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Supplemental information

**Evaluation of cerebrovascular reactivity
in moyamoya disease using oxygen-dependent
magnetic resonance imaging**

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Supplemental Information

Table S1 Statistical results before introducing covariates between patients with Moyamoya disease and healthy controls, related to Figure 1.

	Region	P value after FDR correction	t ratio	q value
RA Ah	Right anterior cerebral artery hemisphere	<0.000001	6.996	<0.000001
LA Ah	Left anterior cerebral artery hemisphere	<0.000001	7.103	<0.000001
RM Ah	Right middle cerebral artery hemisphere	<0.000001	9.08	<0.000001
RPA h	Right posterior cerebral artery hemisphere	0.000017	5.073	0.00001
LPA h	Left posterior cerebral artery hemisphere	<0.000001	6.385	<0.000001
LM Ah	Left middle cerebral artery hemisphere	<0.000001	11.97	<0.000001
RA Ac	Right anterior cerebral artery callosal	0.000091	4.494	0.000041
LA Ac	Left anterior cerebral artery callosal	0.000015	5.125	0.00001
Rma LL	Right middle cerebral artery lateral lenticulostriate	0.000456	3.92	0.000184
LM All	Left middle cerebral artery lateral lenticulostriate	0.000035	4.833	0.000017
RPA th	Right posterior cerebral artery thalamic and midbrain perforators	0.254701	1.161	0.064312
LPA th	Left posterior cerebral artery thalamic and midbrain perforators	0.168447	1.41	0.045368
RA Aml	Right anterior cerebral artery medial lenticulostriate	0.000877	3.682	0.000295
LA Aml	Left anterior cerebral artery medial lenticulostriate	0.00077	3.73	0.000283
RPA c	Right posterior cerebral artery callosal	0.050337	2.036	0.014526
LPA c	Left posterior cerebral artery callosal	0.050154	2.038	0.014526

Table S2 Statistical results after introducing covariates between patients with Moyamoya disease and healthy controls, related to Figure 1.

	Region	T value	P value	P value after FDR correction
RA Ah	Right anterior cerebral artery hemisphere	-8.27E+00	3.71E-12	1.96E-11
LA Ah	Left anterior cerebral artery hemisphere	-8.20E+00	4.91E-12	1.96E-11
RM Ah	Right middle cerebral artery hemisphere	-9.31E+00	3.82E-14	3.06E-13
RPA h	Right posterior cerebral artery hemisphere	-6.60E+00	5.08E-09	1.35E-08
LPA h	Left posterior cerebral artery hemisphere	-7.13E+00	5.33E-10	1.70E-09
LM Ah	Left middle cerebral artery hemisphere	-1.08E+01	0.00E+00	0.00E+00
RA Ac	Right anterior cerebral artery callosal	-5.42E+00	6.88E-07	1.22E-06
LA Ac	Left anterior cerebral artery callosal	-6.48E+00	8.48E-09	1.94E-08
Rma LL	Right middle cerebral artery lateral lenticulostriate	-4.78E+00	8.38E-06	1.34E-05
LM All	Left middle cerebral artery lateral lenticulostriate	-5.62E+00	3.03E-07	6.07E-07
RPA th	Right posterior cerebral artery thalamic and midbrain perforators	-1.46E+00	1.48E-01	1.48E-01
LPA th	Left posterior cerebral artery thalamic and midbrain perforators	-1.96E+00	5.36E-02	5.71E-02
RA Aml	Right anterior cerebral artery medial lenticulostriate	-4.74E+00	9.81E-06	1.43E-05
LA Aml	Left anterior cerebral artery medial lenticulostriate	-4.61E+00	1.64E-05	2.18E-05
RPA c	Right posterior cerebral artery callosal	-3.04E+00	3.24E-03	3.99E-03
LPA c	Left posterior cerebral artery callosal	-2.95E+00	4.28E-03	4.89E-03

Table S3 Statistical results of the comparison between patients with poor compensatory status and patients with normal compensatory status, related to Figure 2.

	Region	P value	t ratio	q value
RAAh	Right anterior cerebral artery hemisphere	0.145574	1.521	0.29406
LAAh	Left anterior cerebral artery hemisphere	0.029378	2.366	0.189282
RMAh	Right middle cerebral artery hemisphere	0.789864	0.2705	0.876205
RPAh	Right posterior cerebral artery hemisphere	0.073691	1.899	0.238168
LPAh	Left posterior cerebral artery hemisphere	0.268861	1.141	0.434479
LMAh	Left middle cerebral artery hemisphere	0.035139	2.278	0.189282
RAAc	Right anterior cerebral artery callosal	0.234584	1.23	0.421208
LAAc	Left anterior cerebral artery callosal	0.145057	1.523	0.29406
RmaLL	Right middle cerebral artery lateral lenticulostriate	0.567408	0.5826	0.76411
LMaLL	Left middle cerebral artery lateral lenticulostriate	0.011198	2.826	0.180959
RPAth	Right posterior cerebral artery thalamic and midbrain perforators	0.963764	0.04607	0.973402
LPAth	Left posterior cerebral artery thalamic and midbrain perforators	0.811178	0.2424	0.876205
RAAml	Right anterior cerebral artery medial lenticulostriate	0.813309	0.2397	0.876205
LAAml	Left anterior cerebral artery medial lenticulostriate	0.442849	0.7847	0.650586
RPAc	Right posterior cerebral artery callosal	0.052308	2.078	0.211326
LPAc	Left posterior cerebral artery callosal	0.108558	1.689	0.292382

Table S4 Statistical results after introducing covariates of the comparison between patients with poor compensatory status and patients with normal compensatory status, related to Figure 2.

	Region	T value	P value	P value after FDR correction
RAAh	Right anterior cerebral artery hemisphere	1.68	0.10	>0.05
LAAh	Left anterior cerebral artery hemisphere	1.79	0.08	>0.05
RMAh	Right middle cerebral artery hemisphere	0.09	0.93	>0.05
RPAh	Right posterior cerebral artery hemisphere	-2.07	0.04	>0.05
LPAh	Left posterior cerebral artery hemisphere	-1.57	0.12	>0.05
LMAh	Left middle cerebral artery hemisphere	1.21	0.23	>0.05
RAAc	Right anterior cerebral artery callosal	0.66	0.51	>0.05
LAAc	Left anterior cerebral artery callosal	1.27	0.21	>0.05
RmaLL	Right middle cerebral artery lateral lenticulostriate	0.70	0.49	>0.05
LMaLL	Left middle cerebral artery lateral lenticulostriate	2.36	0.02	>0.05
RPAth	Right posterior cerebral artery thalamic and midbrain perforators	-0.16	0.87	>0.05
LPAth	Left posterior cerebral artery thalamic and midbrain perforators	0.18	0.86	>0.05
RAAml	Right anterior cerebral artery medial lenticulostriate	0.22	0.83	>0.05
LAAml	Left anterior cerebral artery medial lenticulostriate	0.71	0.48	>0.05
RPac	Right posterior cerebral artery callosal	-1.89	0.06	>0.05
LPac	Left posterior cerebral artery callosal	-1.79	0.08	>0.05

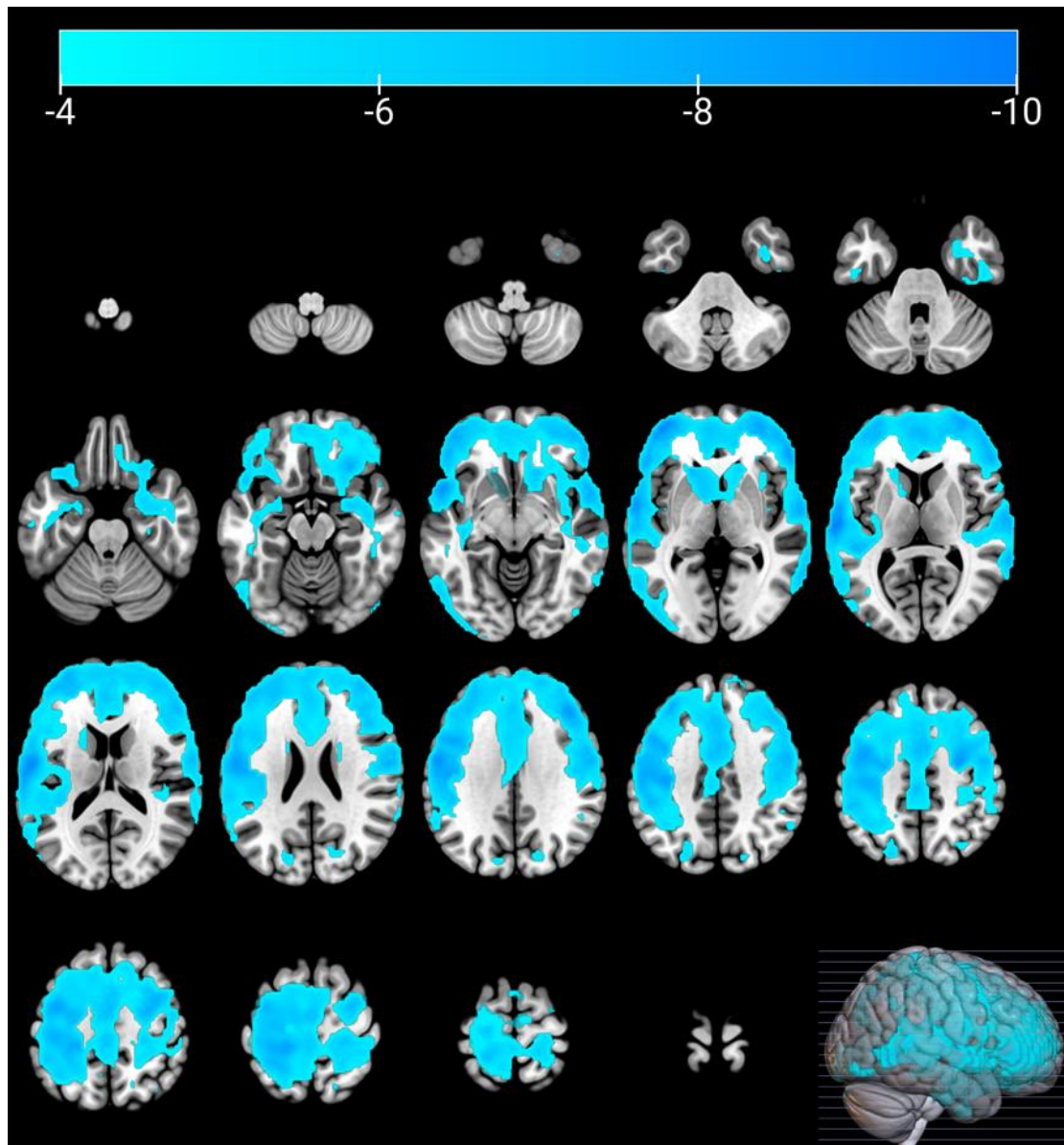


Figure S1 CVR mapping of T-values representing the difference between patients with moyamoya disease and healthy controls in the MNI space with certain occipital areas as reference, related to the data processing of the STAR Methods.

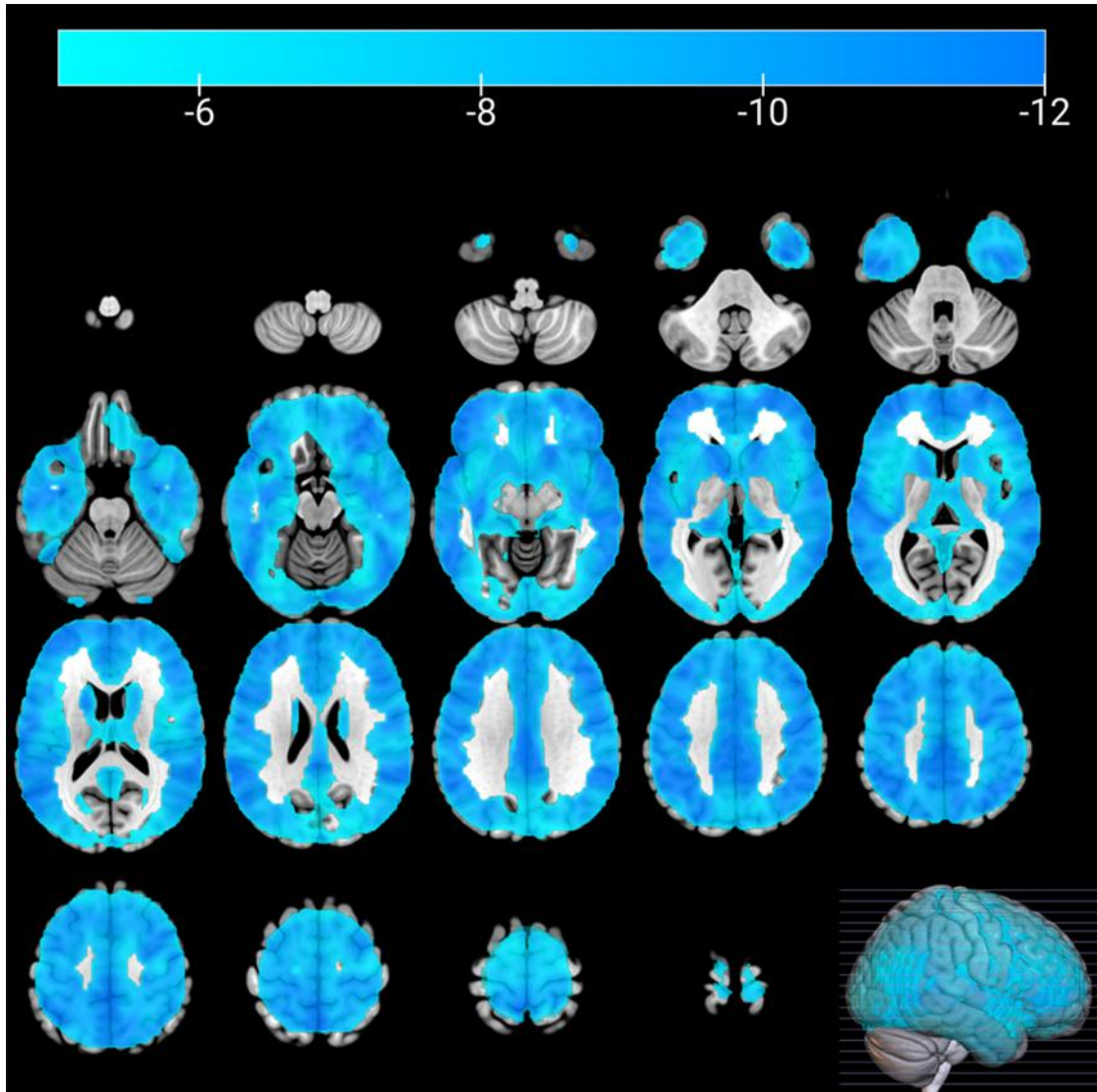


Figure S2 Pre experiment: CVR mapping of T-values representing the difference between patients with moyamoya disease and healthy controls in the MNI space with cerebellum as reference, related to the data processing of the STAR Methods.