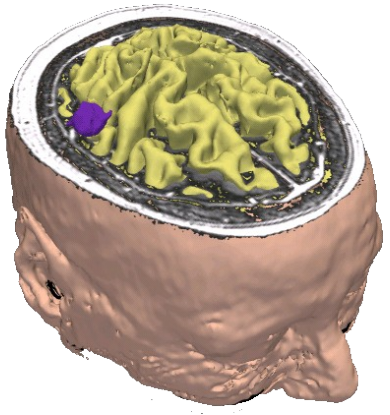
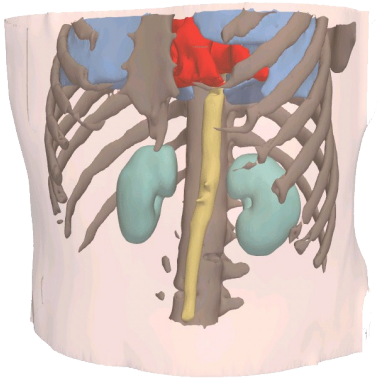
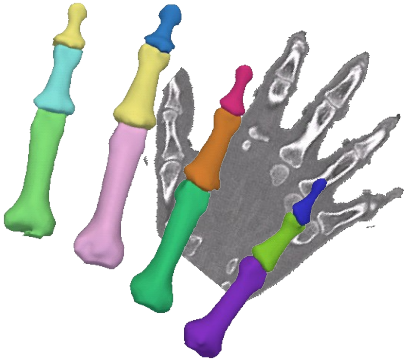
EMSegmenter Tutorial (Simple Mode)

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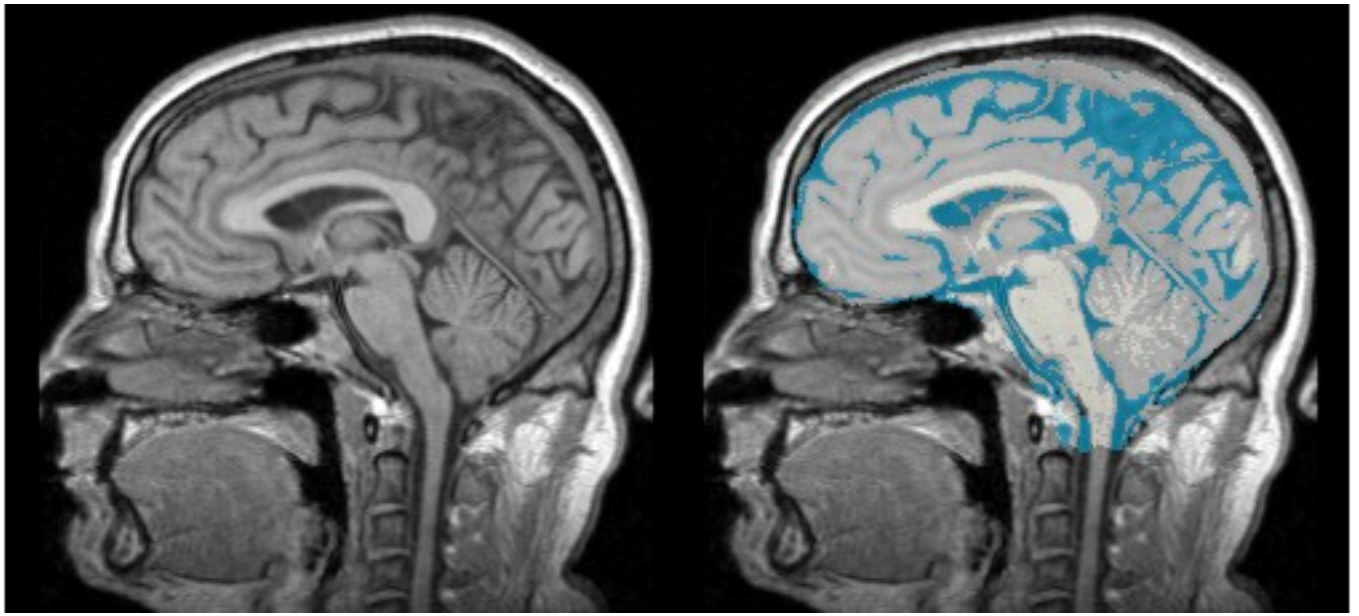
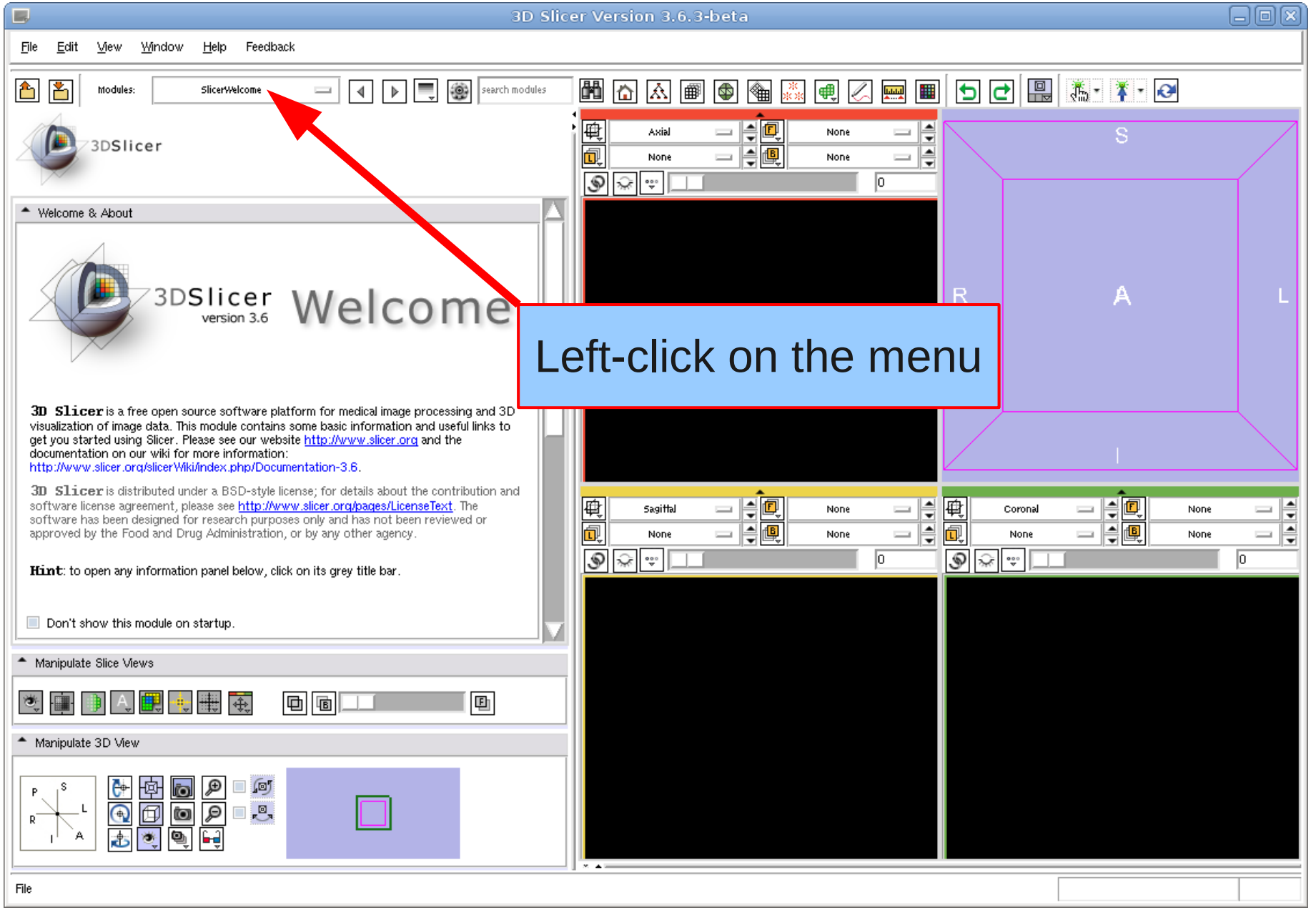
Overview

The goal of this tutorial is to apply the EMSegmenter to MRI brain scans. We will segment the clinical T1 scan shown below into grey matter, white matter, and cerebrospinal fluid.

