RGB Channel Manipulation

The RGB Channel Manipulation tool allows data to be converted to or from 24-bit color data. If the input is a 24-bit color file, the following options are available:

Conversions from 24-bit Options

Option	Description
Grayscale Formula	Converts the RGB values to an 8-bit grayscale image using the following formula: gray_voxel = red_voxel*.3+green_voxel*.59+blue_voxel*.11
Dithering	Converts the RGB values to 8-bit with a colormap. The number of color cells used is specified by the Number Of Colors value.
Data w/Colormap	Converts the RGB values to data with a colormap using the colors in the input data
Red Channel	Specifies that only the 8-bit red channel is used for conversion
Green Channel	Specifies that only the 8-bit green channel is used for conversion
Blue Channel	Specifies that only the 8-bit blue channel is used for conversion

Conversions to 24-bit Options

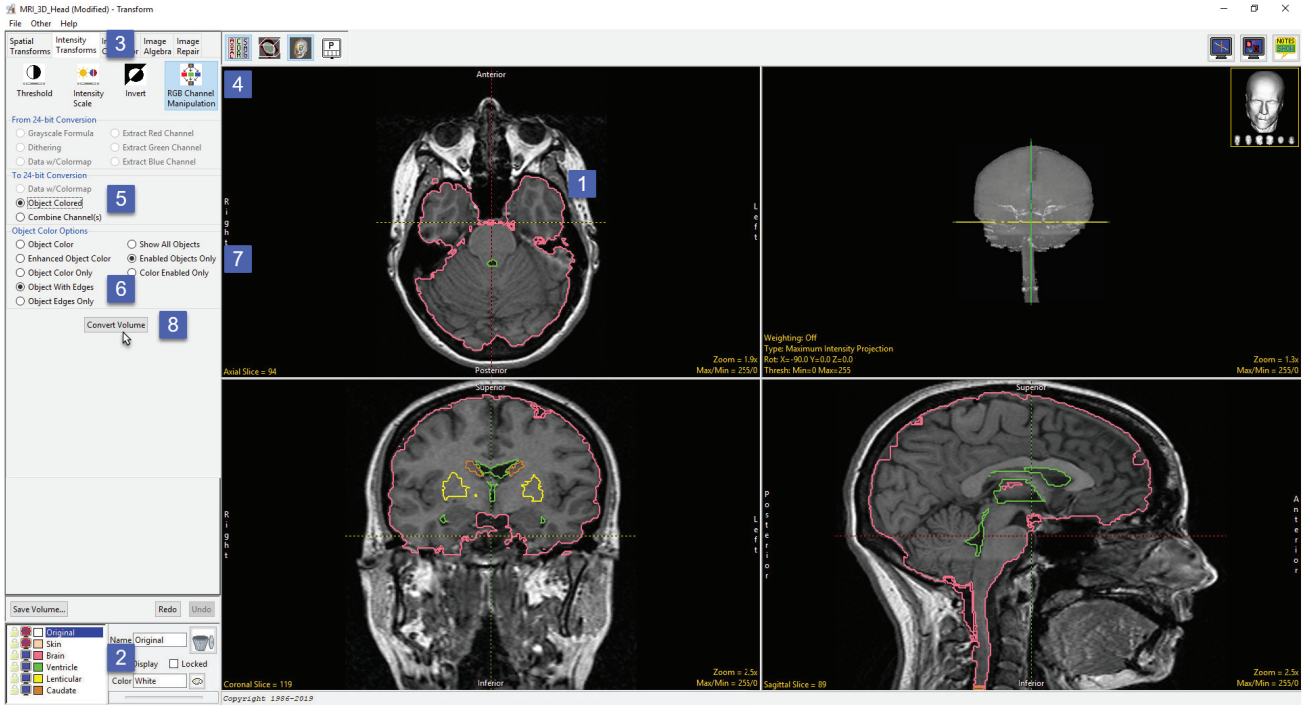
Option	Description
Data w/Colormap	Converts a data set with a colormap loaded into a 24-bit color image
Object Colored	Uses a data set and an object map to make a 24-bit data set where all the voxels have been colored using colors and definitions in the object map. Uses the following options: **Object Color:** Creates a color image displaying object color overlaid on voxels that are part of the selected objects in the object map. All other non-object voxels are removed from the image; **Enhanced Object Color:** This option is the same as the Object Color option but with enhanced (brighter) object color; **Object Color Only:** Creates a colored image representation of the grayscale image data with solid colored objects overlaid; **Object with Edges:** Creates a colored image of the grayscale data overlaid with object boundaries; **Object Edges Only:** Creates a colored image of object boundaries only; • **Show All Objects:** Uses all objects for the colored image; **Enabled Objects Only:** Uses only enabled objects for the colored image; **Color Enabled Only:** Uses only color enabled objects for the colored image.
Combine Channel(s)	Combines the red, green and blue channels into a 24-bit color image
Convert Image	Initiates the conversion process using the parameters set.

RGB Channel Manipulation (continued)

Creating an RGB Data Set

Creating an RGB dataset by fusing a grayscale input volume with its associated object map can provide a useful reference image.

To follow along, download the MRI_3D_Head.avw and MRI_3D_Head.obj data sets from analyzedirect.com/data and load into Analyze using Input/Output.



- Select the MRI-3D_Head data set and open Transform.
- In Transform select File > Load Object Map and load the MRI_3D_Head.obj. The object map will be overlaid on the grayscale image data [1].
- In the Object control window switch Off the display of the skin object and then switch On the display of the Lenticular and Caudate objects [2].
- Select the Intensity Transformation tab [3] and then select the RGB Channel Manipulation option [4].
- Under the To 24-bit Conversion select the Object Colored option [5].
- The Object Color Options will be displayed below. Select Object With Edges [6] and then select Enabled Objects Only [7]
- Click Convert Volume [8].

RGB Channel Manipulation (continued)

- Once the transformation is complete save the new RGB data set to the workspace using the Save Volume button [9].
- The image data can be saved out of Analyze using the Input/Output module.