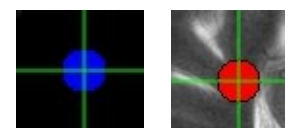
Drill Tool

The Drill Tool builds upon the KAR Tool’s features to report all structures touched by a straight tubular path passing (“drilling”) through the scans.



Origin and Destination Select

These buttons allow you to select the Origin (start) and Destination (finish) of the tube. You may select them in any order, by simply left clicking a point on the 2D View. However, if you select the Origin first, Anatom-e® will automatically activate the Destination Select button for you.



A selected Origin point is marked with a Blue sphere, while a selected Destination point is marked with a Red sphere.

The X, Y, and Z coordinates of each selected point are displayed next to the labels.

Radius Slider

This slider adjusts the radius of the Drill tube. The current value is displayed beneath the label. The default value is 5.00000mm.



New

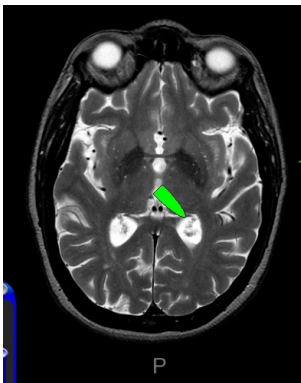
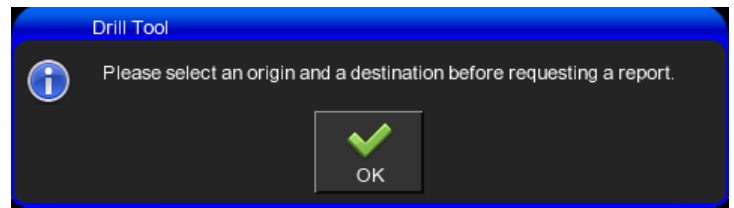
Clicking this button clears all of the current values and selection, allowing you to generate a new Drill tube and report.



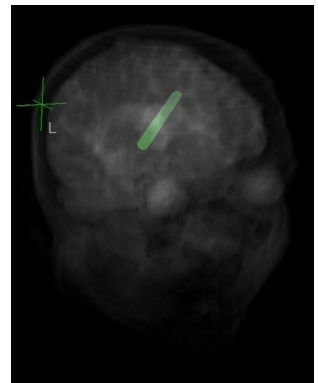
Report

This button generate a report about all structures touch by the drill tube. The report is displayed in the same Report Window as in KAR. (see pg. 46)

You are unable to generate a report without selecting both an Origin point and a Destination point. If you attempt to do so, you will be presented with this error message. You will need to go back and select the missing points in order to be able to generate a report.



The Drill tube appears as an elongated green structure on the 2D View. However you can see that it is, in fact, an angled tube in the 3D View.



To close the Drill Tool, click the red bubble in the upper right hand corner of the drill window or click the Drill button in the Controls Tab Panel again.



The points you have selected and/or drill tube you have generated will remain unless you clear them by clicking the New button.

Exporting a Structured Report

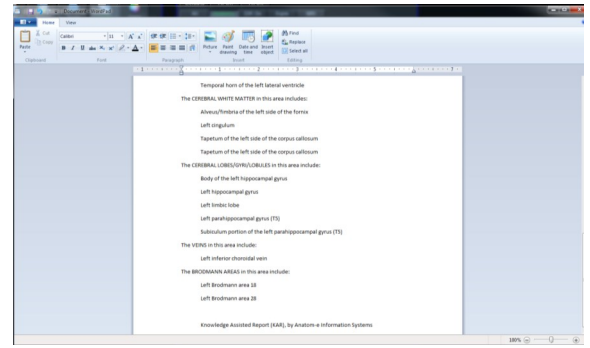
Knowledge Assisted Report (KAR), by Anatom-e Information Systems

Once you have finished adjusting and customizing the contents of the Report Window, open your preferred text editing program on the Anatom-e® system (e.g. Wordpad, Notepad).

Paste the structured report into the text document.

Save the text document, and proceed to print, email, or copy the file as needed or desired.

You can add more information in the form of additional reports, specific comments or even screenshots (only handled by certain text editing programs). (See for information about taking Screenshots in Anatom-e® Chapter 4 (pg. 15)).



It is important to realize that Anatom-e's structured report exporting uses your computer's Copy, Clipboard, and Paste functionalities. For this reason you should not copy or paste any other objects between the time you generate the report and the time you export it to the text document.

If you experience any issues with the KAR or Drill Tools, please contact your account representative for assistance.

Chapter 13

Proximity Tool



The Proximity Tool allows you to measure the distance from a selected point to the activated structures around it, up to a distance of 50mm.

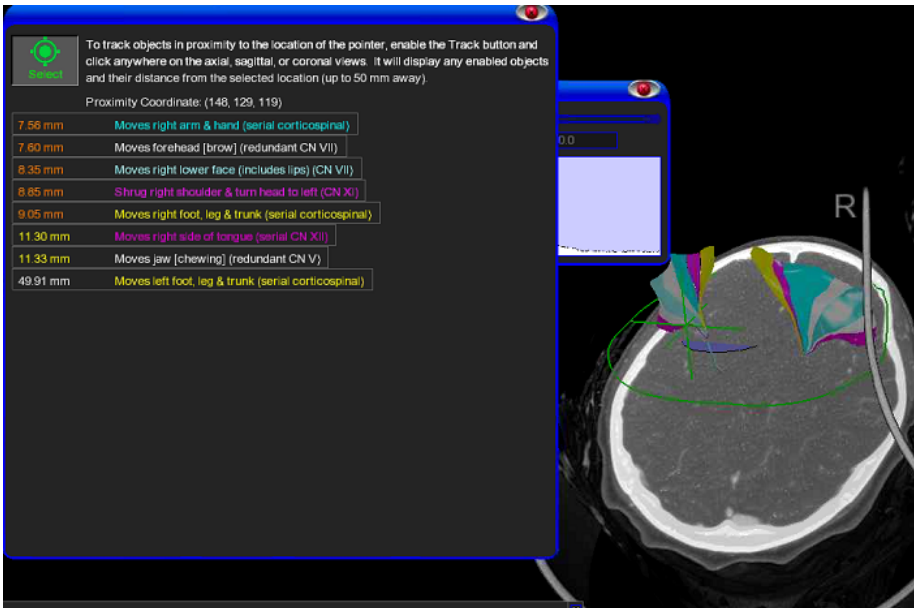
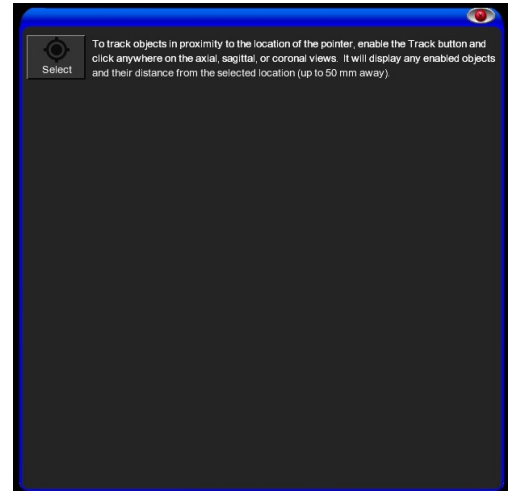


Select

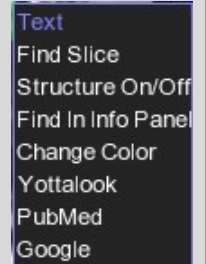
Engaging this button will allow you to generate a proximity report from any point that you left click on in the axial (2D), sagittal or coronal views.