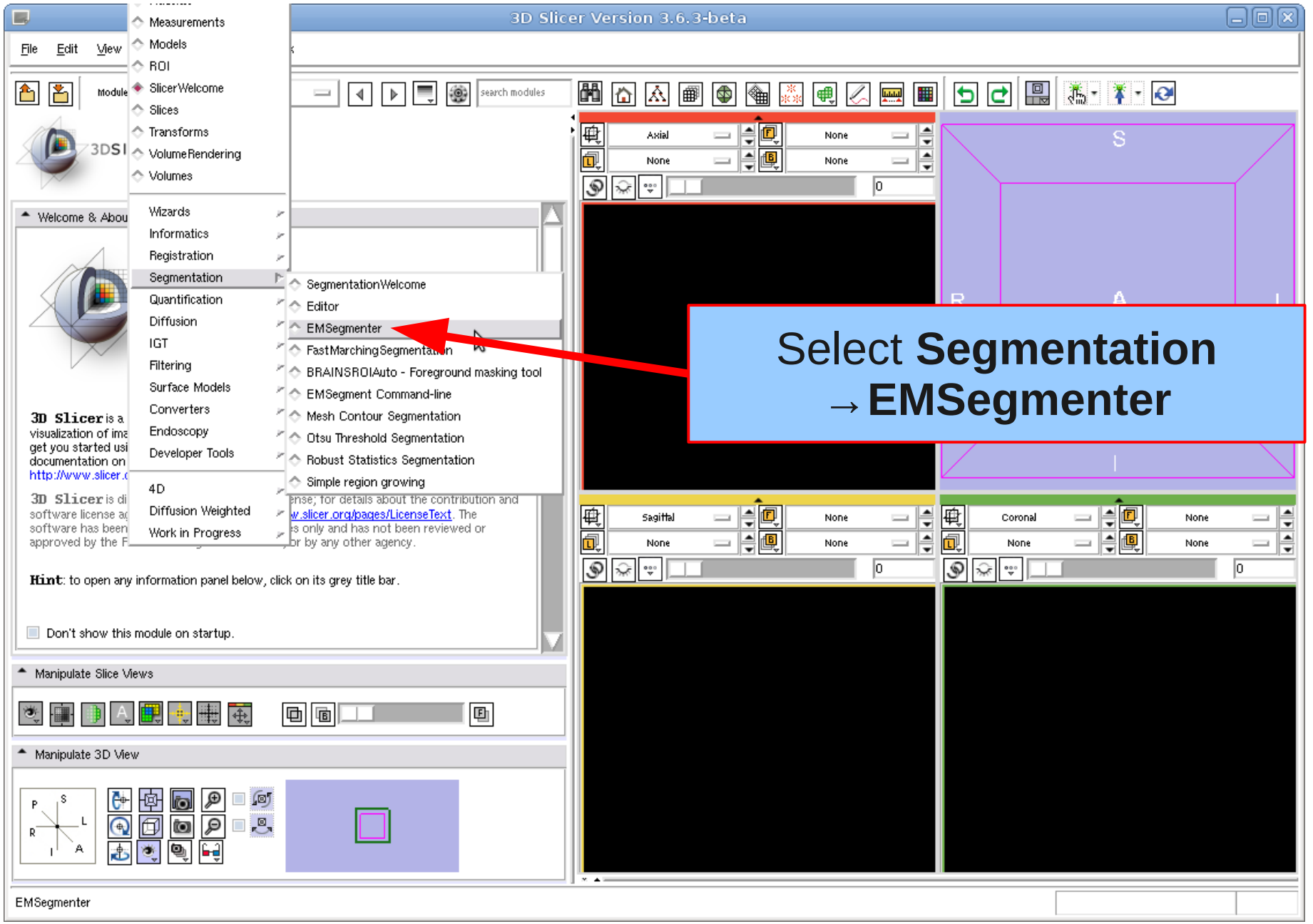
The tutorial is based on Slicer 3.6.3 .

Before  After

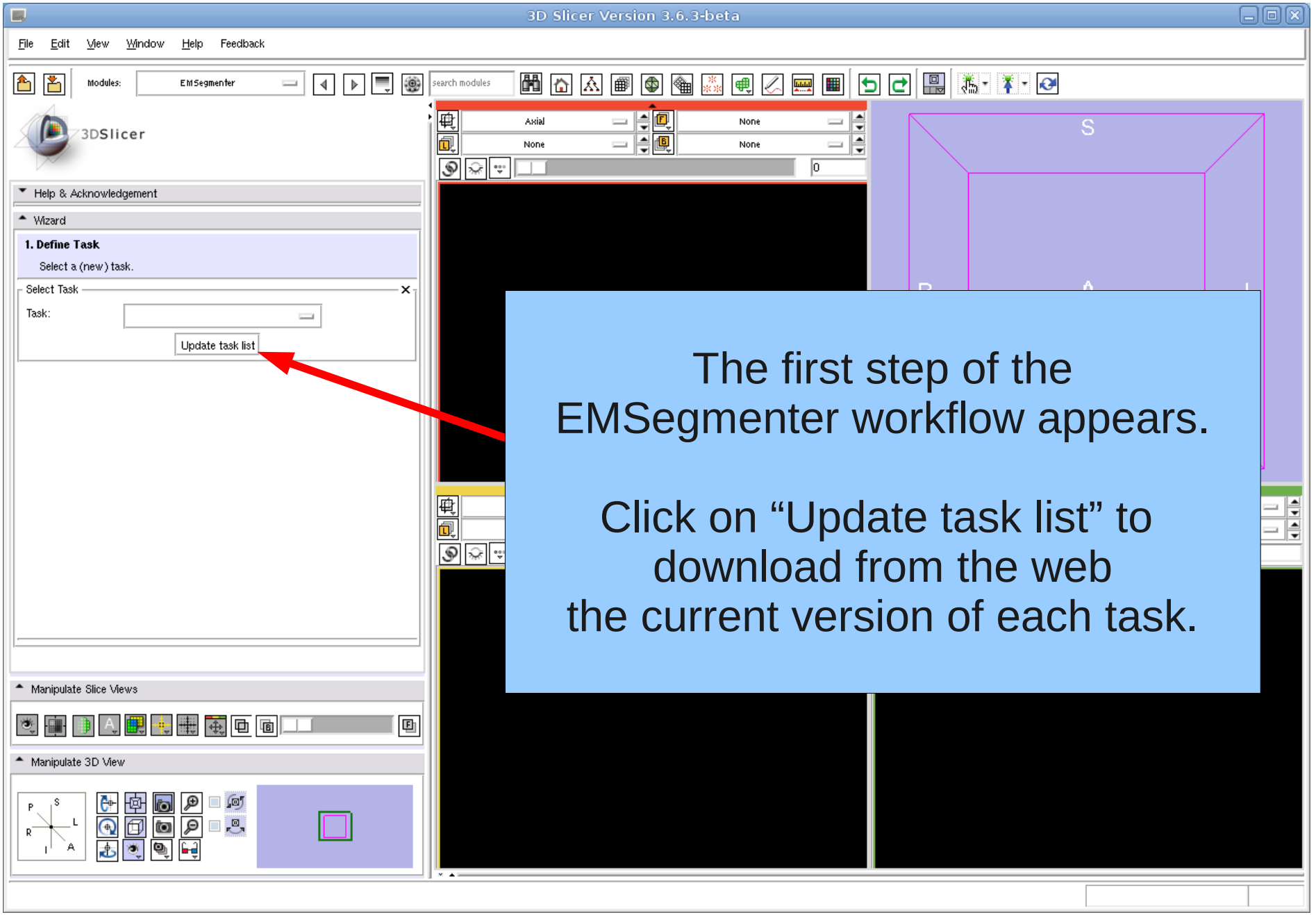
EMSegmenter (simple mode)



