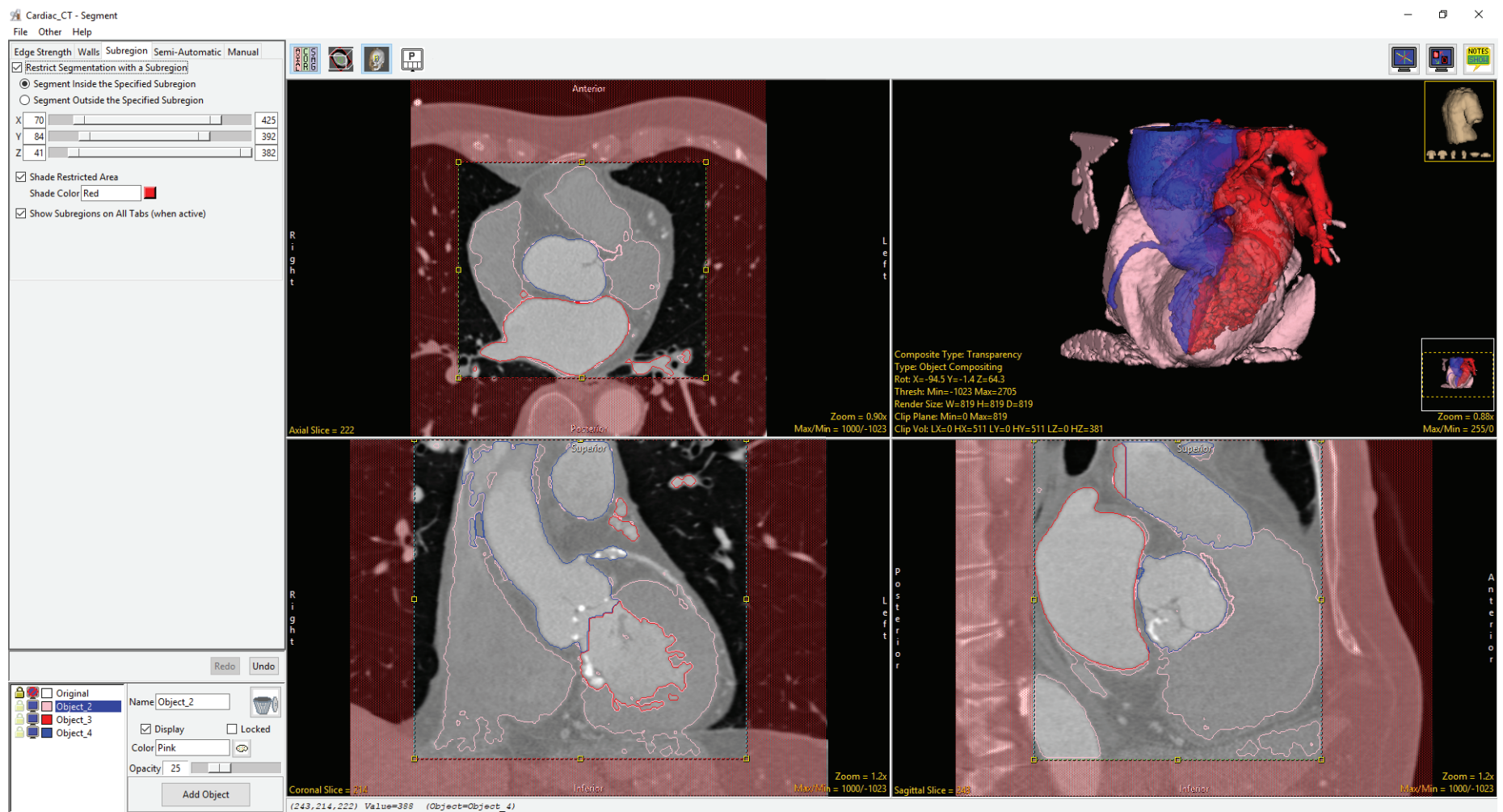# Subregion

Subregion allows users to limit segmentation to a specific user-defined region. This tool is particularly useful when segmenting a structure of interest, such as the hippocampus, without having to crop the original image data.
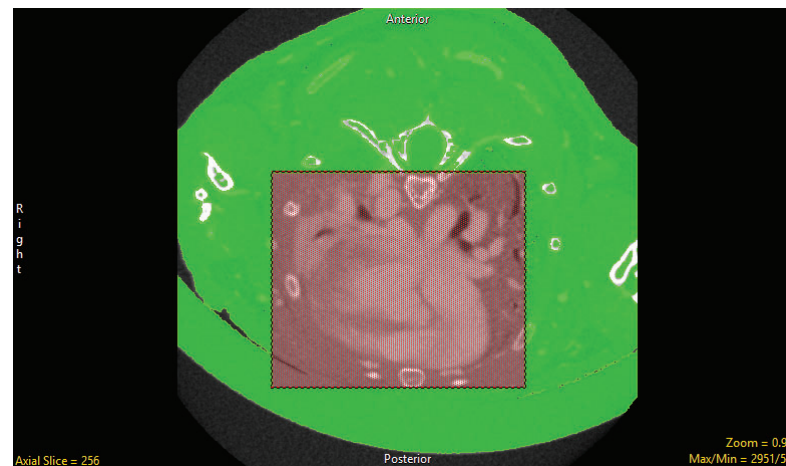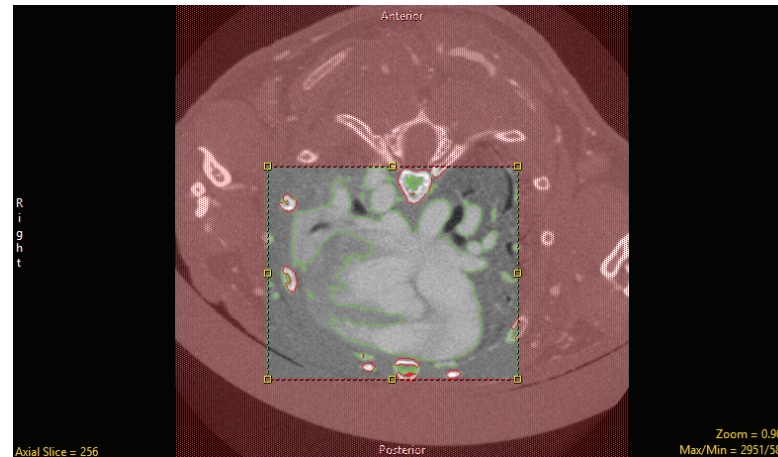
Subregion Options

