

# Fast GrowCut

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# Module Description

- This module is a fast version of the GrowCut method
- It is a powerful algorithm that uses example segmentation to create a full segmentation of the volume
- Multiple label colors can be used to define regions that represent parts of anatomical structures
- The algorithm will seek out the best labeling for an adjacent pixel to match your example

# Learning Objective

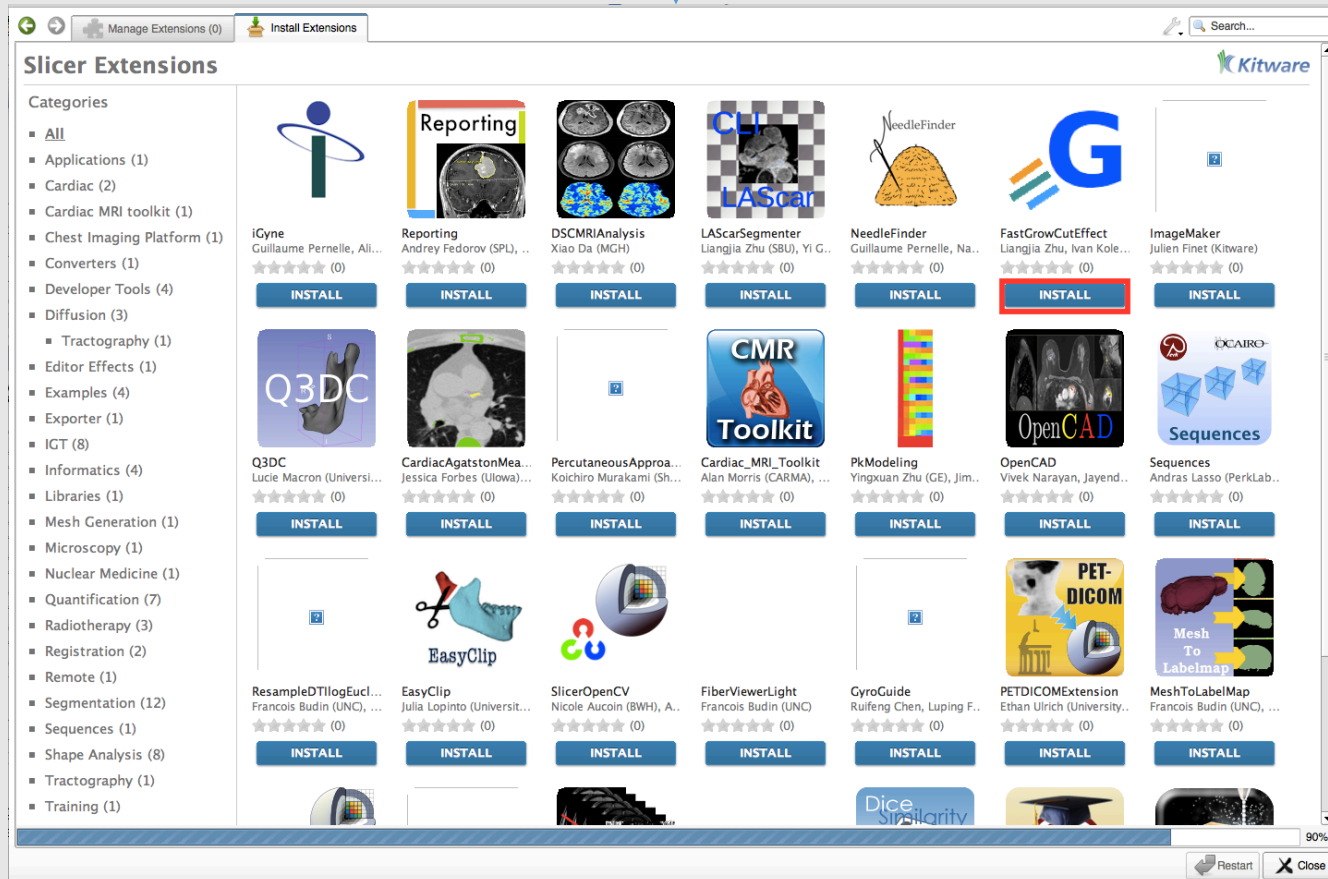
This tutorial demonstrates the basic usage of the Fast GrowCut Effect extension to create segmentations using sample data that can be downloaded from within the Slicer application.