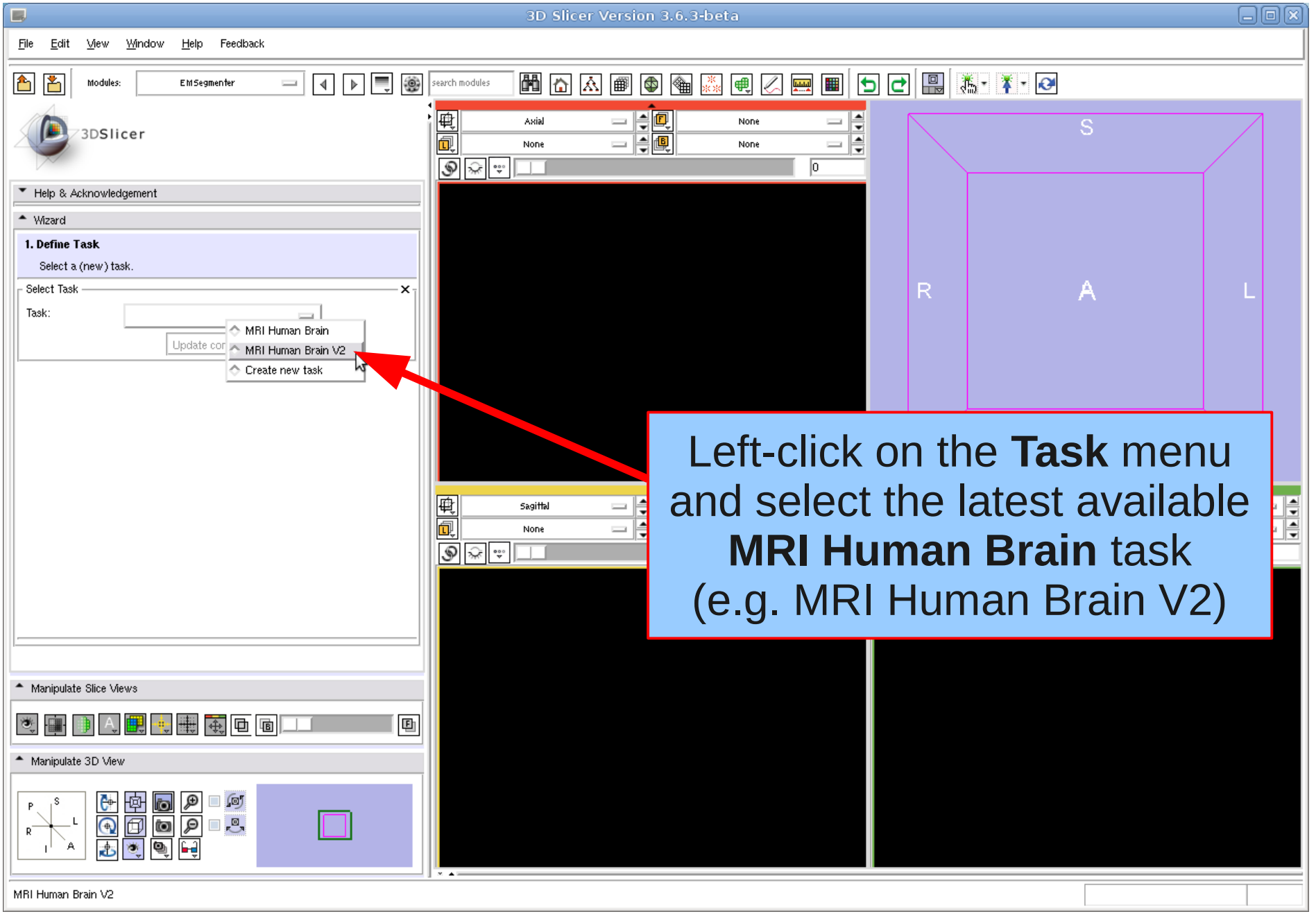
Select EMSegmenter module



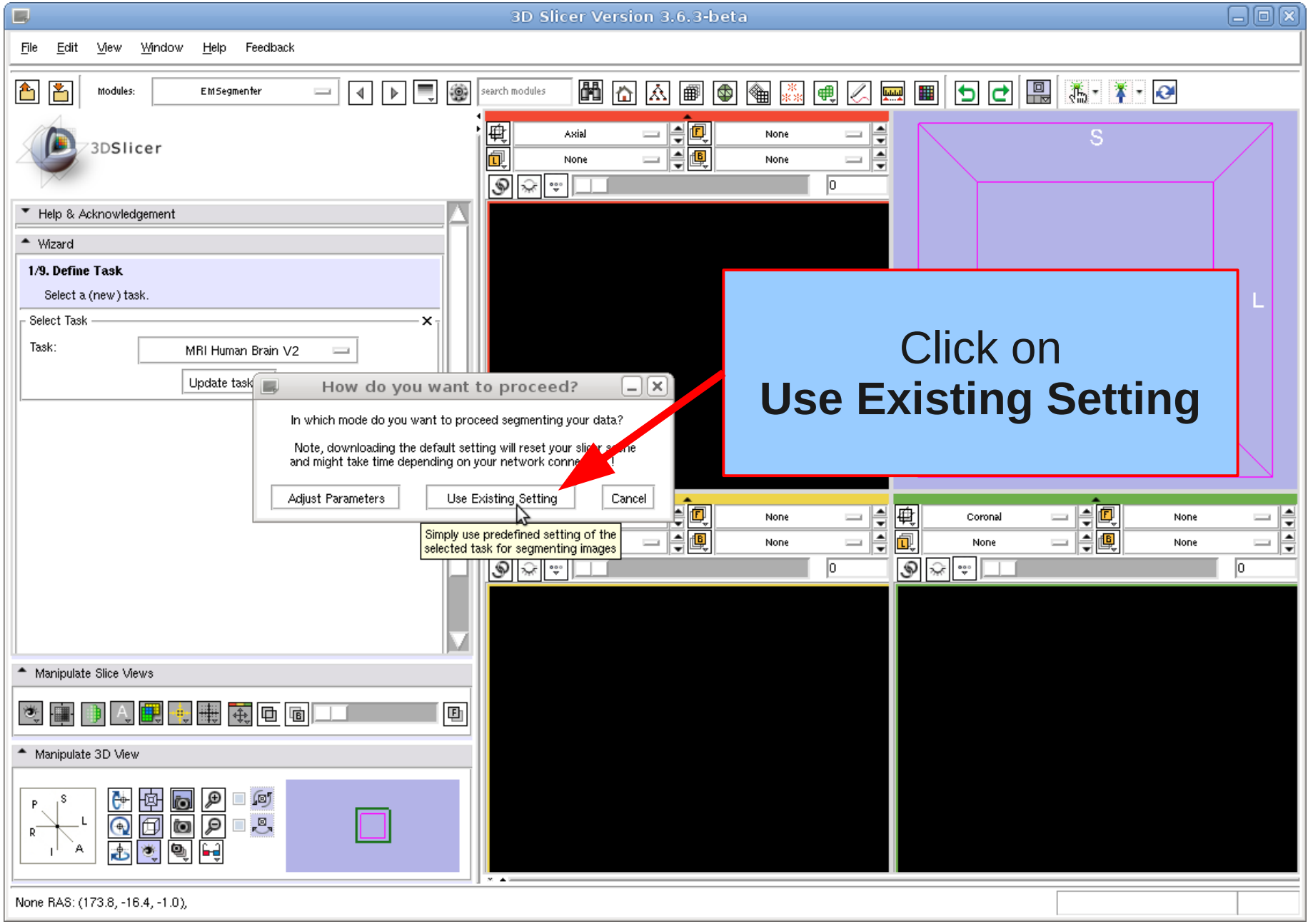
Update Task List



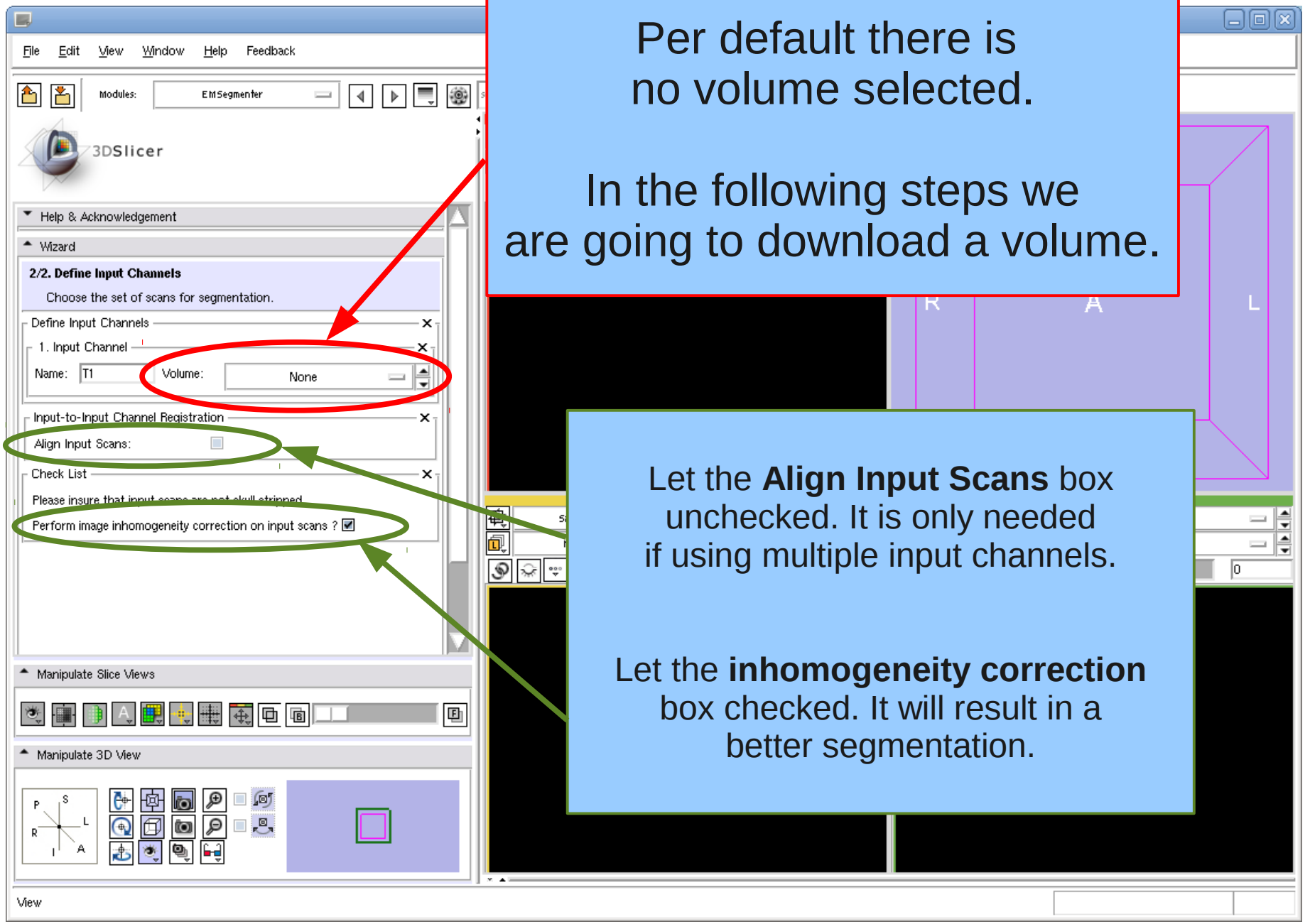
Select Task


3D Slicer Version 3.6.3-beta
File Edit View Window Help Feedback
Modules: EMSegmenter
search modules
3DSlicer
Help & Acknowledgement
Wizard
1. Define Task
Select a (new) task.
Select Task
Task:
MRI Human Brain
MRI Human Brain V2
Create new task
Update cor
Axial
None
Sagittal
S
R
A
L
Manipulate Slice Views
Manipulate 3D View
MRI Human Brain V2
Left-click on the **Task** menu and select the latest available **MRI Human Brain** task (e.g. MRI Human Brain V2)

Select Task


3D Slicer Version 3.6.3-beta
File Edit View Window Help Feedback
