Supplementary Table 1. Results from meta-regression analyses for association between T2DM-normal brain volume differences and age, sex ratio, T2DM duration, fasting glucose, and HbA1c

Brain areas	Group	k	Estimate	SE	*Z*	*P* value	95% CI	Tau^2	Tau	I^2, %	H^2	R^2,%	Residual heterogeneity		
													df	QE	*P* value
Total brain volume	Intercept	15	−28.4522	13.1054	−2.1710	0.0299	−54.1383 to −2.7661	276.0419	16.6145	98.53	67.99	37.21	12	272.9295	<0.0001
	Age		1.2433	0.4021	3.0916	0.0020	0.4551 to 2.0315								
	Sex		4.3700	26.7030	0.1637	0.8700	−47.9669 to 56.7068								
Grey matter volume	Intercept	24	−30.6354	12.4027	−2.4701	0.0135	−54.9443 to −6.3266	375.1611	19.3691	98.28	58.20	7.40	21	401.9208	<0.0001
	Age		0.6395	0.3541	1.8058	0.0710	−0.0546 to 1.3335								
	Sex		29.0573	25.6517	1.1328	0.2573	−21.2192 to 79.3338								
	Intercept	18	−40.6479	17.4034	−2.3356	0.0195	−74.7580 to −6.5377	345.2983	18.5822	94.87	19.50	15.73	14	231.9901	<0.0001
	Age		0.9372	0.7233	1.2957	0.1951	−0.4805 to 2.3548								
	Sex		37.7369	34.0113	1.1095	0.2672	−28.9240 to 104.3978								
	T2DM duration		−3.5779	1.5473	−2.3124	0.0208	−6.6105 to −0.5453								
	Intercept	23	880.2444	490.5010	1.7946	0.0727	−81.1199 to 1,841.6087	8,973.5293	94.7287	99.65	286.23	0	17	7,358.6106	<0.0001
	Age		−3.5900	2.8751	−1.2487	0.2118	−9.2251 to 2.0451								
	Sex		−63.6140	201.4391	−0.3158	0.7522	−458.4274 to 331.1994								
	Fasting glucose		−43.4730	97.3795	−0.4464	0.6553	−234.3334 to 147.3873								
	T2DM		103.6507	610.3106	0.1698	0.8651	−1,092.5361 to 1,299.8376								
	FG×T2DM		880.2444	490.5010	1.7946	0.0727	−81.1199 to 1,841.6087								
	Intercept	27	1,951.6621	1,208.9923	1.6143	0.1065	−417.9193 to 4,321.2434	8,797.2801	93.7938	99.65	286.43	0	21	10,657.6425	<0.0001
	Age		−0.6471	3.5840	−0.1806	0.8567	−7.6716 to 6.3774								
	Sex		54.0192	139.3039	0.3878	0.6982	−219.0115 to 327.0498								
	HbA1c		−244.3354	221.1744	−1.1047	0.2693	−677.8292 to 189.1585								
	T2DM		−1,455.6328	1,318.5796	−1.1039	0.2696	−4,040.0014 to 1,128.7357								
	HbA1c×T2DM		252.6103	230.8988	1.0940	0.2739	−199.9430 to 705.1636								
White matter volume	Intercept	22	−4.3798	10.2570	−0.4270	0.6694	−24.4831 to 15.7234	163.8641	12.8009	94.87	19.49	0	19	166.3466	<0.0001
	Age		−0.0847	0.3880	−0.2183	0.8272	−0.8452 to 0.6758								
	Sex		−13.5019	20.4030	−0.6618	0.5081	−53.4910 to 26.4872								
	Intercept	17	−13.2571	13.5130	−0.9811	0.3266	−39.7420 to 13.2278	183.7221	13.5544	85.04	6.68	0	13	94.3701	<0.0001
	Age		0.0461	0.5583	0.0825	0.9342	−1.0482 to 1.1404								
	Sex		−2.1241	25.9615	−0.0818	0.9348	−53.0077 to 48.7594								
	T2DM duration		−1.5109	1.1845	−1.2755	0.2021	−3.8325 to 0.8107								
	Intercept	21	552.2687	432.6706	1.2764	0.2018	−295.7501 to 1,400.2874	5,803.7729	76.1825	99.32	147.69	0	15	1,862.8949	<0.0001
	Age		−2.4849	2.4702	−1.0059	0.3144	−7.3264 to 2.3566								

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Supplementary Table 1. Continued

Brain areas	Group	k	Estimate	SE	*Z*	*P* value	95% CI	Tau^2	Tau	I^2, %	H^2	R^2,%	Residual heterogeneity		
													df	QE	*P* value
	Sex		−194.3266	163.8832	−1.1858	0.2357	−515.5317 to 126.8785								
	Fasting glucose		15.2511	86.7449	0.1758	0.8604	−154.7658 to 185.2681								
	T2DM		204.5703	532.7827	0.3840	0.7010	−839.6645 to 1,248.8051								
	FG×T2DM		−34.6375	95.3721	−0.3632	0.7165	−221.5633 to 152.2883								
	Intercept	25	−307.9656	1,078.5542	−0.2855	0.7752	−2,421.8930 to 1,805.9617	6,623.4172	81.3844	99.35	153.28	0	19	3,016.4055	<0.0001
	Age		−1.1020	3.2114	−0.3432	0.7315	−7.3962 to 5.1922								
	Sex		−33.5885	121.3245	−0.2768	0.7819	−271.3801 to 204.2030								
	HbA1c		151.1319	197.4642	0.7654	0.4441	−235.8908 to 538.1547								
	T2DM		741.8470	1,174.2185	0.6318	0.5275	−1,559.5790 to 3,043.2730								
	HbA1c×T2DM		−139.6912	206.0953	−0.6778	0.4979	−543.6306 to 264.2482								
Hippocampal volume	Intercept	14	0.2034	0.2714	0.7493	0.4537	−0.3286 to 0.7354	0.0252	0.1589	97.58	41.34	5.25	11	293.3980	<0.0001
	Age		0.0075	0.0074	1.0170	0.3092	−0.0070 to 0.0220								
	Sex		−0.7411	0.5488	−1.3505	0.1768	−1.8167 to 0.3344								
	Intercept	10	0.1585	0.1886	0.8403	0.4008	−0.2112 to 0.5282	0.0104	0.1022	86.22	7.25	38.69	6	37.8541	<0.0001
	Age		−0.0246	0.0140	−1.7539	0.0795	−0.0520 to 0.0029								
	Sex		−0.6218	0.4249	−1.4633	0.1434	−1.4546 to 0.2110								
	T2DM duration		0.0255	0.0239	1.0660	0.2864	−0.0214 to 0.0724								
CSF volume	Intercept	10	103.6167	43.8295	2.3641	0.0181	17.7125 to 189.5209	145.0190	12.0424	87.01	7.70	31.02	7	49.3500	<0.0001
	Age		−0.8279	0.4903	−1.6885	0.0913	−1.7889 to 0.1331								
	Sex		−184.1955	203.8374	−2.1971	0.0580	−348.5138 to −19.8773								
WMH volume	Intercept	12	−0.4319	2.2127	−0.1952	0.8453	−4.7687 to 3.9050	3.2324	1.7979	98.52	67.54	0	9	483.7396	<0.0001
	Age		0.0562	0.0973	0.5769	0.5640	−0.1346 to 0.2469								
	Sex		0.3008	4.9121	0.0612	0.9512	−9.3267 to 9.9283								

T2DM, type 2 diabetes mellitus; HbA1c, glycosylated hemoglobin; SE, standard error; CI, confidence interval; QE, test statistic of Cochran's test of heterogeneity; FG, fasting glucose; CSF, cerebrospinal fluid; WMH, white matter hyperintensity.