# Overview

1. Install Fast GrowCut Effect extension
2. Load Sample Data
3. Start Fast GrowCut
4. Turn On All Slice Views in the 3D Viewer
5. Draw Seed Regions
6. Corrections

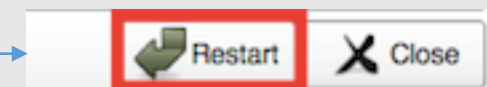
# 1. Install Fast GrowCut Effect Extension



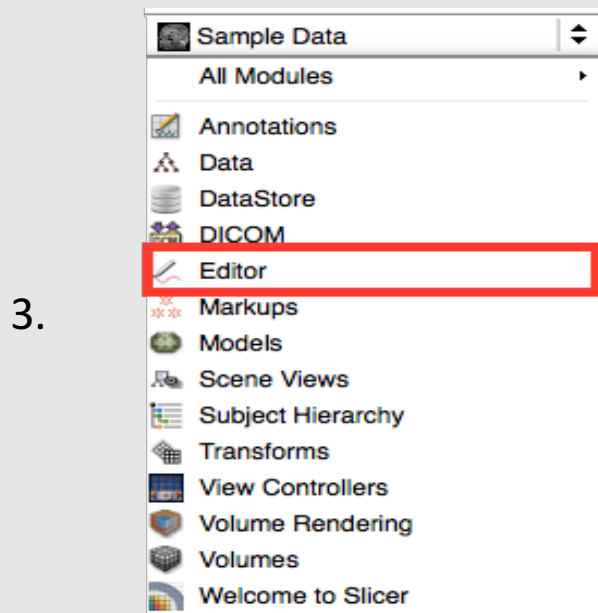
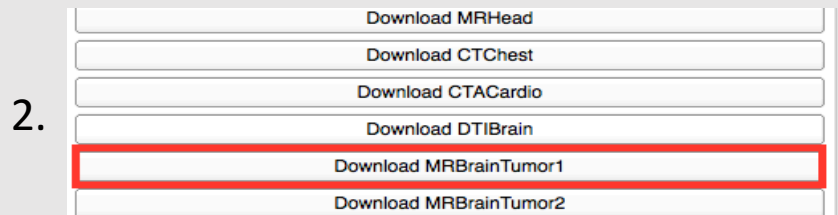
1. Open the Extension Manager from the toolbar

