

Exercise 4 : Load As Loading and Resizing Anisotropic

Scanner acquired data is rarely isotropic (cubic) which means that the voxel width, height, and/or depth have different sizes (most often a different slice thickness than the in-plane resolution). This exercise will demonstrate how to load an anisotropic (non-cubic) volume image with the same resolution as when acquired, and then load it again to resize the volume image to create an isotropically sampled volume (cubic) for further use in Analyze.



1. Open the **Load As** module (**File > Load As**).
2. Click **File** [A] and navigate to and select the **MRI_Head.avw** data set in the **\\BIR\images\TutorialData** directory.
3. Uncheck the **Auto Exit After Load** option [B] and click **Load**. The data will be loaded into the Analyze workspace as it was acquired (anisotropic).
4. To load the data as isotropic (cubic), select the **Resize** tab [C] (figure 1).
5. Check the **Force Cubic** option [D] and click **Load**; the data will be resampled at the cubic resolution and then loaded. The highest spatial resolution in the acquired volume image is used as the cubic resolution for resampling.
6. Two volumes are now loaded into the Analyze workspace, 'MRI_Head' and 'MRI_Head0'. The latter volume is the cubic volume. To examine the effects of this isotropic sampling, proceed to **Exercise 8: Multiplanar Sections**.
7. If a specific cubic voxel resolution is desired, the voxel size can be changed. To set the output voxel dimension to 1.5 mm, enter **1.5** in the **Output Voxel Size** field [E] and press **<Enter>**. Notice that the 'Output Axis Dimensions' and 'Memory' fields automatically adjust when the voxel dimension is changed.
8. It is also possible to set a specific dimension for the resulting volume image. For example, if you wanted an output volume with an X dimension of 200, enter 200 in the **Output X Axis Dimension** field [F] and press **<Enter>**. Again, the other parameters will automatically adjust.
9. You may encounter data sets that are too large to be accommodated by the computer on which you are running (usually due to memory limitations), particularly at the resampled cubic resolution. Specifying a maximum memory size while the Force Cubic option is checked forces each parameter to adjust to the largest value possible that still fits within the specified memory size. Enter **16** into the **Output Memory Mb** field [G].
10. Close all windows related to the Load As module before proceeding to the next exercise.

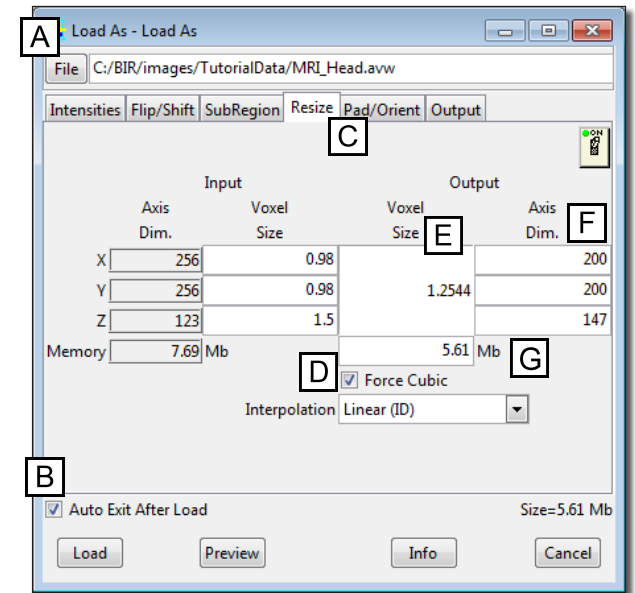


Figure 1