

## MR Brain Tumor

Last Updated: 02/11/2020

Name	Plane	Sequence	Slice	Gap	FOV	Scan Range
<b>3-Plane Localizer</b>	Ax, Sag, Cor				21-25 cm	
<b>SAG T1</b>	Sagittal	T1 FLAIR	4 mm	0.4 mm	21-25 cm	Scalp to Scalp
<b>AX DWI AX ADC</b>	Axial	Epi DWI	4 mm	0.4 mm	21-25 cm	Vertex to Odontoid
<b>AX T1</b>	Axial	T1 FLAIR or FSE	4 mm	0.4 mm	21-25 cm	Vertex to Odontoid
<b>AX T2</b>	Axial	T2 FSE	4 mm	0.4 mm	21-25 cm	Vertex to Odontoid
<b>AX FLAIR</b>	Axial	T2 FLAIR	4 mm	0.4 mm	21-25 cm	Vertex to Odontoid
<b>AX GRE/SWI</b>	Axial	T2* FGRE or SWAN	4 mm	0.4 mm	21-25 cm	Vertex to Odontoid
<b>INJECT CONTRAST</b>						
<b>3D T1 POST</b>	Sag w/ Ax & Cor recons	T1 MPRAGE/ T1 CUBE	1 mm	0 mm	21-25 cm	Scalp to Scalp
<b>AX T1 POST</b>	Axial	T1 FLAIR or FSE	4 mm	0.4 mm	21-25 cm	Vertex to Odontoid
<b>COR T1FS POST</b>	Coronal	T1 FS FSE	4 mm	0.4 mm	21-25 cm	Frontal Sinus through Occiput

### Notes:

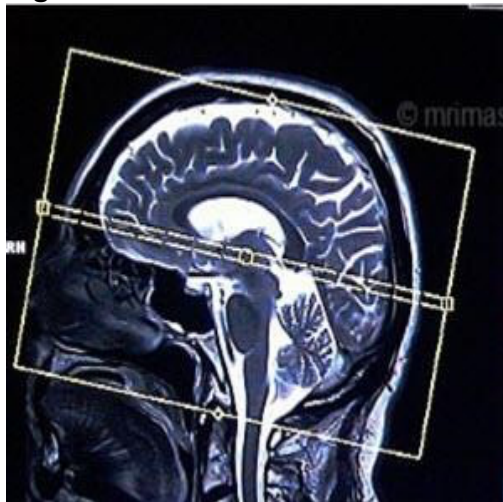
- Use protocol for newly diagnosed tumor, known or possible metastatic disease, and pre-surgical/radiation planning.
- 3T preferred over 1.5T
- 3 min delay between injection of contrast and scanning. May acquire T2 axial after contrast injection during delay before acquiring post-contrast sequences.

- Contrast type –per site. Dose- 0.2ml/kg.
- Reconstruct Post contrast MPRAGE at 1mm slices in sagittal and coronal planes
- Use Propeller if excessive motion
- T1 FLAIR preferred over T1 FSE especially at 3T and when using Propeller.
- Orient DWI axial slices parallel to glabella and foramen magnum to reduce air-bone interface artifacts from sinuses and temporal bones. In cases of excessive susceptibility artifact or motion, use coronal or propeller DWI.
- Use SWI instead of GRE when available. Include filtered phase and mIP SWI.
- Use ARC/GRAPPA if available for parallel imaging to reduced scan times.

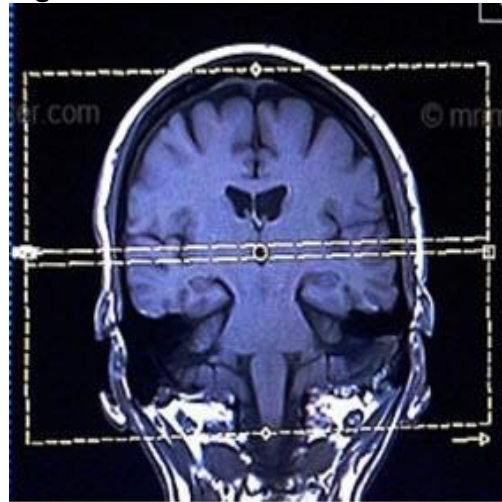
**Images:**

- AXIAL- Plan on sagittal plane, angle parallel to genu and splenium of corpus callosum, cover from odontoid to vertex (**see Figures 1, 2, 3**).
- SAGITTAL- Plan on axial plane, angle parallel to midline, cover temporal bone to temporal bone (**see Figures 4, 5, 6**).
- CORONAL- Plan on sagittal plane, angle parallel to brainstem, cover from frontal sinus to occiput (**see Figures 7, 8, 9**).
- AX for DWI- Plan on sagittal plane, angle parallel to line from glabella to the foramen magnum (**see Figure 10**).

