

Online supplement 3A: Upper airways MRI protocol

Sequence	Plane	TR (ms)	TE (ms)	Flip (°)	BW (Hz)	NEX	pif	FOV (cm ²)	Matrix	Slices / thick (mm)	Actual Voxel resolution (mm ³)	Interp. resolution (mm ³)	Time
Anatomical													
2D T2w PROPELLER	Axial	4400	49	90/142	62.5	6	3	15.3 x 15.3	320 x 320	25 / 2.0	0.47 x 0.47 x 2.0	0.29 x 0.29 x 2.0	4 min 46 s
2D T2w fatsat PROPELLER	Axial	4570	50	90/142	62.5	6	3	15.3 x 15.3	320 x 320	25 / 2.0	0.47 x 0.47 x 2.0	0.29 x 0.29 x 2.0	4 min 57 s
2D T2w PROPELLER	Sagittal	3730	50	90/142	62.5	6	3	15.3 x 15.3	320 x 320	21 / 2.0	0.47 x 0.47 x 2.0	0.29 x 0.29 x 2.0	4 min 4 s
2D T2w PROPELLER	Coronal	3700	50	90/142	62.5	6	3	15.3 x 15.3	320 x 320	21 / 2.0	0.47 x 0.47 x 2.0	0.29 x 0.29 x 2.0	4 min 4 s
3D PDw SPGR Calc	Axial	3.8	2.1	3	90.9	5	1	15.3 x 15.3	320 x 224	68 / 0.8	0.47 x 0.68 x 0.8	0.29 x 0.29 x 0.4	4 min 3 s
Tissue Characterization													
2D Multi b-value DWI	Axial	2100	54.6	90/180	250.0	3 (b10) 5 (b100) 7 (b200) 11 (b400) 15 (b800)	1	18.0 x 4.5	90 x 180	16 / 3.2	2.0 x 1.0 x 3.2	0.70 x 0.70 x 3.2	4 min 17 s
Dynamic													
2D SSFSE Insp, AAAA	Axial	∞	47	90/110	62.5	0.5	2	15.3 x 10.7	160 x 128	25 / 2.0	0.95 x 0.68 x 0.8	0.29 x 0.29 x 0.4	7 s
3D TRICKS Cont. Insp-AAAA	Axial	2.0	0.9	3	90.9	1.0	2	21.0 x 12.6	160 x 98	18 / 3.0	1.31 x 2.14 x 3.0	0.82 x 0.82 x 1.5	8 s / 330 ms temporal resolution per volume

Online supplement 2A: Paediatric upper airway MRI protocol. A/P; Anterior/Posterior, BW; Bandwidth, DWI; Diffusion Weighted Imaging, ETL; Echo Train Length, FOV; Field Of View, PD; Proton Density, NEX; Number of Excitations, PROPELLER; Periodically Overlapping PARALLEL Lines with Enhanced Reconstruction, SPGR; Spoiled Gradient Echo Sequence, SSFSE; Single Shot Fast Spin Echo, TE; Echo Time, TR; Repetition Time, TRICKS; Time Resolved Imaging of Contrast Kinetics