

Volume Edit: Cerebellum Segmentation

Segmenting structures from surrounding anatomy with a similar grayscale intensity can be difficult. This exercise will demonstrate how to utilize the walls function in Volume Edit to make segmenting the cerebellum from the rest of the brain easier.



1. Load the **MRI_EGV_Brain.avw** from the the **\\\$:\BIR\images\TutorialData** directory.
2. Select the data set and open **Segment > Volume Edit**.
3. Adjust the intensity range by opening **View > Intensities** and lowering the **Maximum value to 80**.
4. Select the **Walls** tab, and check **Define walls to limit semi-automated operations**. In the options returned, set **Draw Walls** and **Spline** (figure 1).
5. In the Sagittal view navigate to slice **68**. Start setting spline points between the cerebellum and the rest of the brain. Click **Apply** on the Walls panel after completing a spline, or hit **A** on your keyboard to apply the spline.

note Always define walls in the same manner. For example if defining from the front to the back of the brain make sure all walls for defined in this way.

6. Move forward several slices and define another spline. Repeat across the brain (figure 2).

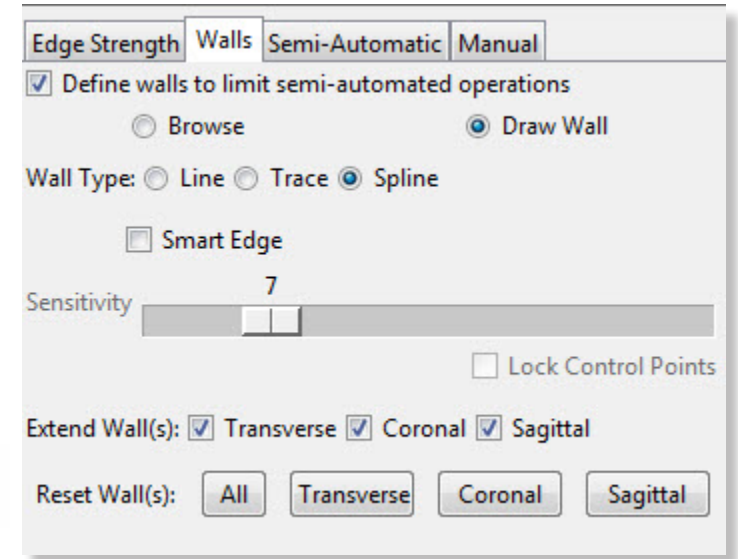


Figure 1

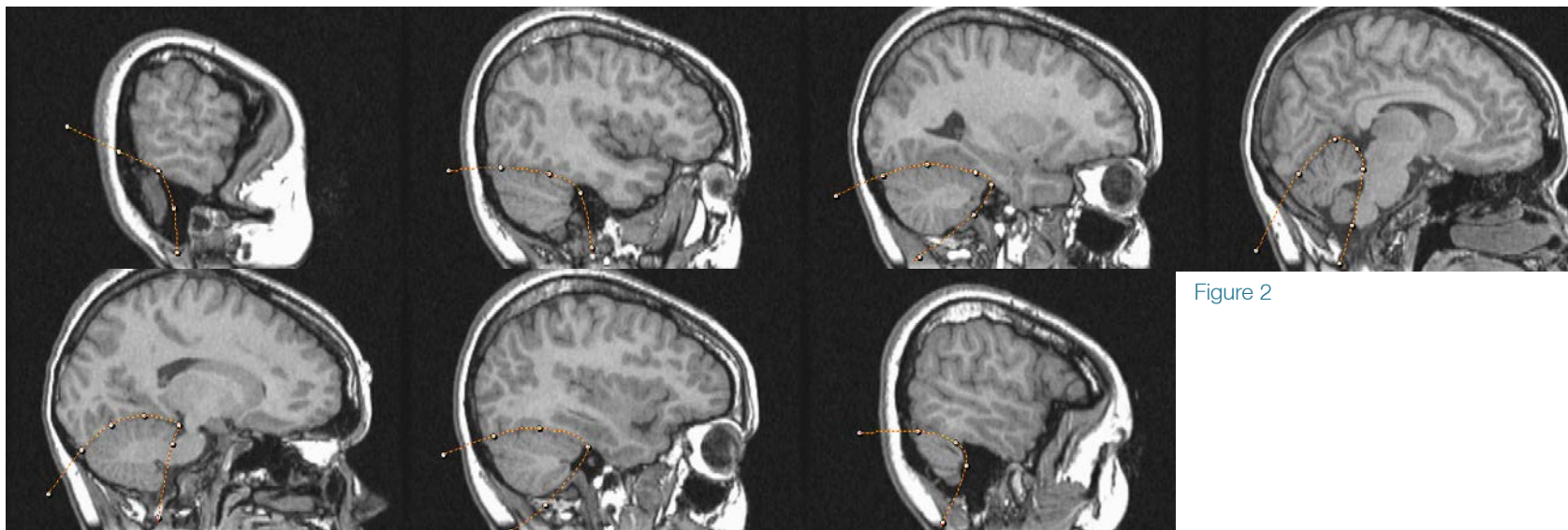


Figure 2

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- Once complete, move back through the slices and review the walls. Add new walls if needed.
- Select the **Semi-Automatic** tab and select the **Object Extractor** option. Click in the cerebellum on a sagittal slice to set a seed point.
- Select a min threshold of **30** and a max of **69** (figure 3). Click **Extract Object**.
- Lock Object_2 and click **Add Object**. Set a seed point in the white matter on a spatially connected transverse slice, then click **Extract Object**.
- Change the name of **Object_2** to **Cerebellum** and **Object_3** to **Brain**.
- Save the Object Map (**File > Save Object Map**) and open in **Measure > Region of Interest** to make measurements of the Brain and Cerebellum objects.
- Close the module before proceeding to the next exercise.

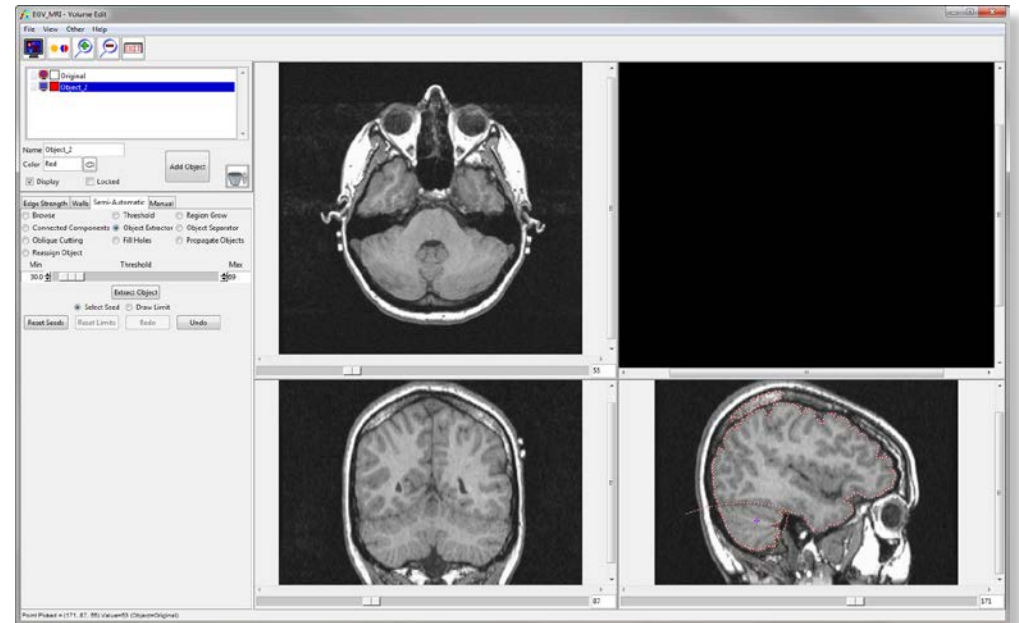


Figure 3

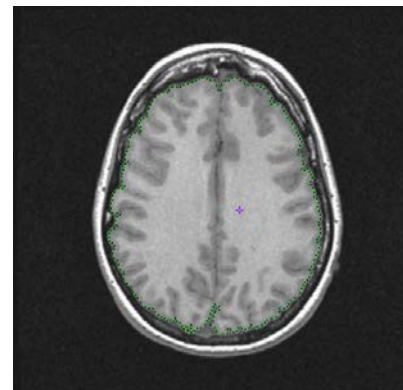


Figure 4

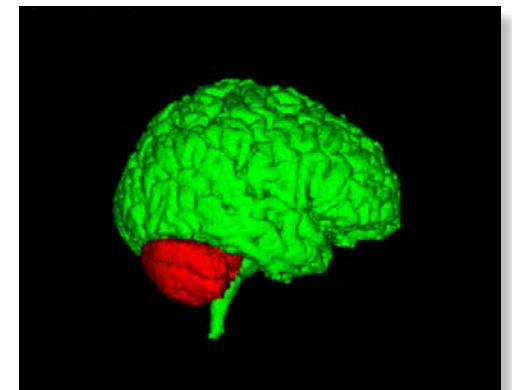


Figure 5