

2. Making Line Measurements

The Line tool allows users to define a line on a 2D image or the 3D rendering. The tool will report distance measurements, line intensity profile and the coordinates of the line end points.

- Select MRI_3D_Head and open Measure.
- Switch the display of the Rendering off **1** and set the primary display to Sagittal. **2**
- Select the 1D Sample Type **3** and choose the Line tool. **4**
- Uncheck Full Width Half Max. **5**
- Define a line on a sagittal slice. **6**
- The coordinates for the line endpoints (A and B) and the line distance are reported in the Stats review area. **7**



Download the MRI_3D_Head data set to follow along <http://analyzedirect.com/data/>

The screenshot shows the 'Neuro_MRI_Axial - Measure' application window. The main display area shows a 3D MRI scan of a head in a sagittal view. A green line is drawn across the brain, with endpoints labeled 'A' and 'B'. A callout box '6' is positioned near the line. The interface includes a toolbar at the top with callouts 1 and 2, and a 'Stats to View' panel on the left with callouts 3, 4, 5, and 7. The 'Stats' section displays the following information:

```

Orient = Sagittal
A = (88,21,120)
B = (88,189,120)
Distance = 167.91 mm
  
```

The bottom of the window shows three smaller views: a sagittal slice (Slice = 88), an axial slice (Slice = 120), and a coronal slice (Slice = 119). Each view has its own zoom and max/min values.

- Press Clear **8** to reset.
- Check the Persistent **9** and Auto Log Stats checkboxes. **10**
- Define several lines on the sagittal slice. **11**
- The coordinates for the line endpoints (A and B) and the line distances are reported in the log. **12**

The screenshot displays the Neuro_MRI - Measure application window. The main view shows a sagittal MRI slice with several red dashed lines drawn across it, labeled with 'A' and 'B' at their endpoints. The interface includes a control panel on the left with various settings and a log window at the bottom.

Control Panel Settings:

- Sample Type: 1-D, 2-D, 3-D
- Buttons: Measure, Erase, Copy, Paste, Undo, Redo
- Sample Options: **9** Persistent, **8** Clear
- Full Width Half Max:
- Stats to View:
 - General: Orient, Name, End Point Locations, Maximum, Minimum, Mean, Standard Deviation
 - Points: Distance, Curved Distance
 - Lines: Profile
- Log Stats: Auto Log Stats
- Stats: Stats

Log Window Output:

```

Orient = Sagittal
A = (88,158,186)
B = (88,141,138)
Distance = 31.99 mm
    
```

Index	Orient	X1	Y1	Z1	X2	Y2	Z2	Distance
1	Sagittal	88	21	118	88	77	119	56.11
2	Sagittal	88	36	155	88	82	130	52.22
3	Sagittal	88	68	174	88	94	137	44.93
4	Sagittal	88	103	181	88	107	141	40.07
5	Sagittal	88	133	174	88	123	139	37.06
6	Sagittal	88	158	165	88	141	138	31.99