2. Find the Fast Grow Cut Effect module and click install

3. Once installed, restart Slicer



## 2. Load Sample Data



1. Select 'Download Sample Data' from the Welcome panel

2. Select MRBrainTumor1

3. Select the Editor module from the drop down menu

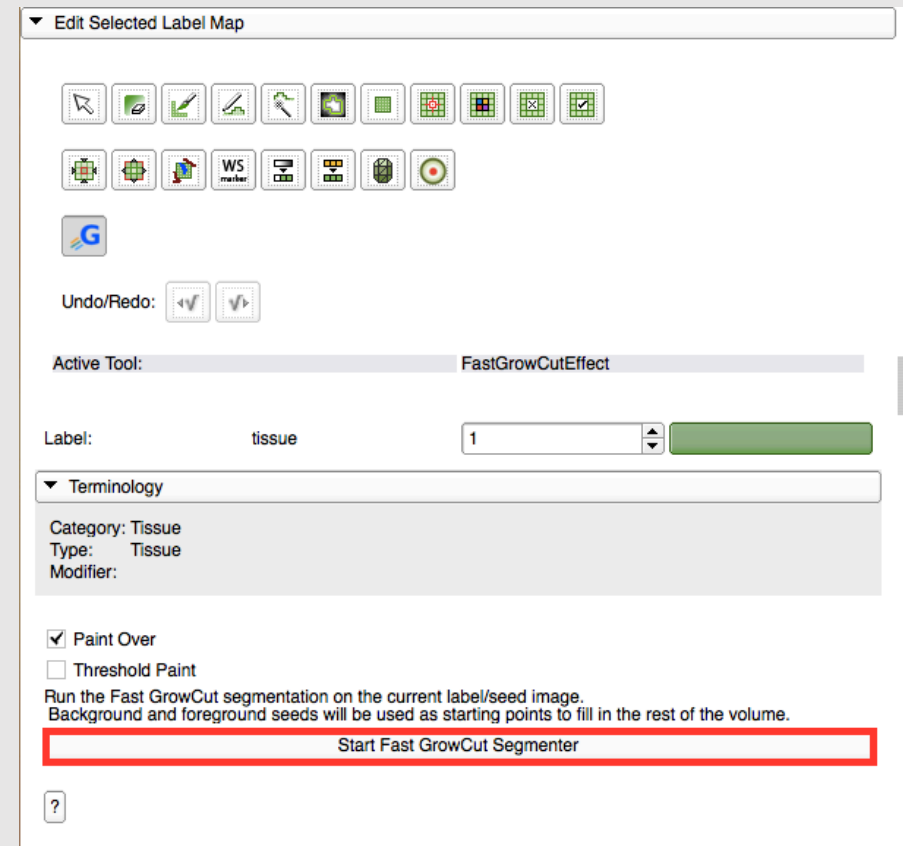
4. Click 'OK' on the Color Table pop-up window

