

SUPPLEMENTARY DATA

Brain-Derived Neurotrophic Factor Val66Met is Associated with Variation in Cortical Structure in Healthy Aging Subjects

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Supplementary Table 1. Differences between BDNF Val/Val genotype and Met carriers and MRI structural measurements in healthy aging subjects in preliminary analysis.

	Mean		Genotype	
	Val/Val	Met carriers	Mean Differences (95% CI)	P-values
eTIV	1555286.7	1579633.4	-24346.8 (-104741.1-56047.6)	0.3
Total GM Vol	598332.5	603526.8	-5194.4 (-32346.4-21957.7)	0.4
Cortex Vol	436555.6	441674.7	-5119.1 (-26695.0-16456.7)	0.3
Cerebral WM Vol	443860.5	452546.7	-8686.2 (-39150.7-21778.2)	0.3
Entorhinal Thickness	6.3	6.2	0.1 (-0.08-0.3)	0.1
Entorhinal Vol	3900.2	3639.8	260.4 (-72.0-592.9)	0.06
Para-hippocampal Thickness	5.4	5.2	0.2 (0.03-0.4)	0.01
Para-hippocampal Vol	4071.5	4005.2	66.4 (-161.3-294.0)	0.3
Fusiform Thickness	5.3	5.3	0.04 (-0.08-0.2)	0.3
Fusiform Vol	18450.3	18790.7	-340.3 (-1602.4-921.8)	0.3
Inferior-temporal Thickness	5.3	5.2	0.07 (-0.05-0.2)	0.1
Inferior-temporal Vol	20550.6	20532.0	18.6 (-1483.8-1521.0)	0.5
Posterior-cingulate Thickness	4.5	4.5	0.04 (-0.05-0.1)	0.2
Posterior-cingulate Vol	2855.4	2762.7	92.7 (-113.5-298.8)	0.2
Cerebellum Cortex Vol	107419.2.2	107248.4	170.8 (-5119.8-5461.5)	0.5
Thalamus Vol	13300.1	13402.6	-102.6 (-729.5-524.3)	0.4
Caudate Vol	6580.5	6747.2	-166.8 (-618.7-285.1)	0.2
Putamen Vol	8977.6	9203.4	-225.7 (-812.5-361.1)	0.2
Pallidum Vol	3697.9	3690.5	7.4 (-228.0-242.7)	0.5
Hippocampus Vol	7986.3	7806.7	179.6 (-246.3-605.5)	0.2
Amygdala Vol	3111.9	3172.6	-60.7 (-256.7-135.2)	0.3
GM Cingulate Vol	18131.3	18510.4	-379.1 (-1507.1-749.0)	0.3
GM Parietal Vol	101858.3	101761.8	96.5 (-5234.0-5427.0)	0.5
Third Ventricle Vol	1515.0	1578.1	-63.0 (-316.4-190.3)	0.3
Fourth Ventricle Vol	1931.6	1935.8	-4.2 (-211.8-203.4)	0.5
WM hypointensity	3081.7	4308.7	-1226.9 (-3287.9-834.1)	0.1
Skeletonized AD	0.008	0.008	<0.00001 (-0.00001-<0.00001)	0.2
Skeletonized FA	0.5	0.5	0.004 (-0.005-0.01)	0.2
Skeletonized MD	0.0005	0.0005	<0.00001 (-0.00001-<0.00001)	0.1
Skeletonized MO	0.4	0.4	0.004 (-0.003-0.01)	0.1
Skeletonized RD	0.003	0.004	<0.00001 (-0.00001-<0.00001)	0.1
PSMD	0.002	0.002	-0.00001 (-0.00002-<0.00001)	0.1
DDF	1.0	1.0	0.005 (-0.004-0.01)	0.1

Abbreviations: AD = Axial Diffusivity; DDF = Diffusion Degree of Freedom; eTIV = Estimated total intracranial volume; FA = Fractional Anisotropy; GM = Grey matter; MD = Mean Diffusivity; MO = Mode of Anisotropy; PSMD = Peak Width of Skeletonized Mean Diffusivity; RD = Radial Diffusivity; Vol = Volume; WM = White matter; *P < 0.05.

Supplementary Table 2. Differences between BDNF Val/Val genotype and Met carriers and visual structural, functional and neuropsychological measurements in healthy aging subjects in preliminary analysis.

Parameters		Mean		Genotype	
		Val/Val	Met carriers	Mean Differences (95% CI)	P-values
OCT	Global RNFL	96.3	96.8	-0.4 (-4.2-3.3)	0.4
	Temporal RNFL	69.2	73.1	-3.9 (-8.6-0.7)	0.05*
	Temporal superior RNFL	129.3	132.8	-3.5 (-11.9-5.0)	0.2
	Temporal inferior RNFL	147.3	143.0	4.3 (-3.9-12.5)	0.2
	Nasal RNFL	76.6	77.8	-1.2 (-6.1-3.6)	0.3

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	Nasal superior RNFL	108.2	107.3	1.0 (-7.6-9.5)	0.4
	Nasal inferior RNFL	114.2	110.0	4.2 (-4.5-12.9)	0.2
	Superior RNFL	119.2	120.0	-0.8 (-6.6-5.0)	0.4
	Inferior RNFL	130.9	126.5	4.4 (-2.8-11.6)	0.1
	Temporal p-pole	66.4	67.1	-0.7 (-2.8-1.4)	0.3
	Temporal superior p-pole	66.7	67.6	-0.9 (-3.1-1.4)	0.2
	Temporal inferior p-pole	66.5	67.0	-0.5 (-2.7-1.8)	0.3
OCT Angiography	VD SCP, %	24.1	22.2	-1.5 (-4.7-1.8)	0.2
	VD DCP, %	21.2	20.5	-0.9 (-5.7-3.8)	0.3
	Superficial FAZ area, mm ²	0.4	0.4	0.03 (-0.06-0.1)	0.2
	Deep FAZ area, mm ²	0.4	0.4	0.04 (-0.05-0.1)	0.2
	FAZ perimeter SCP, mm	2.2	2.3	0.1 (-0.2-0.5)	0.2
	FAZ perimeter DCP, mm	2.2	2.3	0.1 (-0.1-0.4)	0.2
	FAZ circularity index SCP	0.9	0.9	0.01 (-0.02-0.4)	0.5
	FAZ circularity index DCP	0.9	0.9	0.03 (-0.006-0.06)	0.06
	mfVEP	Amplitude	150.6	132.7	17.9 (-1.8-37.6)
Latency		143.1	141.9	1.3 (-3.0-5.5)	0.3
Neuropsychological tests	Premorbid predicted IQ	113.1	110.9	2.1 (-1.4-5.7)	0.1
	LM-Immediate	13.4	12.6	0.7 (-0.9-2.4)	0.2
	LM-Delay	11.9	11.0	1.0 (-0.8-2.8)	0.1
	LM-Recognition	12.3	11.6	0.7 (-0.01-1.4)	0.03*
	LM-Delay/Immediate Percent	88.5	83.3	-5.1 (-14.2-3.9)	0.1
	CVLT-TL	42.8	40.6	2.2 (-3.1-7.6)	0.2
	CVLT-sdfr	9.2	8.5	0.6 (-0.9-2.2)	0.2
	CVLT-ldfr	9.8	8.8	1.0 (-0.6-2.6)	0.1
	F	15.2	13.8	1.4 (-0.8-3.6)	0.1
	A	13.2	11.9	1.3 (-0.6-3.2)	0.09
	S	15.6	14.3	1.2 (-1.1-3.6)	0.2
	Letter Fluency	44.0	40.1	3.9 (-1.8-9.7)	0.09
	Category Fluency	20.3	18.7	1.6 (-0.4-3.5)	0.06
	SDMT	49.2	47.6	1.6 (-2.9-6.1)	0.2
	DS-Total	28.4	27.6	0.8 (-1.4-3.0)	0.2
	TMT-Part A, s	31.7	34.2	-2.5 (-6.7-1.6)	0.1
	TMT-Part B, s	75.6	91.9	-16.4 (-36.4-3.7)	0.05
	BNT-NCS	27.4	27.5	-0.2 (-1.5-1.1)	0.4
	MMSE	28.5	28.3	0.2 (-0.6-1.1)	0.3
	GDS	1.7	1.9	-0.2 (-1.2-0.8)	0.4
	RCFT-Copy	33.5	34.1	-0.6 (-2.3-1.0)	0.2
RCFT-Immediate recall	17.4	18.0	-0.6 (-3.6-2.5)	0.4	
RCFT-Delayed recall	16.5	17.0	-0.5 (-3.7-2.7)	0.4	

Abbreviations: BNT NCS = Boston naming test-no cue score; CVLT = California verbal learning test; DCP = Deep capillary plexus; DS = Digit span; FAZ = Foveal Avascular Zone; GDS = Geriatric depression scale; ldfr = long-delay free recall; LM = Logical memory; mfVEP = Multifocal visual evoked potential; MMSE = Mini-mental state examination; OCT = Optical coherence tomography; p-pole = posterior pole; RCFT = Rey complex figure test; RNFL = Retinal nerve fibre layer; sdfr = short-delay free recall; SCP = Superficial capillary plexus; SDMT = Symbol digit modality test; TL = Total learning; TMT = Trail making test; VD = Vessel Density; *P < 0.05.