Supplementary Table 1 – Neuroimaging Acquisition Parameters

Sequence	Slices	FOV (mm)	Voxel size (mm)	TR/TE (ms)	Time (mm:ss)	Other Parameters & Comments
3T CONNECTOM MRI						
DWI	66	220x220	2.0/2.0/2.0	3600/77	21:24	$\Delta = 49$ ms, $\delta = 8$ ms; G = 142, 179, 216, 253, 290 mT/m; b = 4250, 6750, 9850, 13500, 17800 s/mm^2; 64 DW directions; PE = P→A; FA = 90°; R = 2; MB =2; BWDTH = 2314 Hz/px, ES = 0.52 ms
					7:08	$\Delta = 49$ ms, $\delta = 8$ ms; G = 200, 950, 2300 mT/m; b = 31, 68, 105 s/mm^2; 32 directions, PE = A→P; FA = 90°; R = 2; MB =2; BWDTH = 2314 Hz/px, ES = 0.52 ms
					17:20	$\Delta = 19$ ms, $\delta = 8$ ms; G = 179, 216, 253, 290 mT/m, b = 2400, 3450, 4750, 6000 s/mm^2; 64 directions, PE = A→P; FA = 90°; R = 2; MB =2; BWDTH = 2314 Hz/px, ES = 0.52 ms
					9:10	$\Delta = 19$ ms, $\delta = 8$ ms; G = 31, 68, 105, 142 mT/m; b = 50, 350, 800, 1500 s/mm^2; 64 directions, PE = A→P; FA = 90°; R = 2; MB =2; BWDTH = 2314 Hz/px, ES = 0.52 ms
T$_1$ MEMPRAGE	176	220x220	1.0/1.0/1.0	2530/1.15	3:58	3D Multi-echo, FA = 7°; GRAPPA = 3; TI = 1100 ms; BWDTH = 649 Hz/px, ES = 9.2 ms
					3:58	
7T MRI						
BOLD rs-fMRI	111	192×192	1.2/1.2/1.2	2250/26	6:37	Single-shot SMS gradient-echo EPI with FLEET-ACS[1] and Blipped-CAIPI[2]; PE = A→P; FLEET FA = 10°, FA = 75°; R = 3; MB = 3; BWDTH = 1644 Hz/px, ES = 0.71 ms
					6:37	
					6:37	
					6:37	
T$_1$ MP2RAGE	192	256×256	1.0/1.0/1.0	4300/1.84	8:50	3D Multi-inversion, A$_1$ = 5°, FA$_2$ = 6°; TI$_1$ = 840 ms, TI$_2$ = 2370 ms; R = 3; BWDTH = 250 Hz/px, ES = 5.8 ms, Non-selective water excitation, FOCI inversion pulse.
SWI	60	220x220	0.33/0.33/1	3690/21	20:44	2D FLASH, PE = A–P; FA = 90°, Flow compensation, Phase stabilization, R = 2; BWDTH = 50 Hz/px
SWI	60	220x220	0.33/0.33/1	3690/21	20:44	
PET MRI						
TSPO PET[a]	153	320x320	1.25/1.25/1.25	N.A.	~60:00	
MEMPRAGE	208	280x280	1.0/1.0/1.0	2530/1.66, 3.53, 5.4, 7.27	7:23	3D, FA = 7°; R = 2; BWDTH = 638 Hz/px, ES = 9.7 ms
pCASL	25	225x225	3.5/3.5/6.0	6000/11	9:18	FA = 90°; R = 2; BWDTH = 3004 Hz/px, ES = 0.43 ms, post-labeling delay = 1000 ms

TOF Angio	40/slab	150x200	0.5/0.5/0.65	37/3.86	18:43	3D Multi-slab, 7 slabs, FA = 18°; BWDTH = 178 Hz/px
Tau PET[a]	153	320x320	1.25/1.25/1.25	N.A.	~60:00	
MEMPRAGE	208	280x280	1.0/1.0/1.0	2530/1.66, 3.53, 5.4, 7.27	7:23	3D, FA = 7°; R = 2; BWDTH = 638 Hz/px, ES = 9.7 ms
MP2RAGE	176	240x256	1.0/1.0/1.0	5000/2.96	8:22	3D, TI_1 = 700 ms, TI_2 = 2500 ms, FA_1 = 4°, FA_2 = 5°; R = 3; BWDTH = 240 Hz/px, ES = 7.1 ms
T_2 FLAIR	176	256x256	1.0/1.0/1.0	6000/418	8:50	3D, TI = 2100 ms; R = 2; BWDTH = 651 Hz/px, ES = 3.56 ms

[a] For PET data, the dimensions describe the reconstructed standardized uptake value image. Abbreviations: 2D = 2-dimensional; 3D = 3-dimensional; AP = anterior-posterior; BWDTH = readout bandwidth; DW = diffusion weighted; EPI = echo-planar imaging; ES = echo spacing; FA = flip angle; T_2 FLAIR = T_2-weighted fluid-attenuated inversion recovery; FOV = field of view; G = gradient strength; MB = multiband acceleration factor; MEMPRAGE = multi-echo magnetization-prepared rapid gradient echo; MP2RAGE = two inversion-contrast magnetization-prepared rapid acquisition gradient echo; N.A. = not applicable; pCASL = pseudo-continuous arterial-spin labeling; PE = phase encoding direction; R = in-plane acceleration factor; rs-fMRI = resting-state functional MRI; SMS = simultaneous multi-slice; SWI = susceptibility-weighted imaging; TE = echo time; TI = inversion time; TOF Angio= time-of-flight angiography; TR = repetition time.