It is important to note that the Proximity Tool only measures the distance to activated structures. If no structures within 50mm are activated, it will simply display the crosshairs coordinates (X, Y, Z).

If you left click on another point while the select button is still engaged, a new proximity report will be generated.



Right clicking on an individual element in a proximity report will bring up this menu giving you several options for the element.



For more information about the options on this menu, please see Chapter 10 (pg. 38).

To close the Proximity Tool, click the red bubble in the upper right hand corner of the window or click the Proximity button in the Controls Tab Panel again.



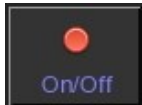
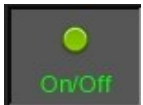
Chapter 14

Deform Tool

This feature is for research and experimental use only.

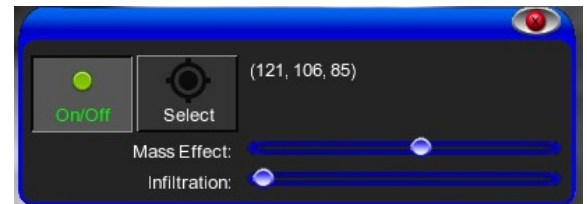


The Deform Tool allows for simulation of anatomical changes due to mass effect and tumor infiltration.



On/Off

This button controls whether or not the Deform Tool's results are displayed.



Select

Engaging this button will allow you to select any point that you left click on in 2D View. This point will be used as the point of origin for the deformation. The coordinates of the point are displayed to the right of the button. (X, Y, Z)

If you left click on another point while the select button is still engaged, that point will become point of origin for the deformation.

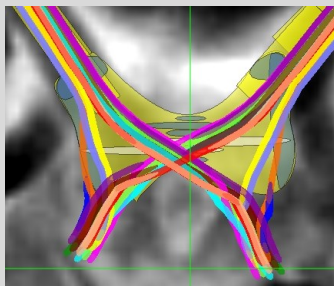
It is important to note that the Deform Tool only manipulates activated modelled structures. Also, please remember that this feature is for research and experimental use only.

Mass Effect and Infiltration Sliders

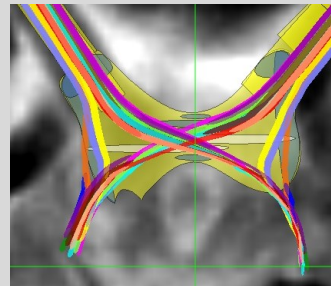
These control the degree to which the normal structures are deformed.

Example

Normal appearance

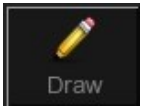


With the Deform Tool Active

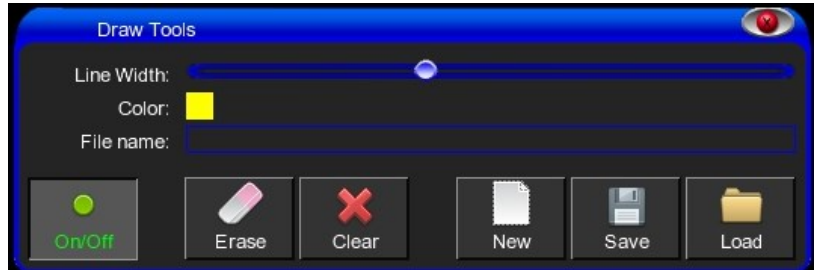


Chapter 15

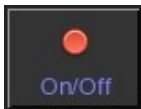
Draw Tool



The Draw Tool allows you to annotate specific slices in Anatom-e® and to save and load this information.



Drawing



On/Off

This button controls whether you are able to draw lines currently. When enabled (Green), it allows you to draw by left clicking and dragging with the mouse.

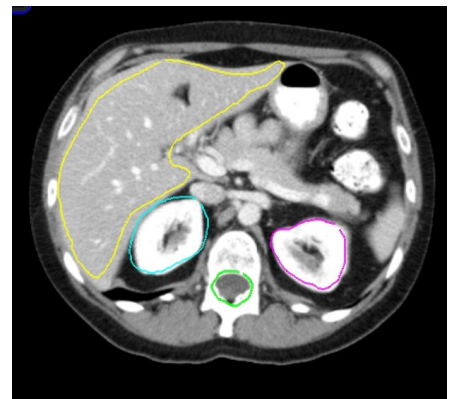
It also allows you to use the other features of the Draw Tool. While this button is enabled, you will not be able to move the 2D View by clicking and dragging.

Line Width Slider

This controls the width of the line that is drawn when you click and drag.

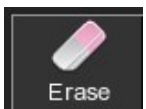
Color

Opens the Color Wheel Selection Window. The default color is Yellow (RGB value: 255 255 0).



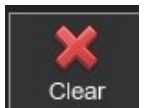
The Color Wheel Selection Window is covered as part of Chapter 10 (pg. 39).

Erasing



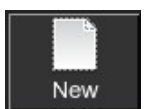
Erase

Allows you to Erase specific areas by left clicking and dragging when enabled.



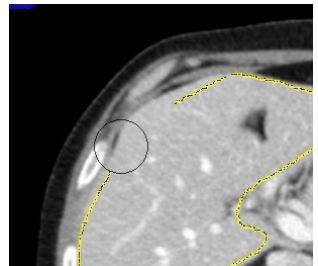
Clear

Removes all drawn lines from the current slice.



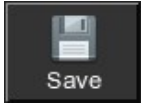
New

Removes all drawn lines.



Be careful when using the Erase, Clear and New buttons. Anatom-e® does not have an undo function.

Saving and Loading Draw Files

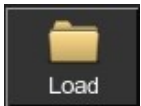


Save

In order to save, you must have entered a File Name.

It is advisable to include some notation of the current body area in your file name, as draw files are unable to load in body areas other than the one they were saved in.

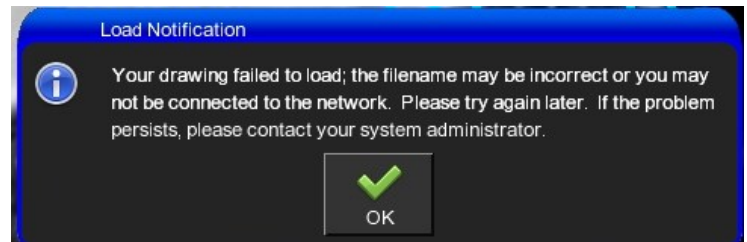
Files saved from the Draw Tool will have a *.draw* file extension.



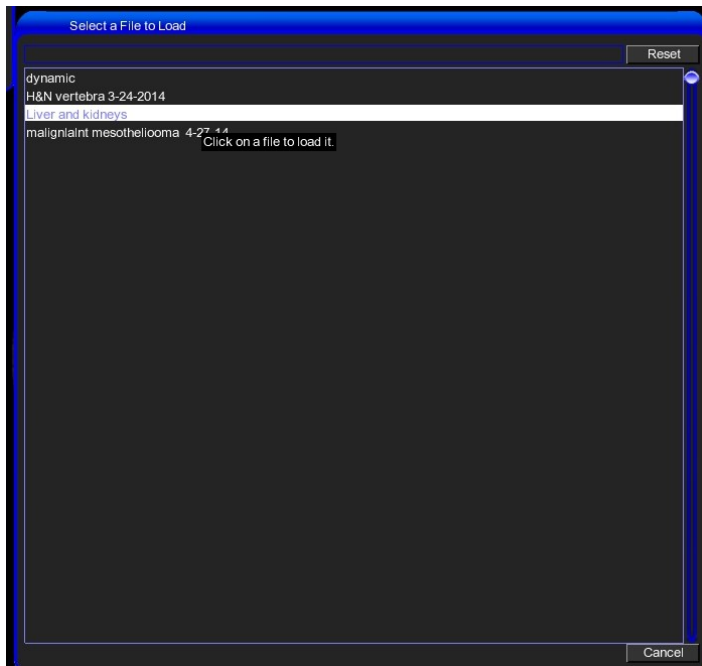
Load

There are multiple ways to load a previously saved draw file.

- You can type enter the File Name and press the Load button. However you must have the file name completely right or you will receive this error message.



- You can select the Load button while the file name field is blank. This will open the draw file loading screen. From there you can select your draw file from the list. You can also begin typing the file name



into the search bar at the top, in order to refine the displayed list. The Reset button will clear any input in the search bar. Click on the file name to load the draw file. Click Cancel to close this window without selecting a file name.

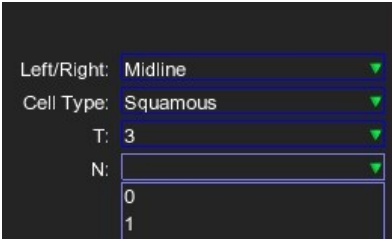


To close the Draw Tool, click the red bubble in the upper right hand corner of the window or click the Draw button in the Controls Tab Panel again.

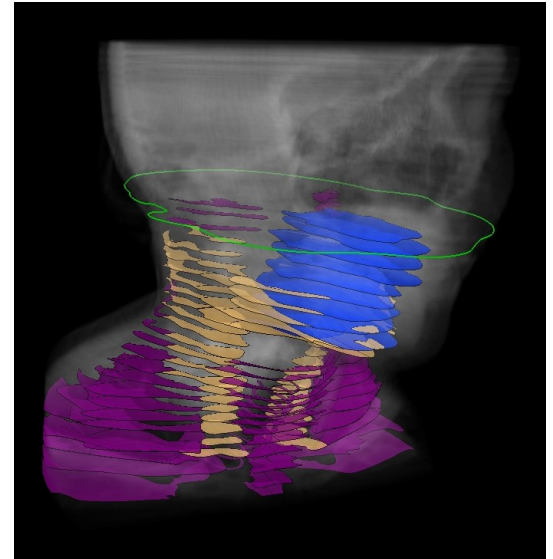
Chapter 16

Tumor Sites

Anatom-e® provides predelineated template data sets to assist you in treating Radiation Oncology patients more accurately, more consistently and faster.



These sets are automatically generated based on the data you enter at the “Choose Tumor” screen of the Body Area Selection Window. (Chapter 2, pg. 7).



Predelineated Template Data Set

These template data sets include:

- Anatomic locations to help localize tumor size and spread
- Template contours of CTVs based on anatomical landmarks and standards
- Regional lymphatics and lymph nodes at risk
- Simulations of post-operative changes
- Elective lymphatic treatment volumes
- Avoidance structures
- Comparative data from multiple sources

Data sets will vary by tumor site based on specific case requirements and industry standards.

Of course, all of the template data sets are fully customizable using the tools previously discussed in this manual, so you can tailor them to your specific protocols and plans.



When used in conjunction with the Overlay feature (Chapter 11, pg. 41), these templates can be used as side-by-side references, or even as traceable guidelines, allowing you to contour faster with more confidence.

Standards and Protocols

Anatom-e®'s database includes treatment protocols and standards from every standards organization, and is being constantly updated as new protocols and studies are released.

Major points of interest are linked at the top of each tumor site's Text Box entry, allowing for easy and quick access.



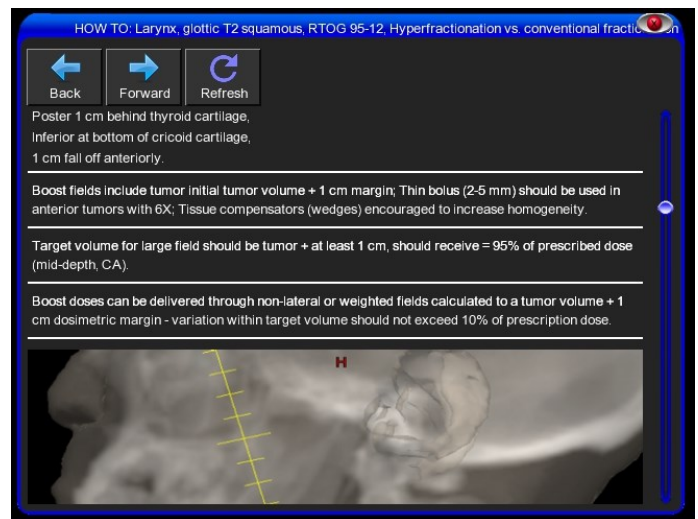
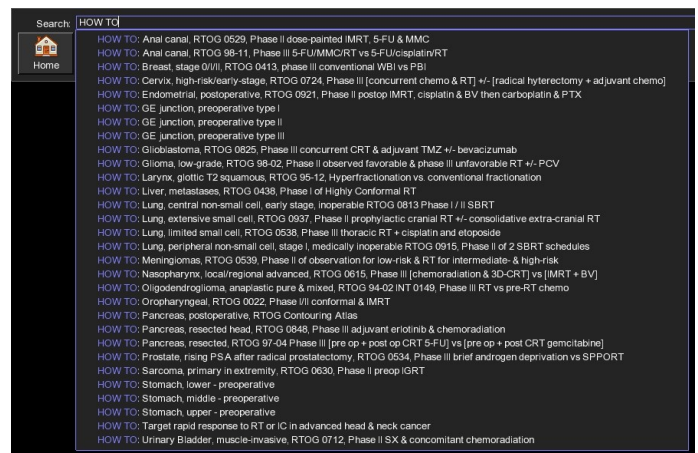
“HOW TO” Elements

In some cases, Anatom-e® isn't able to provide a full treatment template, or there are specific points and recommendations that we want to provide you with more insight about.

