

Online Supplemental Data

Table 1. T2* signal, CNR and average GM and WM resting perfusion measures for all participants calculated using AIF's from voxels chosen at two locations in the MCA and AIF's from voxels chosen at two locations in the CPs. AIF, arterial input function; ΔS , percent signal change; CNR, contrast-to-noise ratio.

Participant	Clinical Findings	AIF	ΔS (%)	CNR	MTT (s)		rCBF (a.u)		rCBV (a.u)	
					GM	WM	GM	WM	GM	WM
1	Normal	AIF-MCA1	86.62	16.41	2.74	3.321	2.991	1.706	52.179	28.07
		AIF-MCA2	77.45	19.22	3.196	3.844	3.546	2.094	54.527	29.769
		AIF-CP1	56.75	11.02	2.443	2.761	3.855	2.156	67.313	38.984
		AIF-CP2	65.63	8.62	2.267	2.656	3.339	1.834	63.059	35.757
2	Normal	AIF-MCA1	80	8.23	4.197	5.104	2.116	1.124	26.957	12.552
		AIF-MCA2	71.49	7.77	4.861	5.779	3.213	1.768	35.196	17.171
		AIF-CP1	47.36	19.97	4.647	5.55	3.463	1.933	39.477	19.667
		AIF-CP2	41.47	11.96	3.768	4.607	3.921	2.26	51.547	27.442
3	Normal	AIF-MCA1	92.43	10.63	2.247	2.769	2.61	1.585	54.537	31.296
		AIF-MCA2	94.28	16.71	3.221	3.887	3.759	2.392	57.435	33.743
		AIF-CP1	88.79	16.58	2.476	2.821	2.27	1.328	44.546	24.777
		AIF-CP2	88.4	6.77	2.501	2.905	2.768	1.644	52.427	29.937
4	Normal	AIF-MCA1	89.27	10.95	2.461	3.016	2.705	1.688	52.855	29.72
		AIF-MCA2	89.61	22.46	2.301	2.954	2.717	1.744	56.597	32.027
		AIF-CP1	75.91	14.64	2.122	2.586	3.333	2.051	66.947	40.688
		AIF-CP2	87.61	14.77	2.89	3.387	2.707	1.649	46.244	25.533
5	Normal	AIF-MCA1	83.96	10.93	3.505	3.714	3.374	2.099	48.498	28.933
		AIF-MCA2	67.66	10.57	2.828	3.031	3.814	2.39	62.363	39.565
		AIF-CP1	64.96	12.2	3.028	3.176	3.415	2.074	54.1	32.861
		AIF-CP2	61.51	12.17	2.937	3.092	3.556	2.174	57.238	35.27
6	Normal	AIF-MCA1	79.04	13.32	2.301	2.696	2.472	1.728	50.924	33.589
		AIF-MCA2	71.93	9.75	2.179	2.509	2.672	1.849	55.297	37.47
		AIF-CP1	65.75	16.8	3.039	3.36	2.58	1.749	42.02	26.715
		AIF-CP2	61.11	20.26	3.22	3.509	2.694	1.823	41.504	26.51
7	Normal	AIF-MCA1	60.99	11.24	2.247	2.428	3.969	2.608	70.553	49.865
		AIF-MCA2	76.58	14.84	2.722	2.899	3.692	2.388	61.606	40.787
		AIF-CP1	46.46	12.75	2.67	2.788	4.069	2.647	66.252	45.466
		AIF-CP2	65.33	22.31	2.5	2.621	3.068	1.909	55.976	35.933
8	Normal	AIF-MCA1	82.28	7.9	2.791	3.145	2.606	1.586	45.187	26.138
		AIF-MCA2	71.45	12.69	2.44	2.805	3.178	1.97	58.527	35.66

		AIF-CP1	48.06	21.31	2.945	3.251	4.585	3.001	69.112	45.878
		AIF-CP2	53.36	15.27	2.909	3.229	4.16	2.652	64.676	41.17
9	Right Frontal High-Grade Glioma	AIF-MCA1	84.87	7.41	3.95	4.839	2.101	1.122	27.915	12.727
		AIF-MCA2	79.87	7.99	3.65	4.662	1.829	0.987	27.127	12.149
		AIF-CP1	62.89	5.56	3.409	4.19	2.355	1.237	34.789	6.222
		AIF-CP2	51.19	9.89	3.899	4.75	2.986	1.602	38.745	18.461
10	Left Frontal High-Grade Glioma	AIF-MCA1	85.32	13.75	3.823	4.56	2.802	1.609	37.346	19.341
		AIF-MCA2	84.31	8	3.933	4.617	2.912	1.662	37.551	19.425
		AIF-CP1	83.24	10.44	3.259	3.745	2.503	1.383	37.602	19.562
		AIF-CP2	85.76	7.83	3.071	3.579	2.339	1.292	37.42	19.426
11	Left Frontal High-Grade Glioma	AIF-MCA1	73.06	9.1	3.319	4.022	3.133	1.842	47.393	25.221
		AIF-MCA2	75.92	12.22	4.47	5.211	3.063	1.78	35.412	18.135
		AIF-CP1	54.17	18.13	3.824	4.406	3.309	1.888	43.332	22.725
		AIF-CP2	58.25	8.26	3.532	4.116	3.51	2.021	48.75	26.231
12	Right Frontal Low-Grade Glioma	AIF-MCA1	31.59	10.84	3.291	4.18	7.109	5.253	87.36	62.163
		AIF-MCA2	59.46	14.16	2.276	3.054	5.647	3.419	81.268	53.5
		AIF-CP1	44.39	7.19	4.004	4.863	6.394	4.225	75.838	45.548
		AIF-CP2	23.81	8.15	3.872	4.667	6.867	4.782	81.363	52.654
13	Left Frontal Low-Grade Glioma	AIF-MCA1	75.68	5.12	3.999	4.867	3.269	2.04	41.628	23.194
		AIF-MCA2	86.18	3.92	2.535	3.188	2.774	1.715	51.234	30.07
		AIF-CP1	58.6	11.9	3.915	4.594	3.862	2.407	49.482	28.752
		AIF-CP2	78.42	9.72	3.293	4.003	2.477	1.469	37.19	20.219
14	Left Temporoinisular High-Grade Glioma	AIF-MCA1	90.14	10.83	3.157	3.962	3.105	1.899	48.366	26.291
		AIF-MCA2	73.94	6.32	4.623	5.519	4.331	2.691	48.958	26.762
		AIF-CP1	80.17	25.87	3.241	3.848	3.139	1.875	47.65	25.851
		AIF-CP2	69.73	18.01	3.463	4.081	4.033	2.429	56.194	31.42
15	Left Temporal Low-Grade Glioma	AIF-MCA1	84.2	6.44	3.536	4.787	3.096	1.735	44.155	20.724
		AIF-MCA2	86	8.44	3.206	4.334	3.098	1.733	47.661	22.539
		AIF-CP1	83.05	9.76	3.385	4.406	3.266	1.78	47.492	22.535
		AIF-CP2	85.84	10.53	3.363	4.368	3.397	1.858	49.266	23.473

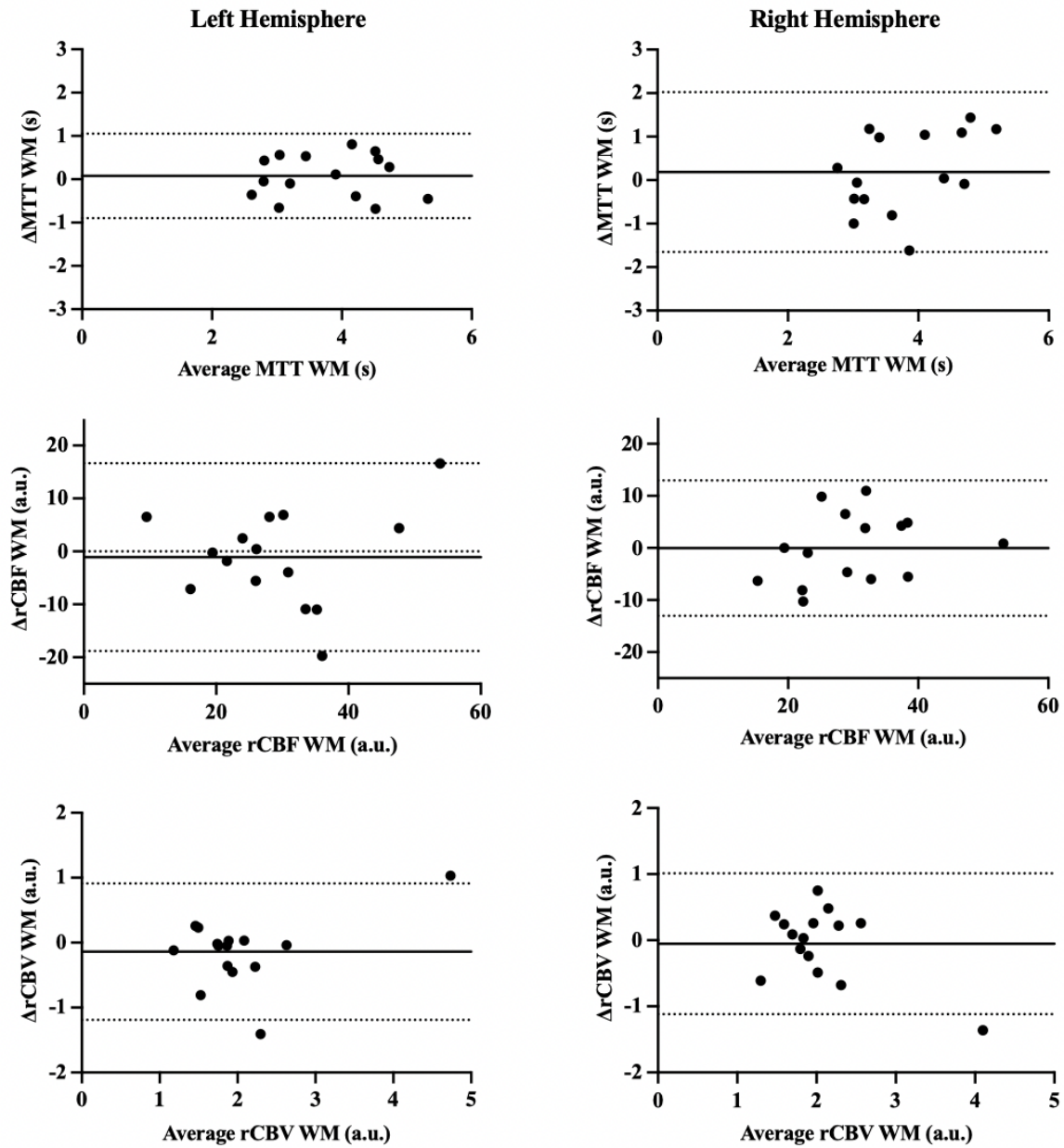


Figure 1. Bland-Altman plots comparing WM perfusion metrics (MTT, rCBF and rCBV) calculated using the MCA AIF and CP AIF within the left hemisphere and right hemisphere. Δ WM perfusion metrics (MTT, rCBF and rCBV) = AIF MCA – AIF CP. Note: Solid line depicts bias, and the dashed lines show the 95% upper and lower limits of agreement as the mean difference.

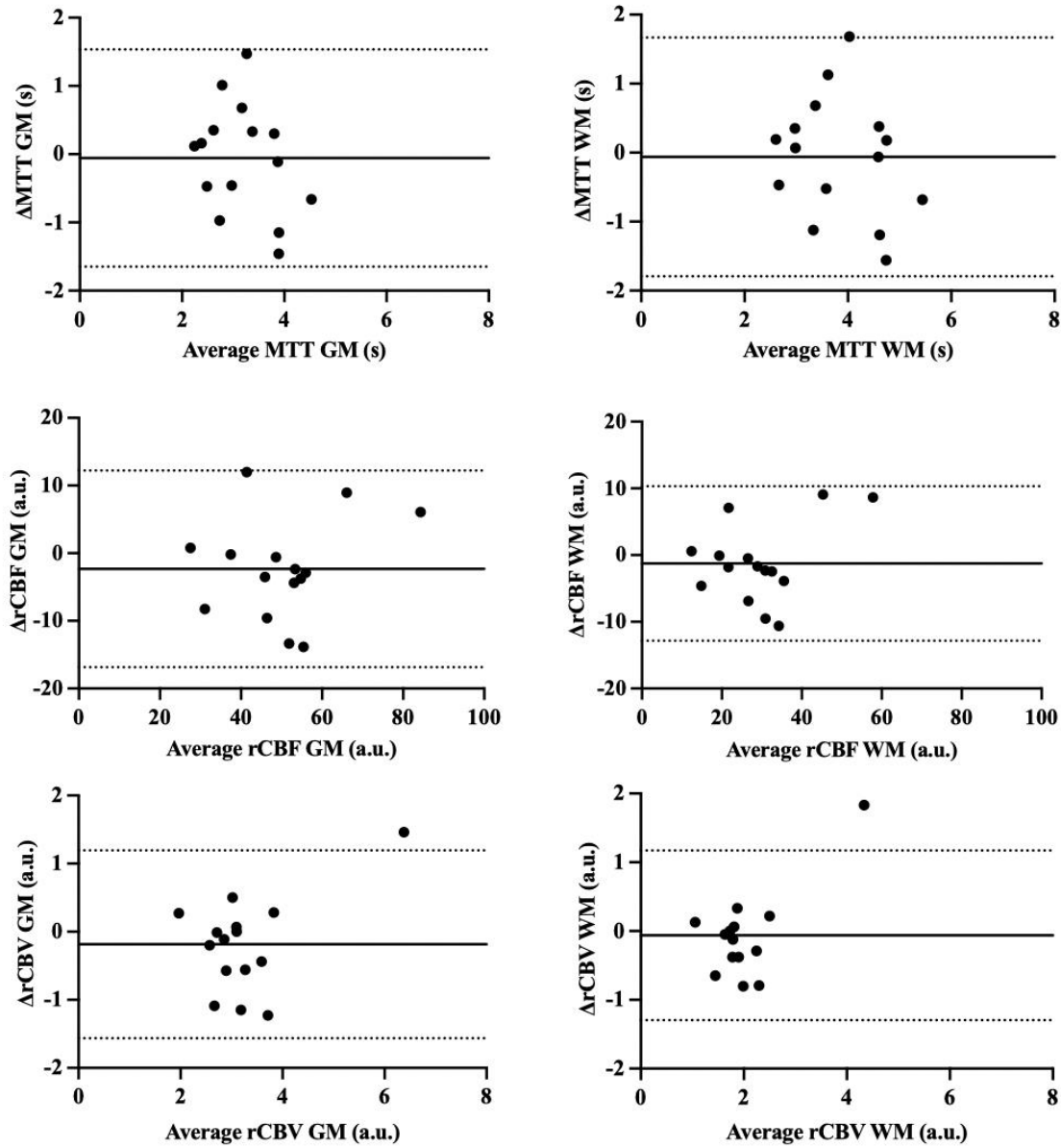


Figure 2. Bland-Altman plots comparing the first AIF location and second AIF location within the MCA. Δ perfusion metrics (MTT, rCBF and rCBV) = AIF MCA1 – AIF MCA2. Note: Solid line depicts bias, and the dashed lines show the 95% upper and lower limits of agreement as the mean difference.

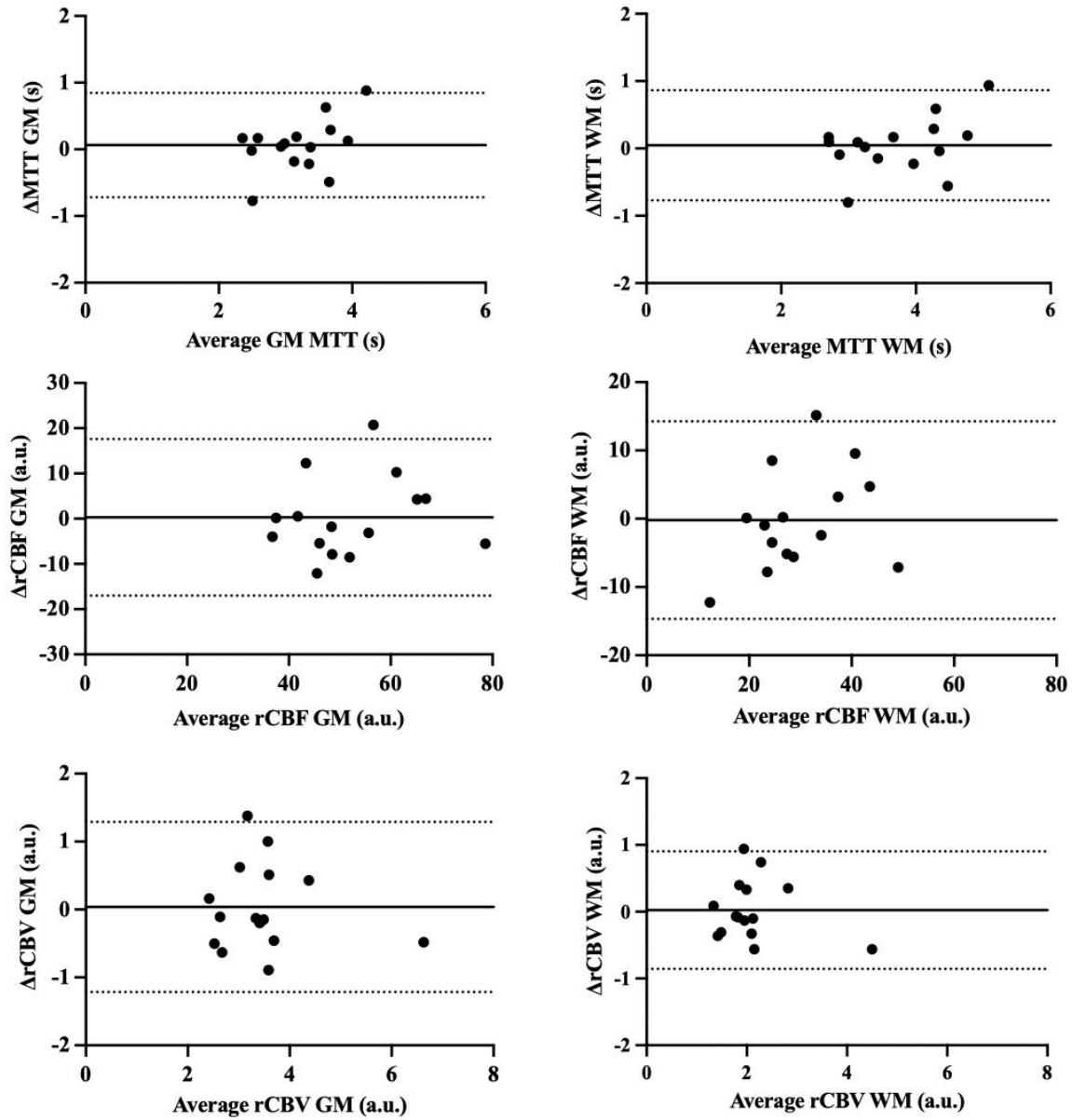


Figure 3. Bland-Altman plots comparing the first AIF location and second AIF location within the CP. Δ perfusion metrics (MTT, rCBF and rCBV) = AIF CP1 – AIF CP2. Note: Solid line depicts bias, and the dashed lines show the 95% upper and lower limits of agreement as the mean difference.