

SUPPLEMENTARY DATA

**Deep Venous Perivascular Space Dysfunction Reflects
Glymphatic Aging and Predicts Cognitive Vulnerability:
In Vivo Human Evidence**

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Supplemental Table 1. Relationship between patient characteristics and perivascular spaces

Variables	n (%)	BG-aPVS Number	<i>P</i> <i>value</i>	BG-vPVS Number	<i>P</i> <i>value</i>	CSO-aPVS Number	<i>P</i> <i>value</i>	CSO-vPVS Number	<i>P</i> <i>value</i>
Total	91 (100)	0.0 (0.0, 0.0)		4.0 (0.0, 7.0)		0.0 (0.0, 4.50)		6.0 (1.0, 12.0)	
Female			0.422		0.612		0.605		0.531
0	47 (51.65)	0.0 (0.0, 0.0)		4.0 (0.0, 7.0)		0.0 (0.0, 4.50)		5.0 (1.0, 12.5)	
1	44 (48.35)	0.0 (0.0, 0.0)		3.50 (0.0, 6.25)		0.50 (0.0, 4.25)		7.0 (1.75, 10.25)	
Smoking history			0.515		0.332		0.6		0.159
0	59 (64.84)	0.0 (0.0, 0.0)		4.0 (0.0, 7.0)		0.0 (0.0, 4.50)		7.0 (1.50, 13.0)	
1	32 (35.16)	0.0 (0.0, 0.0)		2.0 (0.0, 6.25)		0.0 (0.0, 4.25)		4.0 (1.0, 8.25)	
Drinking history			0.374		0.684		0.124		0.734
0	67 (73.63)	0.0 (0.0, 0.0)		4.0 (0.0, 7.0)		1.0 (0.0, 5.50)		6.0 (1.0, 12.0)	
1	24 (26.37)	0.0 (0.0, 0.25)		4.0 (0.75, 7.0)		0.0 (0.0, 1.25)		6.0 (2.0, 12.0)	
Hypertension			0.671		< 0.01		0.928		0.025
0	48 (52.75)	0.0 (0.0, 0.0)		1.0 (0.0, 5.25)		0.50 (0.0, 4.25)		3.0 (1.0, 7.25)	
1	43 (47.25)	0.0 (0.0, 0.0)		6.0 (2.5, 8.5)		0.0 (0.0, 4.50)		7.0 (2.50, 14.0)	
Diabetes			0.224		0.724		0.623		0.103
0	59 (64.84)	0.0 (0.0, 0.0)		4.0 (0.0, 7.0)		0.0 (0.0, 5.0)		6.0 (1.5, 13.5)	
1	31 (34.07)	0.0 (0.0, 0.0)		5.0 (0.50, 7.0)		0.0 (0.0, 4.0)		5.0 (0.0, 7.0)	

BG-aPVS, arial perivascular spaces in the basal ganglia; BG-vPVS, venous perivascular spaces in the basal ganglia; CSO-aPVS, arial perivascular spaces in the centrum semiovale; CSO-vPVS, venous perivascular spaces in the centrum semiovale.

Supplemental Table 2. Baseline characteristic comparison between the T-MoCA completed (n=60) and non-completed (n=31) subgroups

	T-MoCA completed group (n=60)	T-MoCA non-completed group (n=31)	<i>P</i> <i>value</i>
Age	57.0 ± 1.6	59.7 ± 2.3	0.335
Female	29 (48.3%)	15 (48.4%)	0.996
Smoking history	19 (31.7%)	13 (41.9%)	0.331
Drinking history	11 (18.3%)	13 (41.9%)	0.015
Hypertension	31 (51.7%)	12 (38.7%)	0.241
Diabetes	24 (40.7%)	7 (22.6%)	0.086
BG-PVS grade	1 (1, 1)	1 (1, 1)	0.141
CSO-PVS grade	2 (1, 3)	2 (1, 3)	0.794
BG-aPVS number	0.0 (0.0, 0.0)	0.0 (0.0, 0.0)	0.426
BG-vPVS number	4.5 (0.0, 7.0)	4.0 (0.0, 7.0)	0.476
CSO-aPVS number	0.5 (0.0, 5.0)	0.0 (0.0, 3.5)	0.551
CSO-vPVS number	6.0 (1.0, 13.25)	6.0 (1.5, 8.0)	0.444

T-MoCA, telephone version for the Montreal Cognitive Assessment; BG-PVS, perivascular spaces in the basal ganglia; CSO-PVS, perivascular spaces in the centrum semiovale; BG-aPVS, arterial perivascular spaces in the basal ganglia; BG-vPVS, venous perivascular spaces in the basal ganglia; CSO-aPVS, arial perivascular spaces in the centrum semiovale; CSO-vPVS, venous perivascular spaces in the centrum semiovale.

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Supplemental Table 3. Correlation analysis between cognition and perivascular spaces

	T-MoCA score	
	r	<i>P</i> value
BG-aPVS number	0.017	0.877
BG-vPVS number	-0.244	0.010
CSO-aPVS number	0.020	0.837
CSO-vPVS number	-0.051	0.584

T-MoCA, telephone version for the Montreal Cognitive Assessment; BG-aPVS, arterial perivascular spaces in the basal ganglia; BG-vPVS, venous perivascular spaces in the basal ganglia; CSO-aPVS, arterial perivascular spaces in the centrum semiovale; CSO-vPVS, venous perivascular spaces in the centrum semiovale.