# 3. Start Fast GrowCut

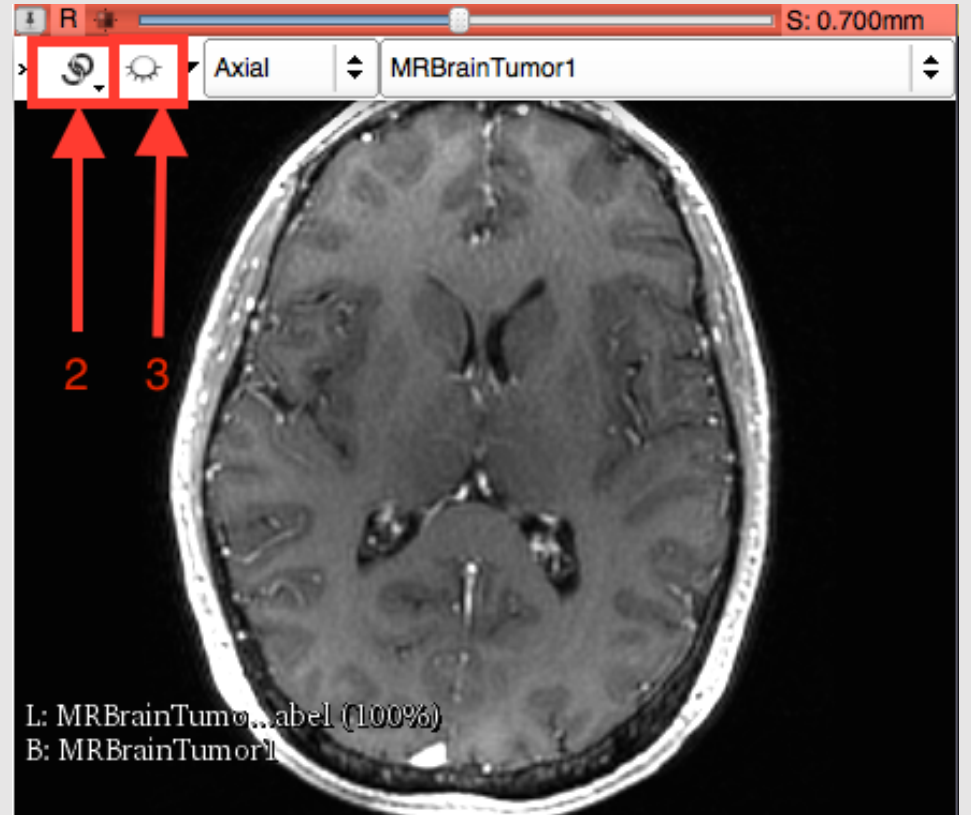
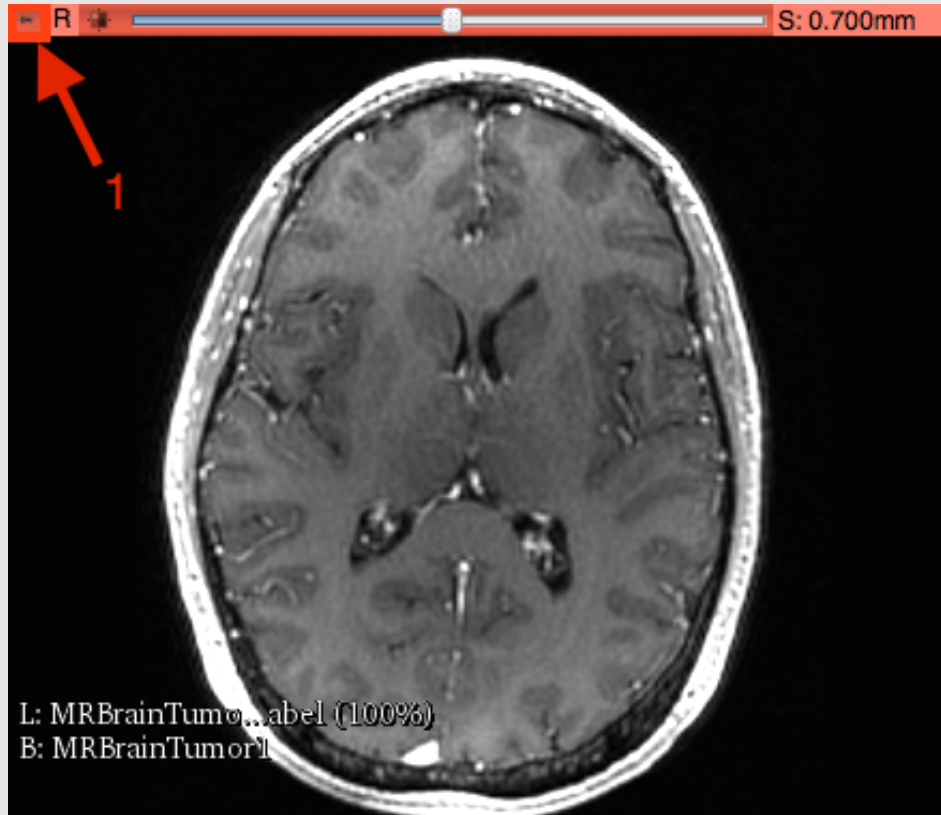
1.



2.



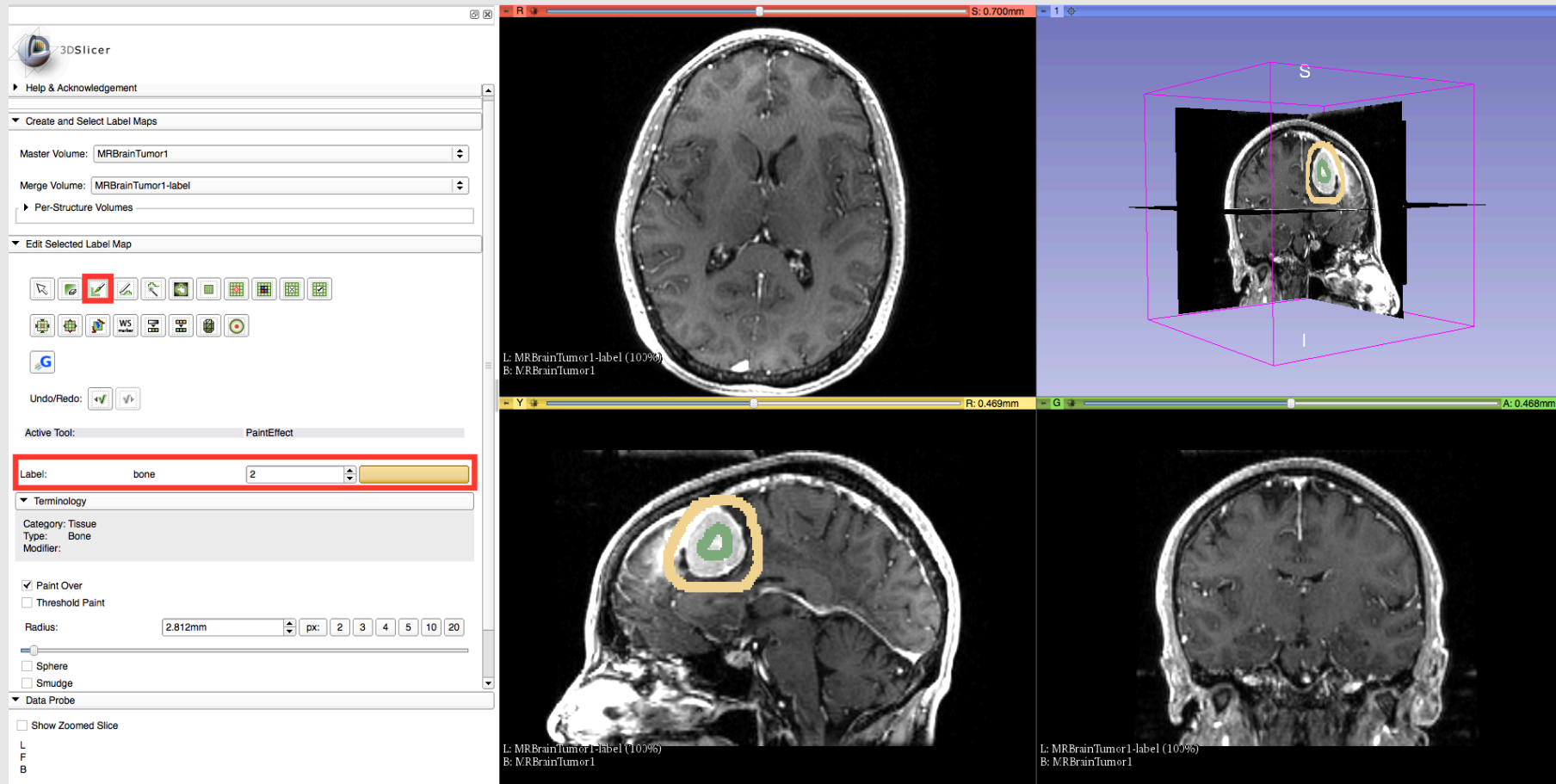
## 4. Turn On All 3 Slicer Views in the 3D Viewer