Subregion can be used with the Threshold Volume, Region Grow, Connected Components, Object Extractor and Object Separator Semi-Automatic tools. Subregion can also be used in conjunction with the Edge Strength and Wall tools.
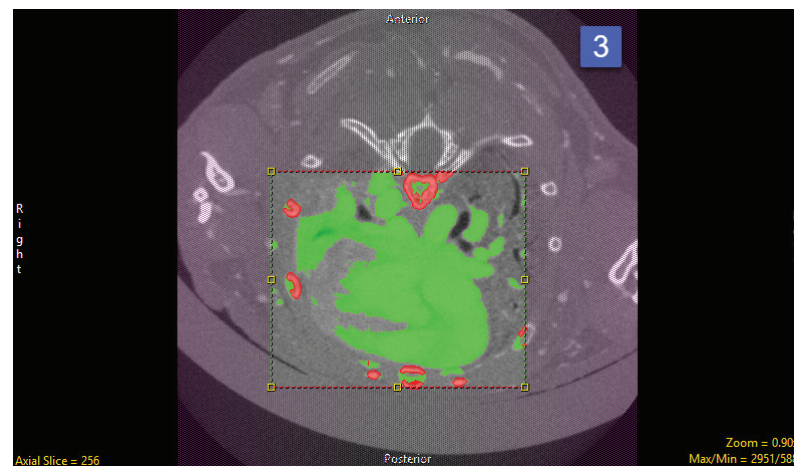
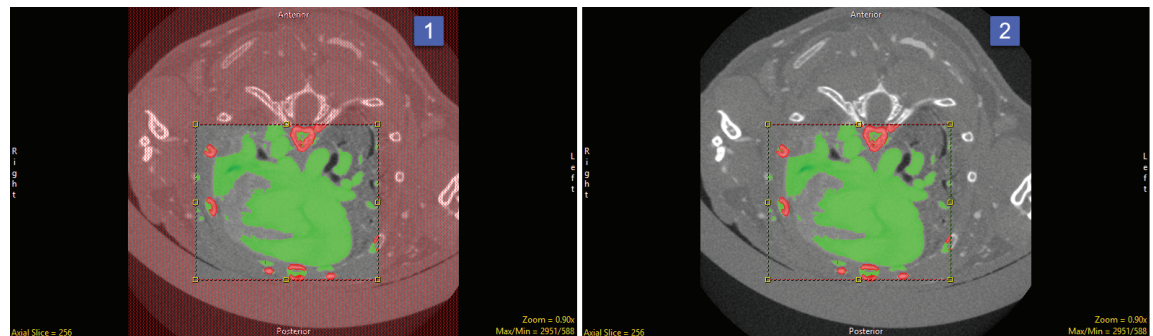**Restrict Segmentation with a Subregion:** When checked enables subregion restriction of semi-automatic and manual segmentation tools. The following options are available:

- Segment Inside the Specified Subregion: Allows users to segment within the specified subregion.

- Segment Outside the Specified Subregion: Allows users to segment outside the specified subregion.

Subregion Options (continued)

- X Slider: Allows users to define the extent of the subregion in the X orientation.

- Y Slider: Allows users to define the extent of the subregion in the Y orientation.

- Z Slider: Allows users to define the extent of the subregion in the Z orientation.

- Shade Restricted Area: Allows users to switch on shading [1] for the restricted area or switch off shading [2] for the restricted area.

- Shade Color: Allows users to change the color of the restricted area [3] by typing a color in the color field area or by selecting a color using the color section option.

- Segment Outside the Specified Subregion: Allows users to segment outside the specified subregion.

- Shade Color: Allows users to change the color of the restricted area [3] by typing a color in the color field area or by selecting a color using the color section option.

Setting a Subregion

Here we will set a Subregion to protect and limit the region when segmenting with other tools.

To follow along, download the data set EGV_MRI from analyzedirect.com/data and load into Analyze using Input/Output.

- Select the data set and open Segment.
- Select Subregion [1], and check the Restrict Segmentation with a Subregion checkbox [2].
- Choose to Segment Inside (default) or Outside the Subregion [3]
- Use the X, Y, Z sliders [4] or the yellow control points [5] to specify the Subregion in all orientations.
- The area in red will be protected as you move to the Semi-Automatic or Manual tools to segment regions of interest.