That's why we have our “HOW TO” elements.

Each of these elements is based on a specific protocol and provides a guide to treatment based on that protocol's rules and guidelines. Diagrams and images are included when appropriate and useful.

“HOW TO” elements are accessible via the search bar, by typing in the words “How To.” They are also accessible by links from specific tumor sites related to these protocols.

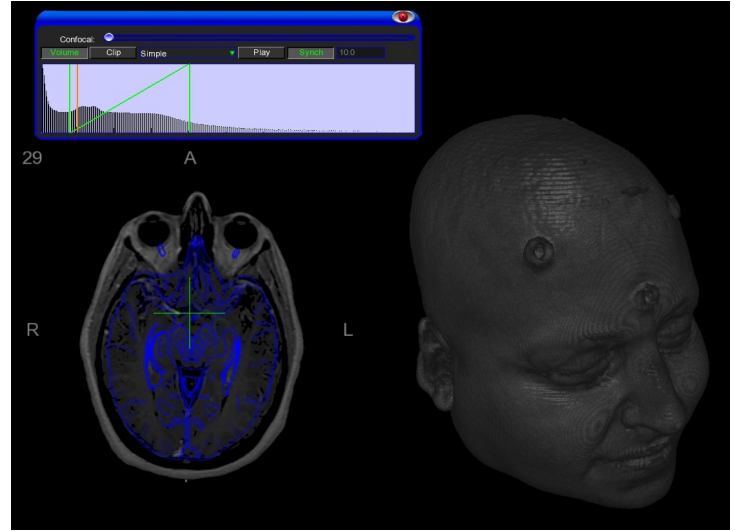


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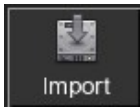
Importing and Volumes



Import allows you to bring your patient scan series directly into the Anatom-e® program. This allows you to combine our data set with your patient's actual scans and harness the Anatom-e® volume rendering tools to better understand specific cases. With these volume rendering tools, Anatom-e® can reassemble DICOM images into 3D volumes, allowing you to view your patient's data from new angles and with additional information from our system, helping you to expand your understanding of the images' content.

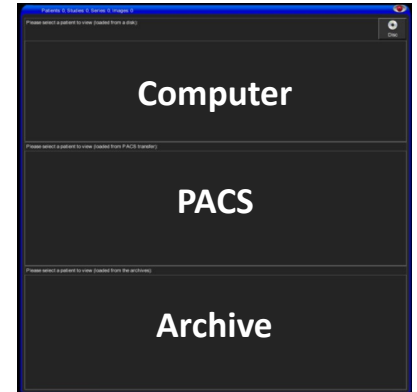
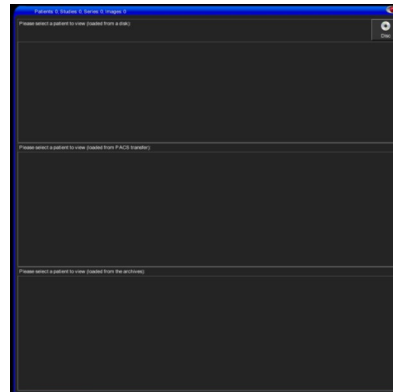


Importing DICOM Images



To import patient scans, start by clicking the import button, which will bring up this window.

You can import DICOM files via your computer, via your PACS system, or from archives in the Anatom-e® system.



The top of the window displays data about all of the available files from all three sources. The bar shown here tells the viewer:

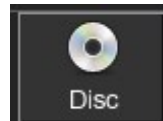
Patients: 12, Studies: 32, Series: 83, Images: 3730

- There are files pertaining to 12 Patients.
- Between them, those patients had 32 Studies.
- Those studies include a total of 83 Series.
- All of those series together have a total of 3730 Images.

Importing From Your Computer

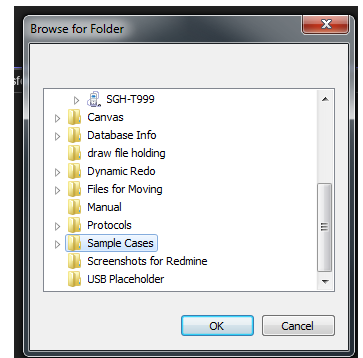


The first box on the Import Window deals with importing files from your computer or an external source used by your computer, such as a CD or USB drive.



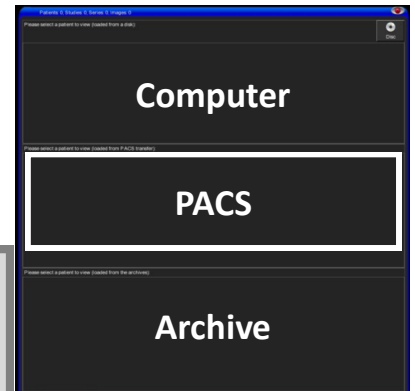
Use the “Disc” button to bring up your computer’s “Browse for Folder” window. Select the

appropriate folder from the list shown, and the data from that folder will populate into Anatomom-e®



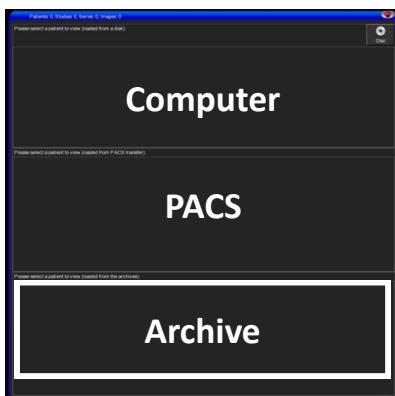
Importing From PACS

Once you export the files from your PACS system, they should appear in the list shown in the second box of the Import Window.



If you experience any issues with the connection between your Anatomom-e® system and your PACS, please contact your account representative.

Importing From Anatomom-e® Archives



After you load files into the Anatomom-e® system, you have the option to archive them (the process of which is covered later in this chapter). Files that have been archived are displayed in the third and final box of the Import Window.