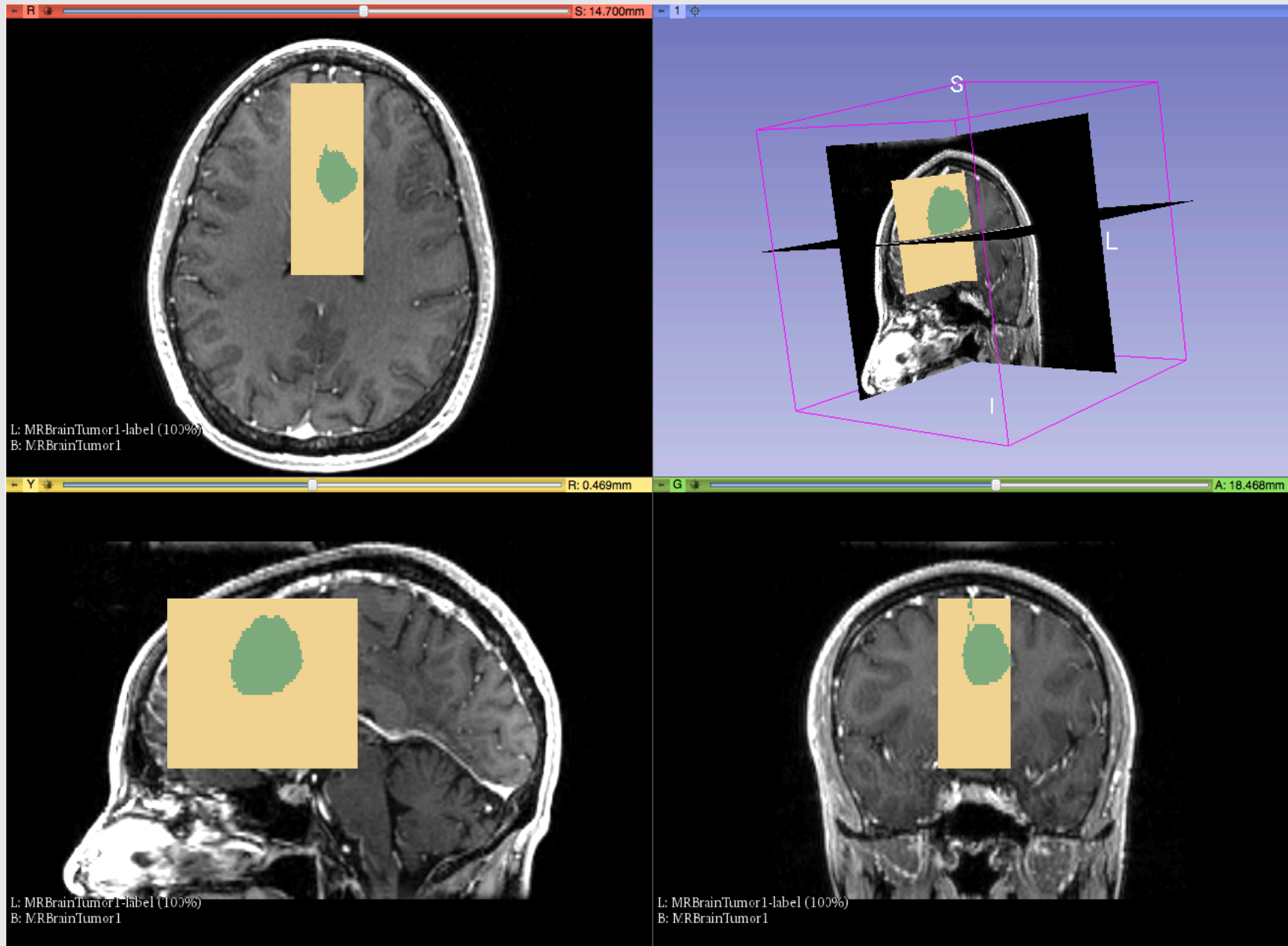




# 5. Draw Seed Regions

Use the Paint Effect to draw seed regions. Use Label 1 for the foreground and Label 2 as the background. It is important that no part of the scribble you make within the mass (Label 1) includes the outside region and vice versa. The algorithm is sensitive to seeding and will not be forgiving of an outlier. When finished, press 'G' to run Fast GrowCut.





## 6. Corrections

- If you are not satisfied, press 'S' to toggle between seed image and the segmentation result
- Edit on the seed image to reduce over/under segmentations
- When you are finished editing on the seed image, press 'G' to run Fast GrowCut again
- The steps on this slide may be repeated until you are satisfied with your segmentation