**Figure 1:**



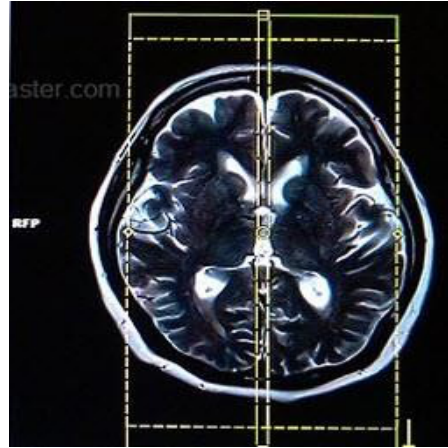
**Figure 2:**



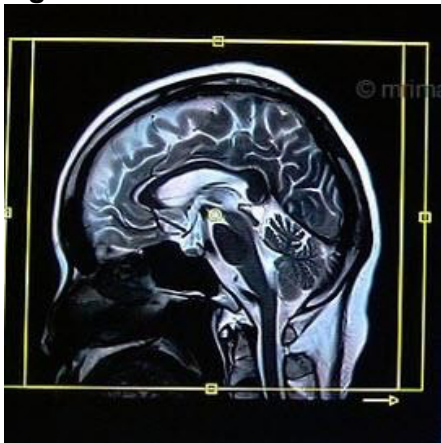
**Figure 3:**



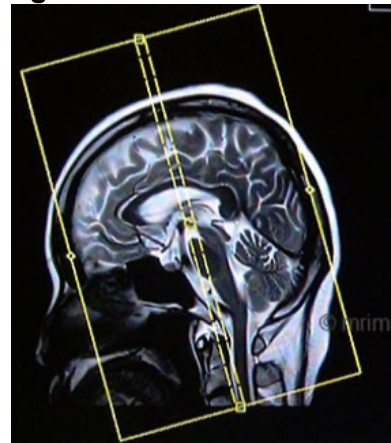
**Figure 6:**



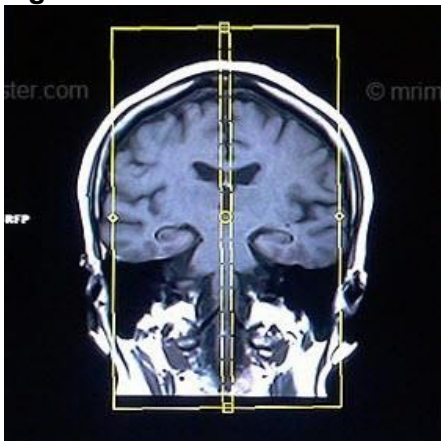
**Figure 4:**



**Figure 7:**



**Figure 5:**



**Figure 8:**



Figure 9:

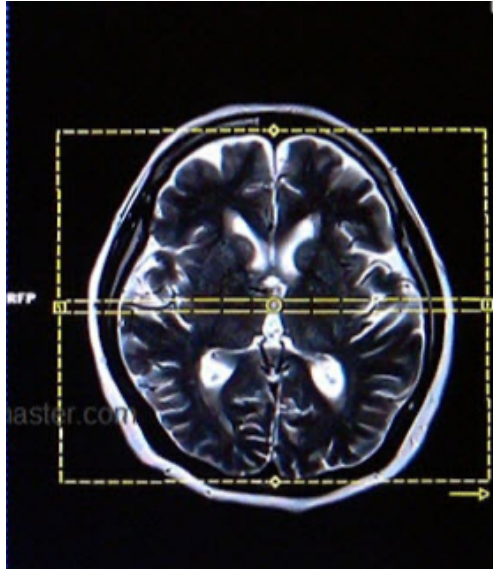


Figure 10:

