

Protocol and Parameters for T1 Axial Stereotactic MRI Beaumont Hospital

The parameters for the T1 Axial Stereotactic sequences supplied below may vary slightly for different MR machines depending on manufacturer and/or model. However the basic requirements are a 3D T1 weighted Axial (e.g. FSPGR, MP-RAGE, FLASH) sequence with a 240-260 FOV, 1.5 mm slice thickness, 20% gap, high resolution acquisition matrix and **no angle**.

NB: Positioning of 3D Volume on Sagittal localiser/image

- Do **not** angle volume in any plane
- An air gap must be included superiorly (approx 3-4 slices) to include skull surface
- The tip of the nose must be included anteriorly (use 260 FOV for patients with large heads or noses)
- Skull surface posteriorly needs to be included in FOV but does not need a large air gap

Contrast: Many Pre-op Stereotactic MRI scans for the Neurosurgeons in Beaumont Hospital are performed post gadolinium however the clinical information supplied, the radiologists vetting notes and the patients GFR and/or allergy status will determine whether contrast should be administered.

(Please contact neurosurgery Senior Registrar Tafadzwa Mandiwanza via Beaumont switch or email tafadzwamandiwanza2@beaumont.ie if any queries)

	Scanner	Scanner	Scanner
Parameters	3T SKYRA (Siemens)	1.5T Avanto (Siemens)	1.5T Signa (General Electric)
Sequence	3D MPRAGE	3D FLASH	3D FSPGR
Slab Group	1	1	1
No. Of Slabs	1	1	1
Distance Factor/Gap	20%	20%	---
Orientation	Transverse/Axial	Transverse/Axial	Transverse/Axial
Phase Encoding	R>>L	R>>L	Freq Dir A/P
Phase Oversampling	10%	10%	--
Slice Oversampling	25%	25%	--
Slices per Slab	128	128	128
FOV Read	240/260 mm	240/260 mm	240/260 mm
FOV Phase	81.3% (195 mm)	87.5% (210mm)	0.80 mm
Slice Thickness	1.50 mm	1.50 mm	1.5mm
TR	1680 ms	14 ms	10.3
TE	3.47 ms	5.13 ms	Min Full
No. Of Averages/ NEX	1	1	1
Voxel Size	0.5 x 0.5 x 1.5 mm	0.5 x 0.6 x 1.5 mm	---
iPAT Factor	2	None	----
TI (or IR Prep)	900 ms	N/A	450
Flip Angle	8 degrees	25 degrees	20 degrees
Multi Slice Mode	Single Shot	Interleaved	---
Base resolution	512	512	256
Phase Resolution	70%	75	---
Acquisition Matrix	291 x 512	336 X 512	256 X 256 mm