Selecting a File to Import

Each entry provides information on the patient which it corresponds with. All information is taken from the DICOM files. When you select an entry, it will be highlighted in blue.

View	2	20110526	113041		F	061Y
View	2	20110527	212725		F	035Y
View	2	20110527	212725		F	024Y

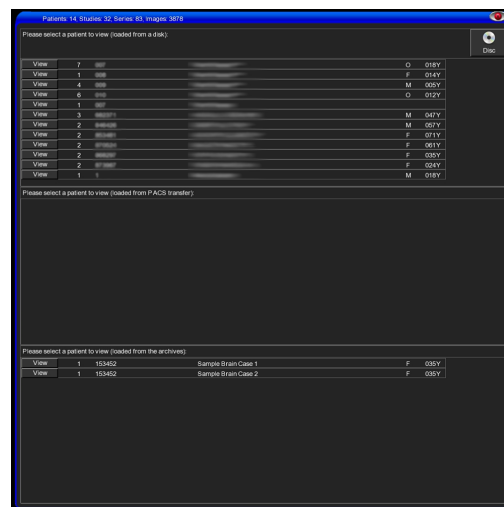
Number of Studies—The first value in the entry tells you the number of image studies available for the specific patient.

Patient ID—The second value is the patient’s ID number, which may have been assigned by the institution where the images were taken, or may have been assigned by the user who archived the images, depending on what your import source is.

Description—The third value often contains the patient’s name when imported from other sources. However, this file may also be set by users when archiving images for later retrieval.

Sex—The fourth value corresponds to the patient’s sex.

Age—The fifth value displays the patient’s age, as recorded in the DICOM file.



To view the available images for a patient, use the “View” button next to the patient’s entry.

This will bring up the patient’s studies in the window, and you will be able to view previews of each image series. All of the image series in each study are shown in one row.

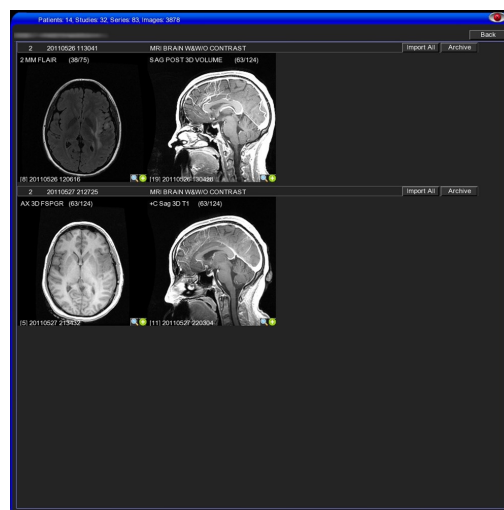
The header at the top of each row provides more details about that study’s contents.

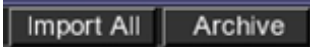
2	20110526	113041	MRI BRAIN W&W/O CONTRAST
---	----------	--------	--------------------------

Number of DICOM object—The first value indicates the number of objects in the study. Anatom-e® only displays the image scan files, even though there may be other information stored.

Date and Time of Study— The second value displays the date and time that the study was done. For example, the study shown above has the value 20110526 113041, meaning it was taken on May 26, 2011 at 11:30:41.

Description—The third value often contains information about the modality used to capture the scan. The example here indicates this study was an MRI of the Brain, with and without contrast.

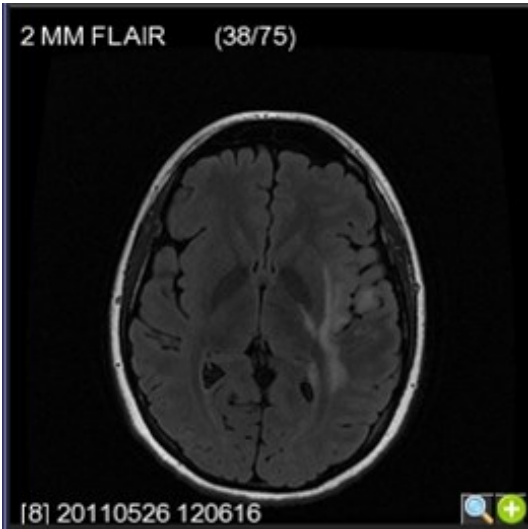




On the right side of each header, there are 2 buttons.

Import All—This button will import the entire study into Anatom-e® for you to view and work with.

Archive—This button allows you to archive the entire study for access at a later time. The archive process is explained later in this chapter.



Each image series is labeled with additional information about that specific series.

Description—The series description is displayed in the upper left corner of the image.

Slice Number—The value after the series description indicates the current image slice displayed, as well as the total number of slices in this series. The image seen here is the 38th of 75.

Date and Time of Series— The value displayed in the bottom left corner shows the date and time that the series was done. For example, the study shown here has the value 20110526 120616, meaning it was taken on May 26, 2011 at 12:06:16.

There are two buttons in the bottom right corner of each image series.



Preview—This will open the image series in a separate window. Multiple Preview Windows may be open at one time.



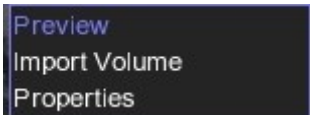
Import—This will import the image series into Anatom-e® for you to view and work with. Multiple image sets may be imported.




Hovering over an image, whether in the selection window or in a Preview Window will allow you to scroll through the image series using your middle mouse scroll wheel. (The image series will scroll in both the selection window and the Preview Window.)


You may also scroll through a series by right-clicking and dragging up and down on the image in either window.

Left-clicking and dragging in either window will allow you to adjust the window width and level values of the image series.



Right-clicking (without dragging) will bring up this menu of options.

Preview—This works the same as the  described above. It opens a Preview Window with the image series.

Import Volume— This will import the image series into Anatom-e® the same as if you had used the  .

Properties— This will display the DICOM data for the current image shown when selected. You can open the DICOM properties for multiple images at the same time if you wish.

Image Type	ORIGINALPRIMARYOTHER
SOP Class UID	1.2.840.10008.5.1.4.1.1.4
SOP Instance UID	1.2.840.113619.2.134.17.62891809.1812.1298587322.466
Acquisition Date	20110308
Acquisition Time	180808
Acquisition Number	0
Patient Position	HFS
Patient Orientation	
Image Position Patient	-129.135.972641i-0.0541989903
Image Orientation Patient	1.0i0.0i1.0
Instance Number	58
Photometric Interpretation	MONOCHROME2
Pixel Spacing	0.976800.9766
Slice Thickness	1.799999952
Rows	256
Columns	256
Bits Allocated	16
Bits Stored	16
High Bit	15
Pixel Representation	1
Smallest Image Pixel Value	
Largest Image Pixel Value	
Window Center	148
Window Width	296
Rescale Slope	
Rescale Intercept	

Back After you are done with a patient, you can return to the original Import Window screen by using the back button located at the top right corner of the Window.

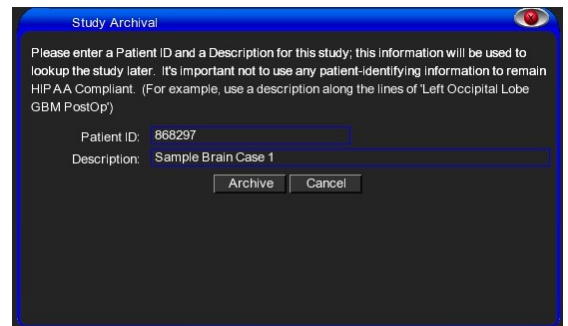
If you are ready to align and work with the files you have imported, you can close the Import Window by using the red bubble in the very top right hand corner.

Archiving

Archiving allows you to save entire studies for access in Anatom-e at a later time. Archived studies can be selected from the third box of the Import Window.

To archive a study, use the “Archive” button to the right of each study’s header.

When archiving a study, you will be asked to provide a Patient ID and Description which will be used to help you locate the study for later access. The current Patient ID value from the DICOM file is displayed by default, but you are free to change this to better suit your needs and preferences.

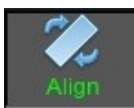
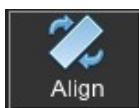


It is important not to use any patient identifying information in either field in order to remain compliant with HIPAA and other privacy regulations.

Aligning with the Anatom-e® Template



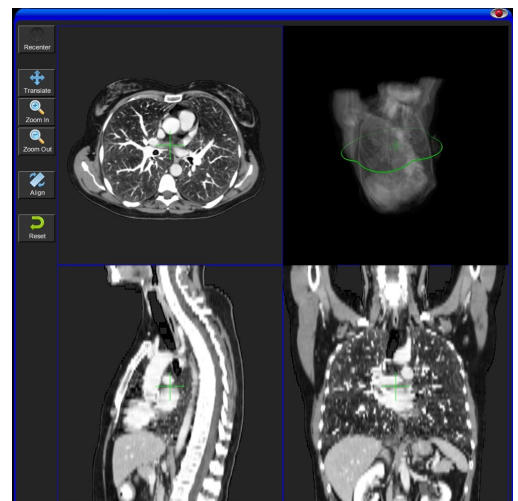
In Chapter 7 (pg. 30), we discussed the QuadView which can be opened from the Key Tab Panel.



Using the QuadView’s Align button, you can adjust the Anatom-e® template in axial, sagittal and coronal views, allowing for the




best possible fit with your patient’s imported scans.

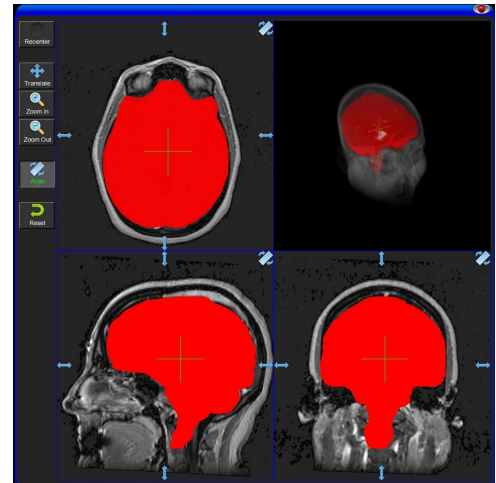
Merging Anatom-e®’s detailed template will help you to view, identify, and understand more aspects of your patient’s images at a faster pace and to a more in-depth degree.



To move the template in any of the three standard views, left-click and drag. Adjustments made in any of the views will be reflected in all of the views.

There are also five controls in each of the standard views that manipulate the template in that view.

-  **Stretch Horizontal**—Stretches and squashes the template along the horizontal axis. Found on the right and left of the view.
-  **Stretch Vertical**—Stretches and squashes the template along the vertical axis. Found on the top and bottom of the view.
-  **Rotate**—Rotates the template. Found in the upper right corner of the view.




The effects of these controls vary by the view they are used in.

Axial—The horizontal axis corresponds with the X-axis. The vertical axis corresponds with the Y-axis. The template is rotated around the Z-axis.

Sagittal—The horizontal axis corresponds with the Y-axis. The vertical axis corresponds with the Z-axis. The template is rotated around the X-axis.

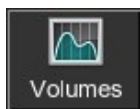
Coronal—The horizontal axis corresponds with the X-axis. The vertical axis corresponds with the Z-axis. The template is rotated around the Y-axis.

You may find it helpful to activate Wireframe mode while aligning. You can do this by using the “Wire” button from the Controls Tab Panel. (Chapter 6, pg. 22)



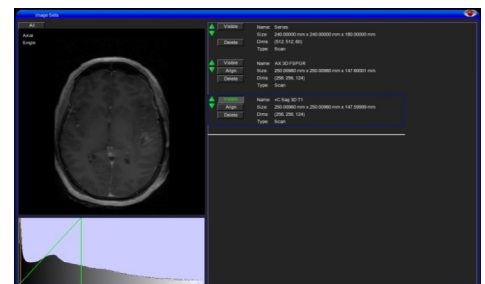
Wire

Volumes



Clicking the Volumes button will bring up the Image Sets Window. This window allows you to make adjustments to the scans you have imported.

The list on the right side of the window shows all the scans that you have imported, as well as the standard Anatom-e® scans.

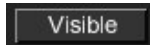


	Visible	Name: AX 3D FSPGR
	Align	Size: 250.00960 mm x 250.00960 mm x 147.60001 mm
	Delete	Dims: (256, 256, 124)
		Type: Scan

The list entry for each scan includes the Name, Size, Dimensions and Type.

The scan at the top of the list is the “base scan” and the one at the bottom is the “top scan.” The list order can be changed using the green arrows to the left of each entry. By default, the “base scan” is the standard Anatom-e® scan series.





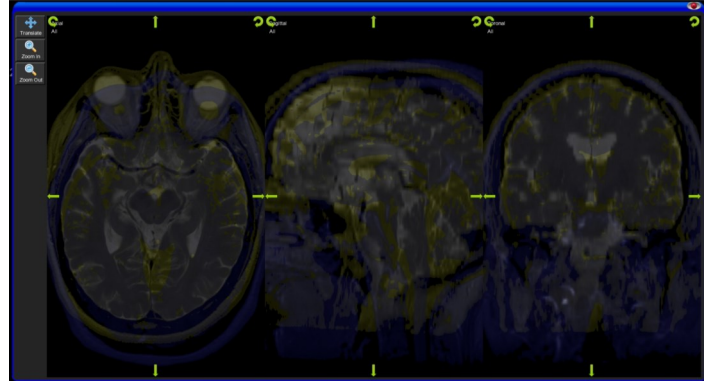
Visible—This button is used to determine if a scan series will be visible in the Main Screen or not. Scan series must be visible to be volume rendered. Multiple series can be visible at the same time.



Align—This button allows you to align a scan series with the “base scan” series.

Clicking it will bring up the alignment window you see here with the two series displayed in axial, coronal and sagittal views. The “base” series is shown in yellow and the series you are aligning is shown in blue.

To move the blue series in any of the three views, left-click and drag.



There are also six controls in each view that move the template in that view.



Up—Clicking this arrow will move the blue series up. Clicking and dragging up will do the same. Clicking and dragging down will move the series down. Found at the center top of each view.



Down—Clicking this arrow will move the blue series down. Clicking and dragging down will do the same. Clicking and dragging up will move the series up. Found at the center bottom of each view.



Left—Clicking this arrow will move the blue series left. Clicking and dragging left will do the same. Clicking and dragging right will move the series right. Found at the center left of each view.



Right—Clicking this arrow will move the blue series right. Clicking and dragging right will do the same. Clicking and dragging left will move the series left. Found at the center right of each view.



Rotate Clockwise—Clicking this arrow will rotate the blue series clockwise. Clicking and dragging up or right will do the same. Clicking and dragging down or left will rotate the series counter-clockwise. Found at the top right of each view.



Rotate Counter-Clockwise—Clicking this arrow will rotate the blue series counter-clockwise. Clicking and dragging down or left will do the same. Clicking and dragging up or right will rotate the series clockwise. Found at the top left of each view.

Adjustments made in any of the views will be reflected in all of the views. The horizontal and vertical axes of each view are the same as those described on page —.



The “Translate” button in this window allows you to adjust the position of both image series in a view. To do this, click the button, and then click and drag to adjust the position of the images. Click the button again to deactivate this function.



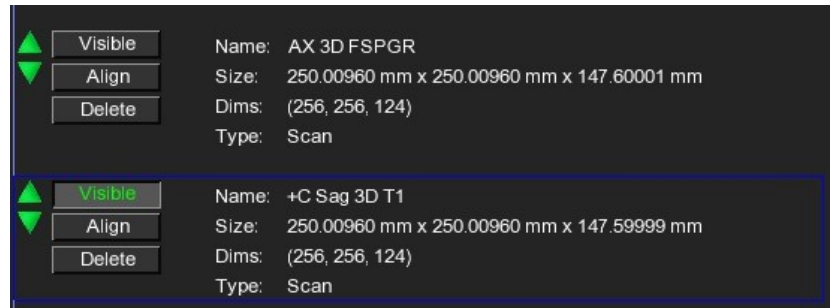
The “Zoom In” and “Zoom Out” buttons will zoom in or out on the center point of all three views when clicked.

Delete

Delete— This button removes the imported scan series from the list. In order to work with that scan series again, you will need to reimport it.

A blue box indicates the scan series which is currently selected.

Clicking on any of the series' names will select that series.



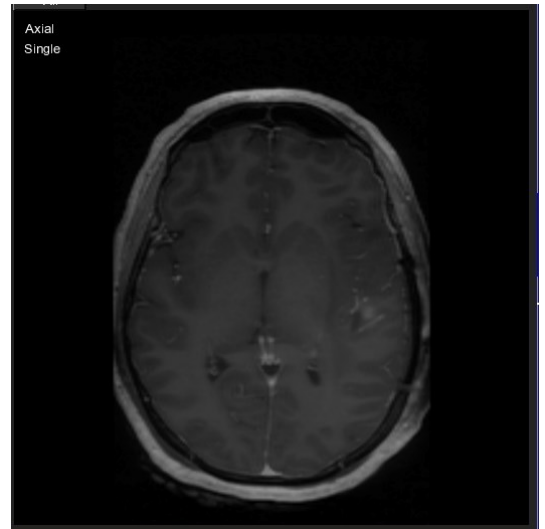
The axial preview window on the left has two settings.

Single Mode—The preview window displays the current scan series in axial view.

All

All Mode—This setting can be turned on using the all button in the top left corner of the window. This mode displays all scan series that are currently marked “Visible.” The “base scan” is displayed at the bottom of the stack, with the “top scan” displayed on top, closest to the viewer.

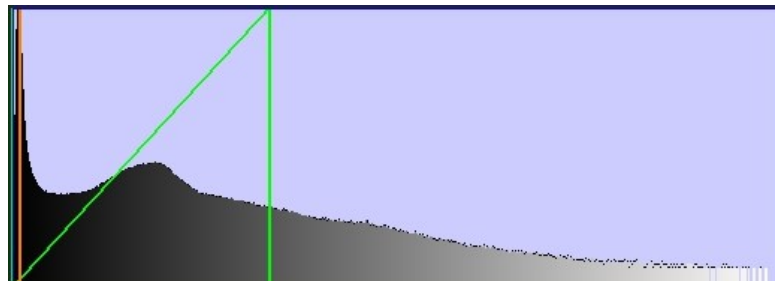
In both modes, you can scroll through the scan slices with your middle mouse scroll wheel, or by clicking and dragging up or down on the preview window.



Histogram of Gray Scale

At the bottom left of the window, you can see the Histogram of Gray Scale for the currently selected scan series.

This histogram allows you to adjust the window width and level of the scan series with the use of three adjustable lines.




Green Left— The left green line allows you to set the highest color values, the line and any values to the left of it will appear black.

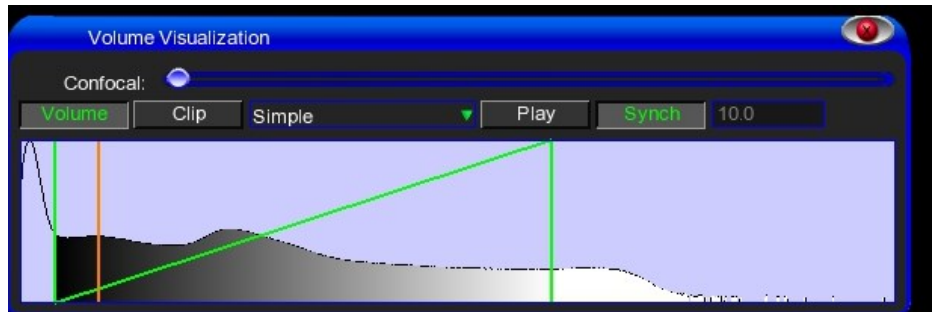
Green Right— The right green line allows you to set the lowest color values, the line and any values to the right of it will appear white.

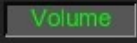
Orange—The orange line allows you to make dark values transparent. Any values to the left of the orange line will appear transparent.

Volume Rendering

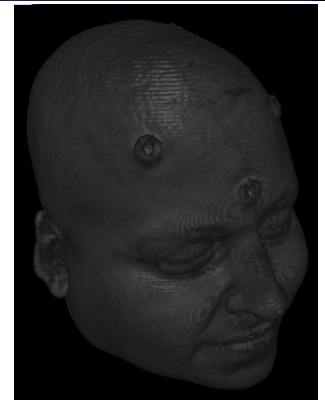
 Right clicking on the “Volumes” button will bring up a menu option for the Volume Rendering Window, which opens the “Volume Visualization” Window.

The main portion of the Volume Visualization window is another copy of the Histogram of Gray Scale (pg. 66) for the scan series that is currently selected in the Image Sets Window.



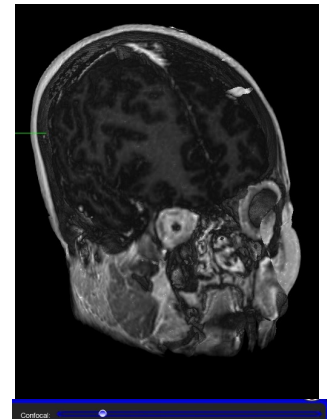
 To use the volume rendering tools in Anatom-e®, you first need to turn on the volume view using the Volume button on the left side of the window. By default this button is turned off when you first open the Anatom-e® program.


Turning this on changes the 3D view from its normal semi-transparent appearance to a solid reconstruction of the scan data. In some cases, you will even be able to see your patient’s recognizable face.

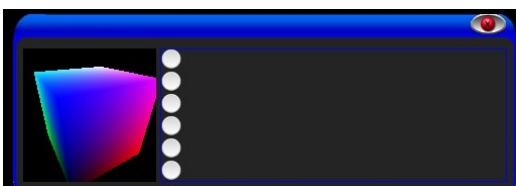


Confocal—The Confocal tool provides a unique way to view the inner portions of the volume created from the scan series. It cuts away portions of the volume based on the user’s viewpoint and the current orientation of the volume.

The slider at the top of the Volume Visualization Window controls the depth of the Confocal tool. By default, the control knob appears all the way to the left of the slider line. As you move the slider to the right, you will begin to “peel away” the volume and see additional information, as shown here.



 **Clip**—This tool allows you to cut away portions of the volume to view the inner portions.

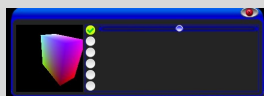


Clicking the Clip button will bring up a window with six check bubbles. Each of the check bubbles corresponds to slicing the volume along a specific plane, starting at a specific side of the volume. The cube displayed to the left of the check bubbles

provides an illustration of the current clipping applied to the volume.

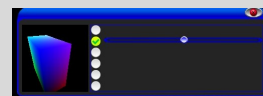
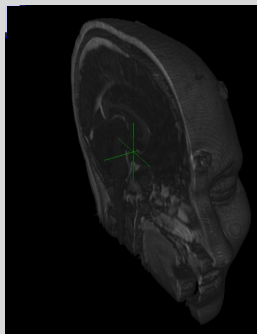
When each check bubble is activated, it brings up a slider that controls how far along the plane the volume is sliced. By default, each slider starts at the midpoint of its line. The sliders are described on the next page.

Multiple sliders can be active at a time.



1. Sagittal from Right—

The first clip plane cuts the volume along the Sagittal plane, starting from the patient's right.



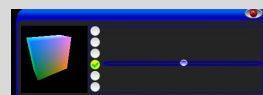
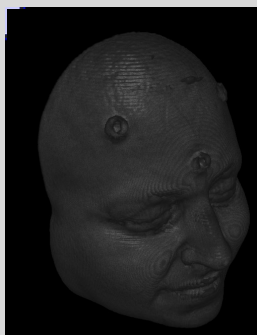
2. Sagittal from Left—

The second clip plane cuts the volume along the Sagittal plane, starting from the patient's left.



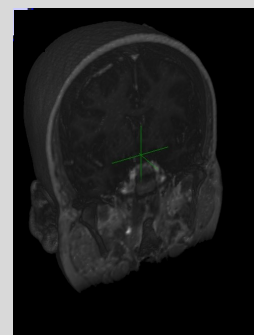
3. Coronal from Back—

The third clip plane cuts the volume along the Coronal plane, starting from the patient's back.



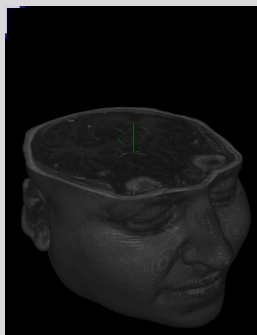
4. Coronal from Front—

The fourth clip plane cuts the volume along the Coronal plane, starting from the patient's front.



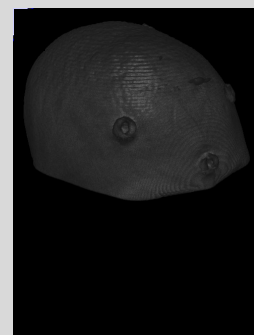
5. Axial from Top—

The fifth clip plane cuts the volume along the Axial plane, starting from the top.



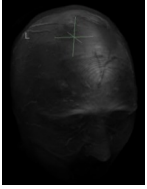
6. Axial from Bottom—

The sixth clip plane cuts the volume along the Axial plane, starting from the bottom.

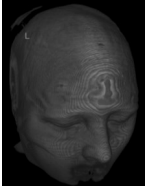


Simple ▼

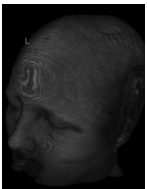
There are three available volume rendering methods in Anatom-e®, which can be selected from the drop down in the middle of the Volume Visualization Window. The default choice is “Simple.”



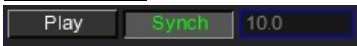
- *MIP*—MIP stands for Maximal Intensity Projection. This renders the portions of the scan series which have the highest white values. This is useful for visualizing higher density structures such as bone, or contrast filled arteries and veins.



- *Unmodified*—This setting will render the volume based on the default values in the scan series, ignoring any changes or modifications you may have made to the window width and level values using the Histogram of Gray Scale.



- *Simple*—This default setting renders the volume while taking into account any changes or modifications you may have made to it's values.



It is possible to view volume representations of multiple scans in an alternating series, using the Play button. This button will display each series that has been marked as “Visible” on the Image Sets Window as a volume, alternating between them at a specified frame rate. The frame rate is set in the box to the right of the Synch button. The default frame rate is 10.0.

The Synch button, when activated, will apply the same window width and level values to all of the scan series.

If you have any questions or comments about the contents of this manual or the operation of the Anatom-e® program, contact your Anatom-e® account representative.