Modules: EMSegmenter
search modules
3DSlicer
Help & Acknowledgement
Wizard
1/9. Define Task
Select a (new) task.
Select Task
Task: MRI Human Brain V2
Update task
How do you want to proceed?
In which mode do you want to proceed segmenting your data?
Note, downloading the default setting will reset your slicer scene and might take time depending on your network connection!
Adjust Parameters
Use Existing Setting
Cancel
Simply use predefined setting of the selected task for segmenting images
Click on
Use Existing Setting
Manipulate Slice Views
Manipulate 3D View
Axial
Coronal
None
None RAS: (173.8, -16.4, -1.0),

Define Input Channels



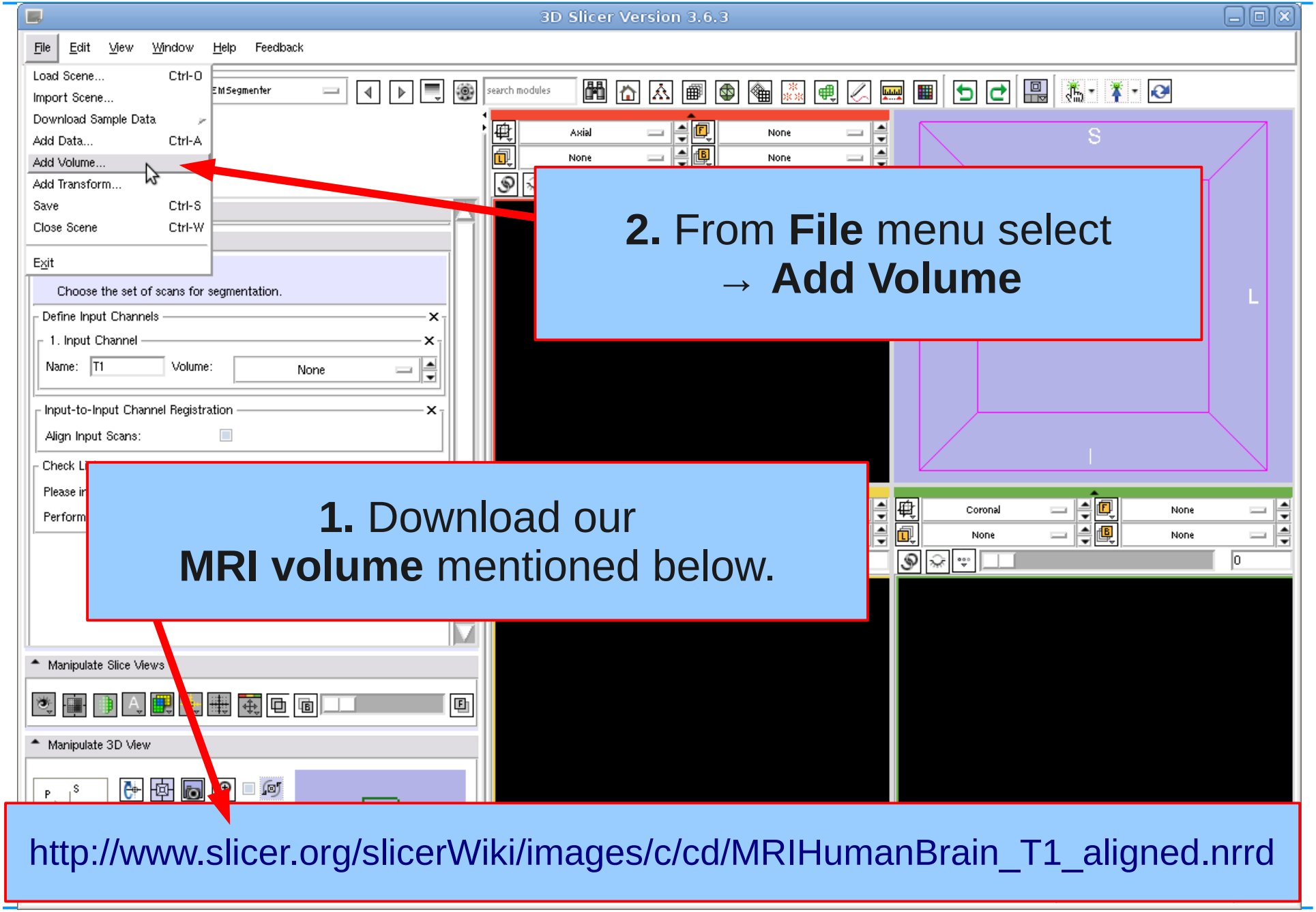
Per default there is no volume selected.

