

SUPPLEMENTARY DATA

**Supplementary Table 1.** Cognitive domains and tests

Cognitive Domain	Tests
Memory factor	Hopkins Immediate Verbal Recall
	Hopkins Delayed Verbal Recall
	Hopkins Recognition
Visuospatial and planning factor	Rey Complex Figure Copy Task
	Rey Complex Figure Recall Task
Speed factor	Digit Symbol Coding
	Digit Symbol Search
Executive function	COWAT Word test
	COWAT Category Test
	Digit Span Recall
	Stroop Dot Time
	Stroop Word Time
	Stroop Color time

**Supplementary Table 2.** Stereotaxic coordinates and anatomical locations of gray matter loss in T2DM

Hemisphere	Stereotaxic voxel coordinates			Regions Involved
	X	Y	Z	
Left	-14	2	-16	Parahippocampal gyrus
Left	-64	-40	-10	Middle temporal gyrus
Left	-64	-24	-15	Inferior temporal gyrus
Right	44	-22	12	Transverse temporal gyrus
Left	-2	-35	39	Cingulate gyrus
Left	-5	-54	42	Precuneus
Right	8	48	2	Anterior cingulate
Left	-7	13	9	Caudate body
Left	-20	8	5	Putamen
Left	-40	-14	11	Insula
Left	-49	-9	6	Precentral gyrus
Left	-54	4	20	Inferior frontal gyrus
Left	-1	49	2	Medial frontal gyrus
Right	42	42	4	Middle frontal gyrus

SUPPLEMENTARY DATA

**Supplementary Table 3.** Stereotaxic coordinates and anatomical locations of white matter loss attributable to T2DM

Hemisphere	Stereotaxic voxel coordinates			Regions Involved
	X	Y	Z	
Right	6	12	52	Superior frontal lobe
Right	44	32	6	Inferior frontal lobe
Right	8	0	60	Medial frontal lobe
Left	-26	44	0	Middle frontal lobe
Right	21	-33	18	Cingulum
Right	32	-22	0	Corpus callosum
Right	38	-2	8	Insula
Left	-34	-2	8	Insula
Right	21	-45	2	Pulvinar nucleus
Right	28	-34	59	Parietal lobe

**Supplementary Table 4.** Magnitude of change in associations between T2DM and cognitive scores by step wise introduction of brain MRI measures

Brain MRI variable	RCFT copy		RCFT delay		Stroop dot time <sup>a</sup>	
	$\beta$ (T2DM)	% change <sup>b</sup>	$\beta$ (T2DM)	% change <sup>b</sup>	$\beta$ (T2DM)	% change <sup>b</sup>
T2DM	-4.50		-3.28		1.13	
Total gray matter volume <sup>c</sup>	-2.87	36.2	-1.48	54.9	0.32	71.7
White matter volume	-2.90	1.0	-1.48	0	0.32	0
WMH volume	-2.89	0.3	-1.46	1.4	0.29	9.4
Infarct (Yes/No)	-2.85	1.4	-1.52	4.1	0.24	17.2

RCFT – Rey Complex Figure Task,  $\beta$  - beta-coefficient of T2DM

All models adjusted for age, sex, education, mood and total intracranial volume

<sup>a</sup> Higher scores in Stroop dot time indicate worse function

<sup>b</sup> Indicates % additional change in  $\beta$  coefficient of T2DM with introduction of each MRI variable

<sup>c</sup> Includes gray and hippocampal volume