In the following steps we are going to download a volume.

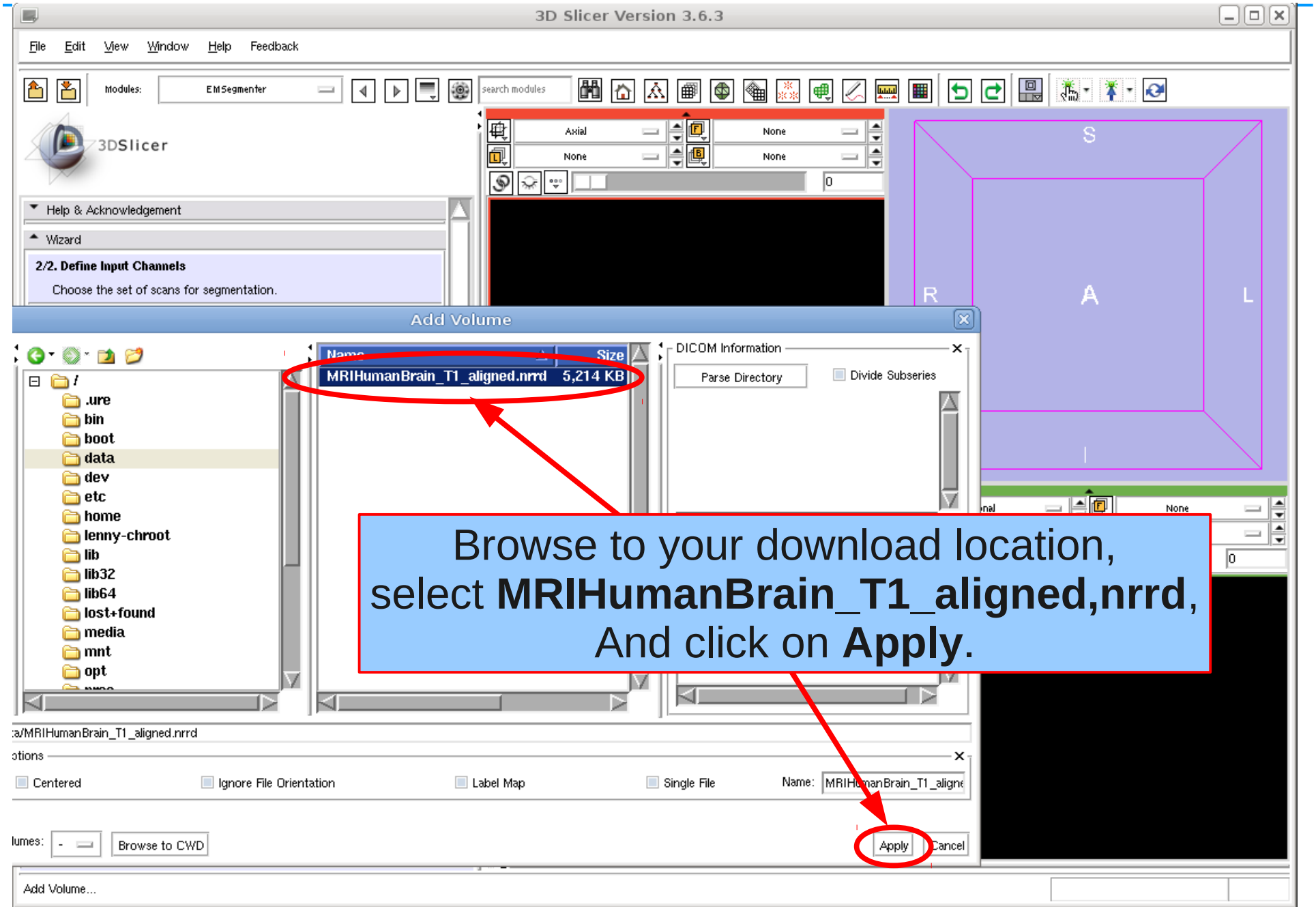
Let the **Align Input Scans** box unchecked. It is only needed if using multiple input channels.

Let the **inhomogeneity correction** box checked. It will result in a better segmentation.

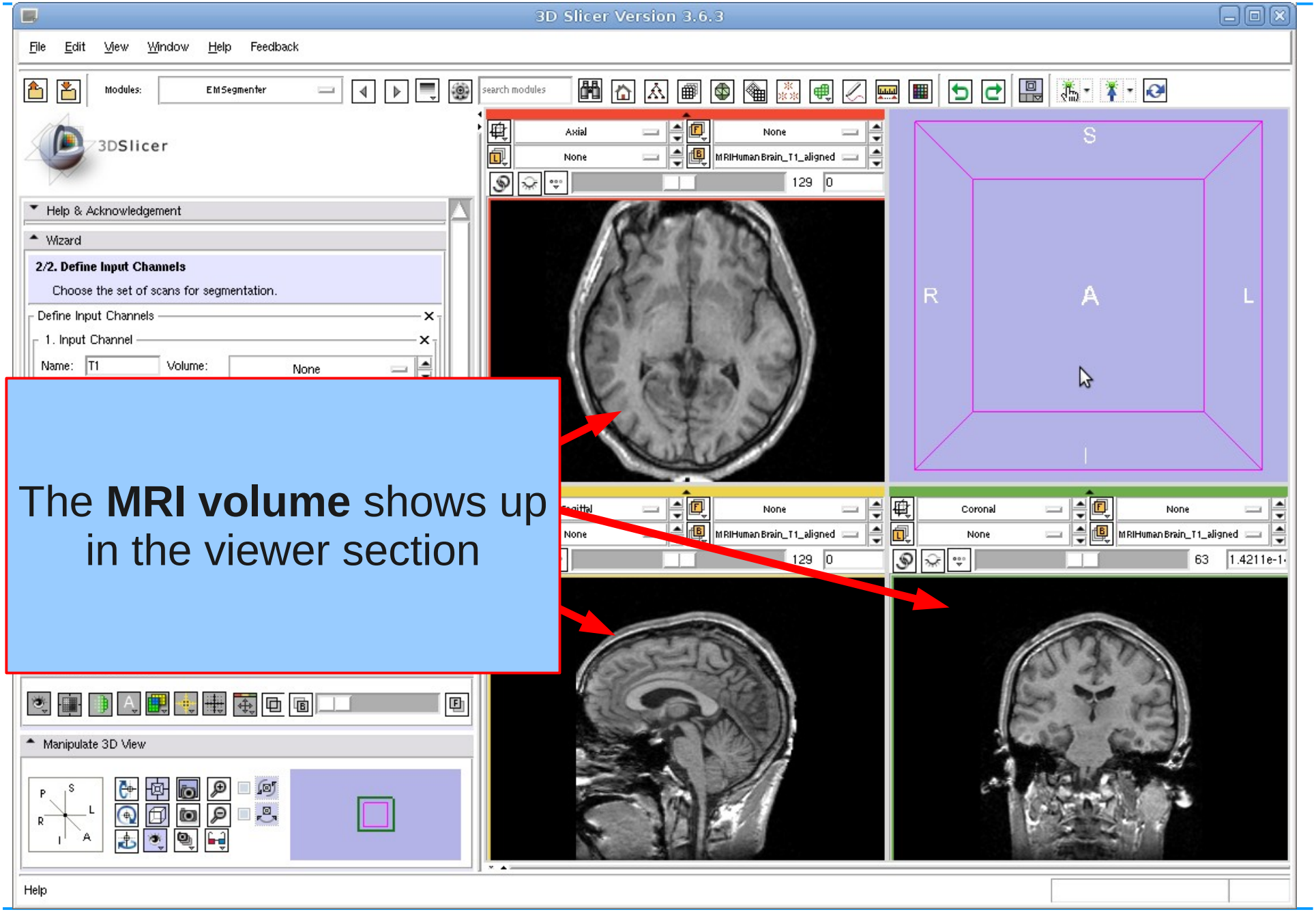
Load subject volume



Load subject volume

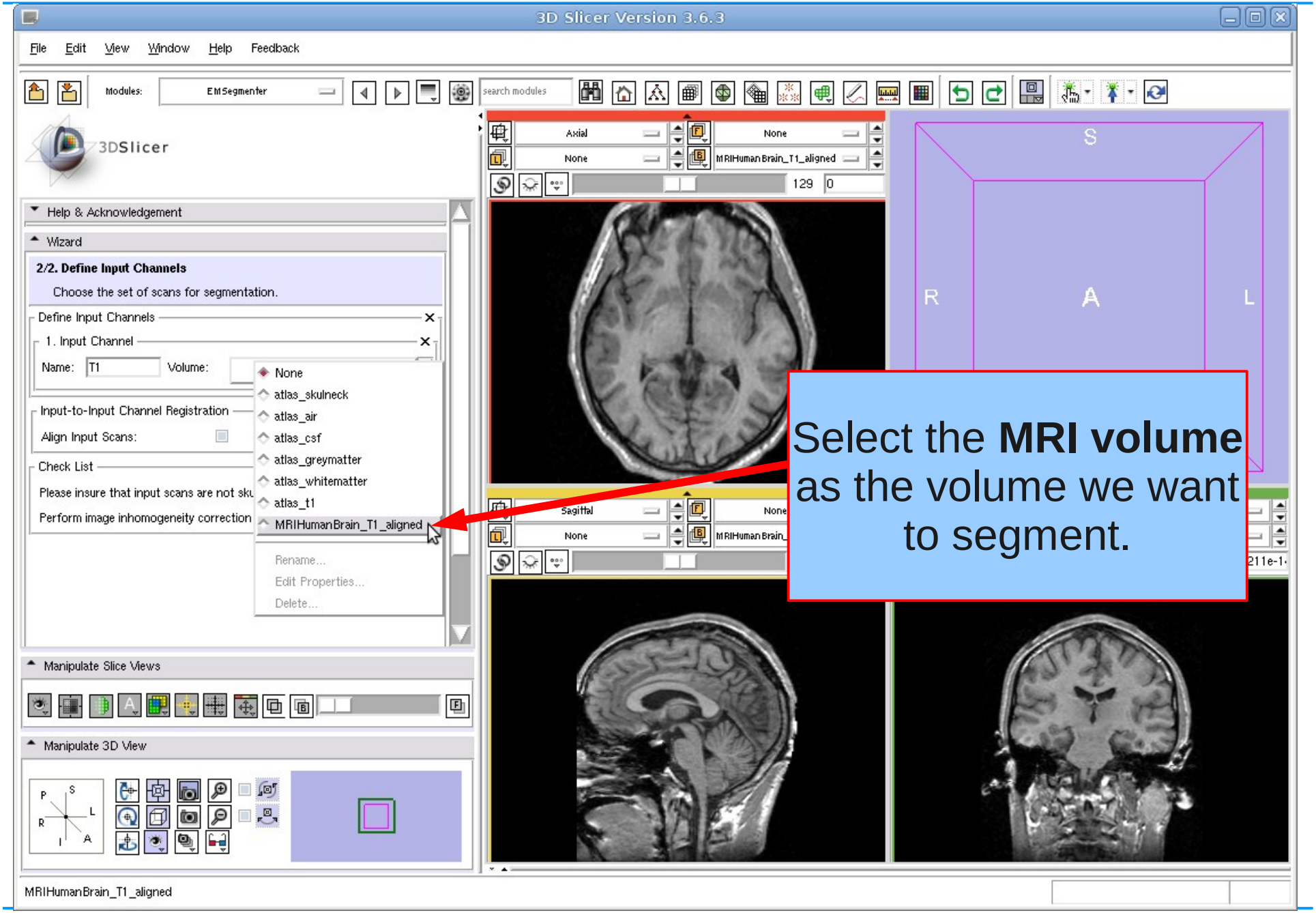


Display MRI Head

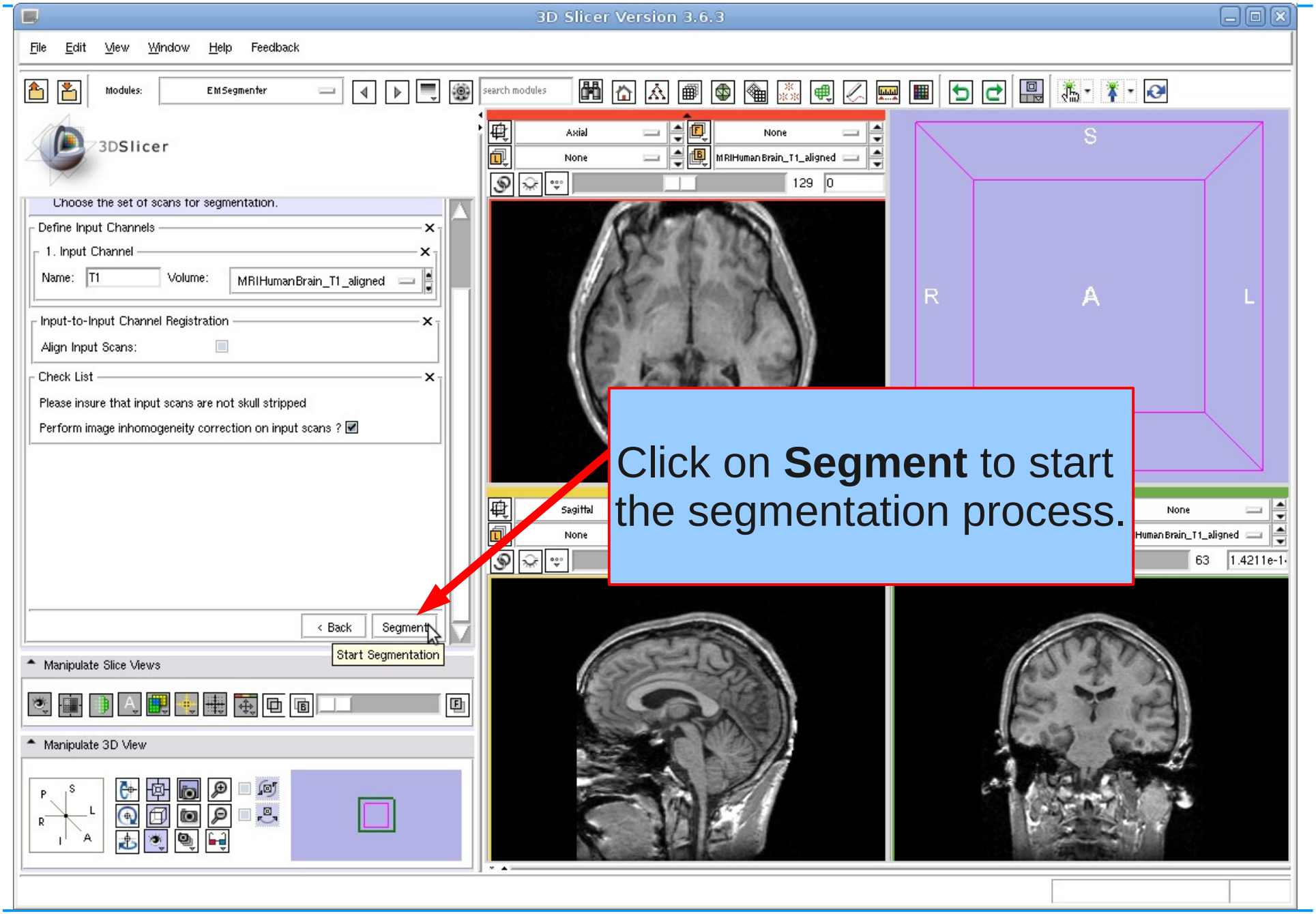


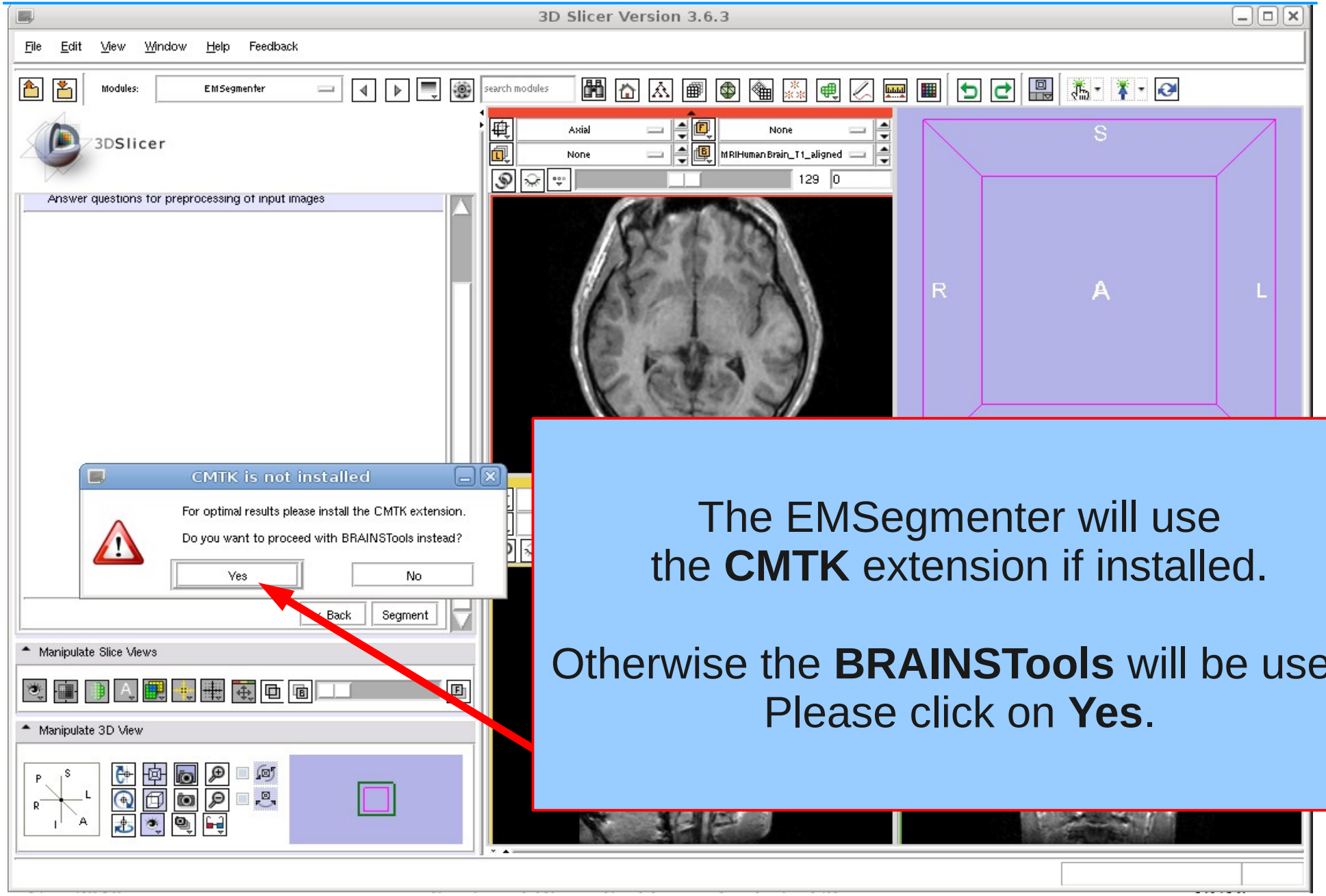
The **MRI volume** shows up in the viewer section

Define Input Channel

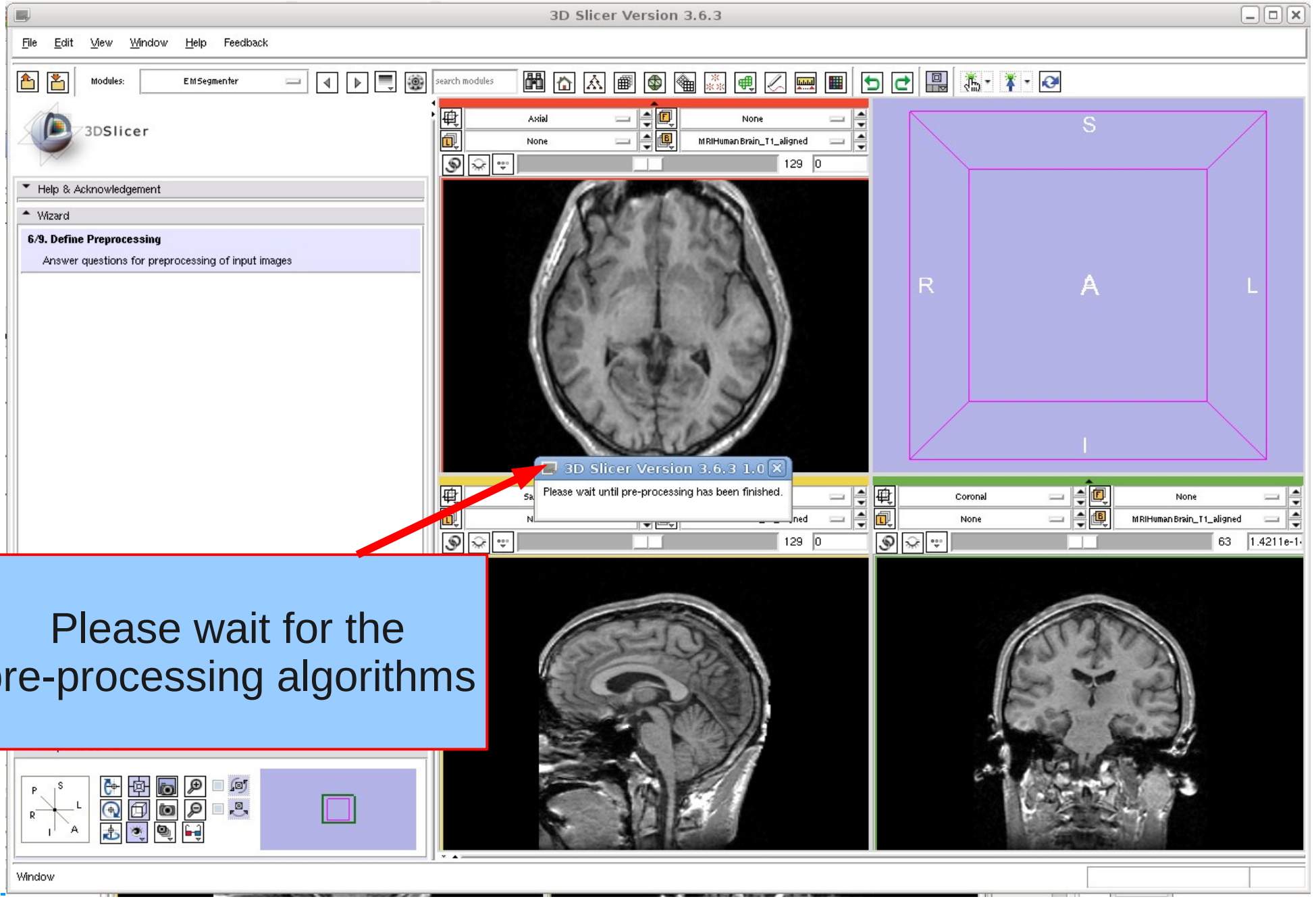


Start Segmentation



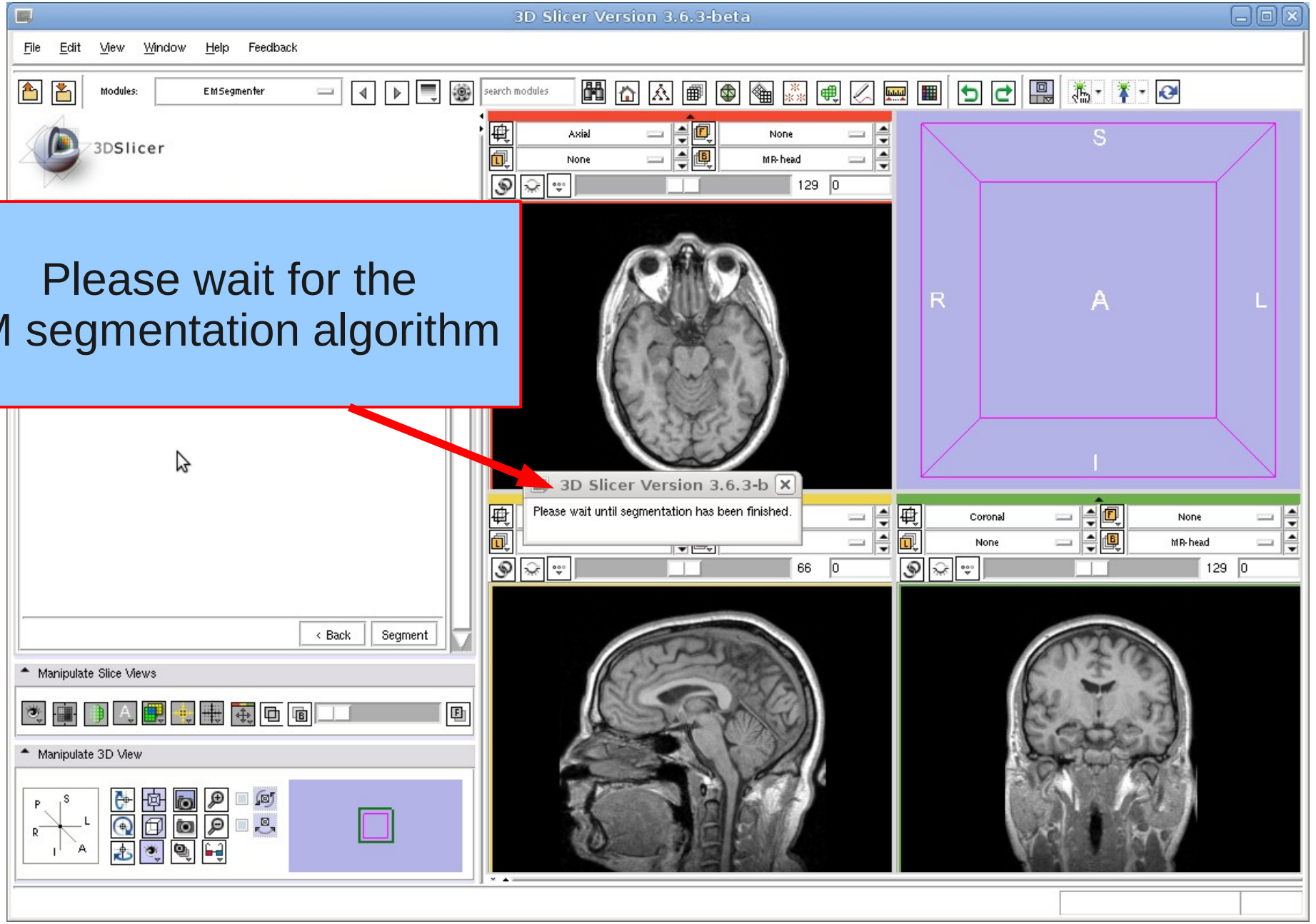

3D Slicer Version 3.6.3
File Edit View Window Help Feedback
Modules: EMSegmenter
search modules
3DSlicer
Answer questions for preprocessing of input images
Axial
None
None
MRIHuman Brain_T1_aligned
129
0
S
R
A
L
CMTK is not installed
For optimal results please install the CMTK extension.
Do you want to proceed with BRAINSTools instead?
Yes
No
Back
Segment
Manipulate Slice Views
Manipulate 3D View
The EMSegmenter will use the **CMTK** extension if installed.
Otherwise the **BRAINSTools** will be used. Please click on **Yes**.

Pre-Processing is running



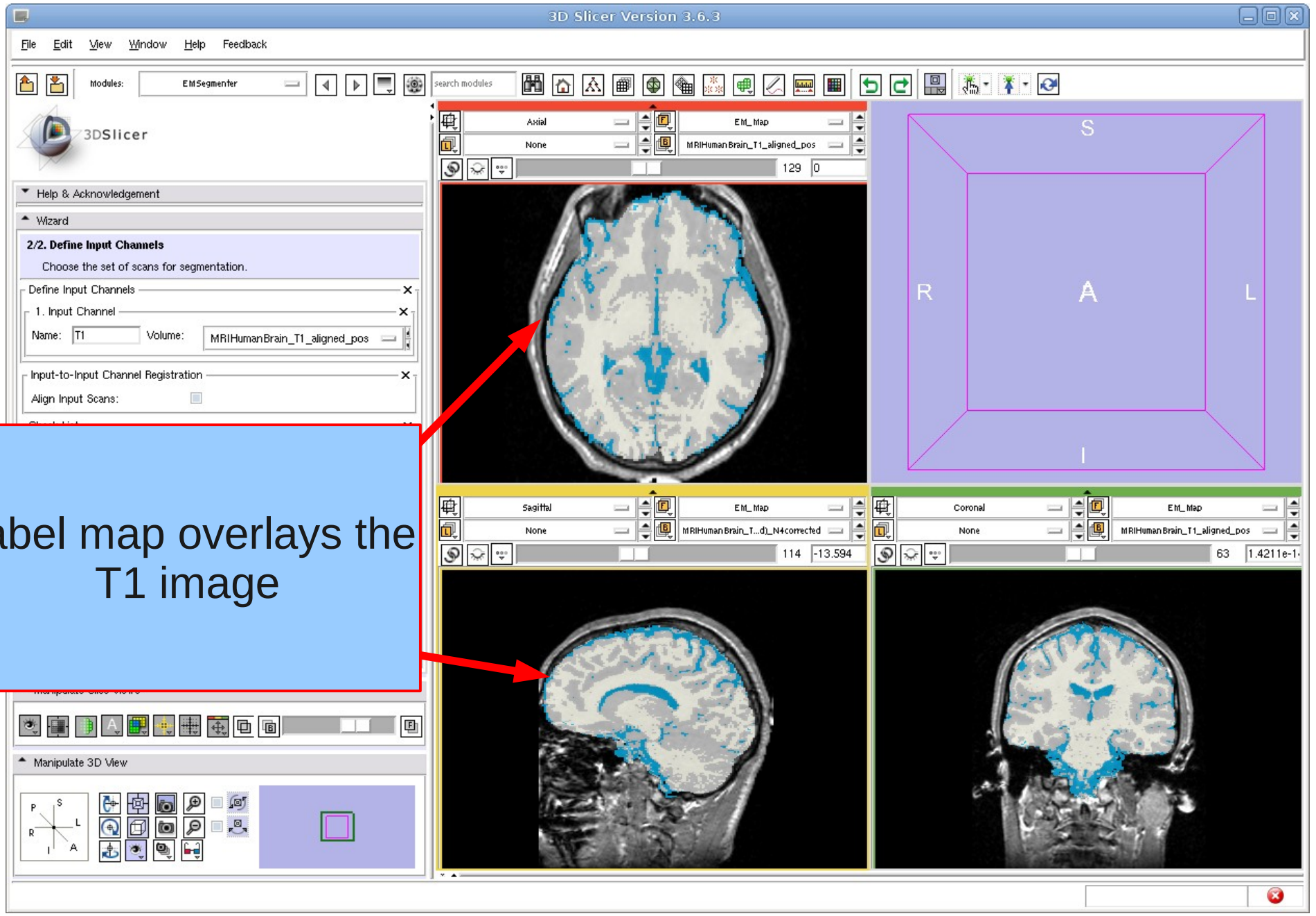
Please wait for the pre-processing algorithms

EM Segmentation is running



Please wait for the
EM segmentation algorithm

Result: Label map



Label map overlays the T1 image

Further Info & Acknowledgments

EMSegmenter Wiki Page:

http://www.slicer.org/slicerWiki/index.php/EMSegmenter-Overview

The EMSegmenter technology behind was reported in:

K.M. Pohl et. A hierarchical algorithm for MR brain image parcellation. IEEE Transactions on Medical Imaging, 26(9), pp 1201-1212, 2007.

We thank the following institutions for their support: