Supplementary materials

SPM Data Matrix

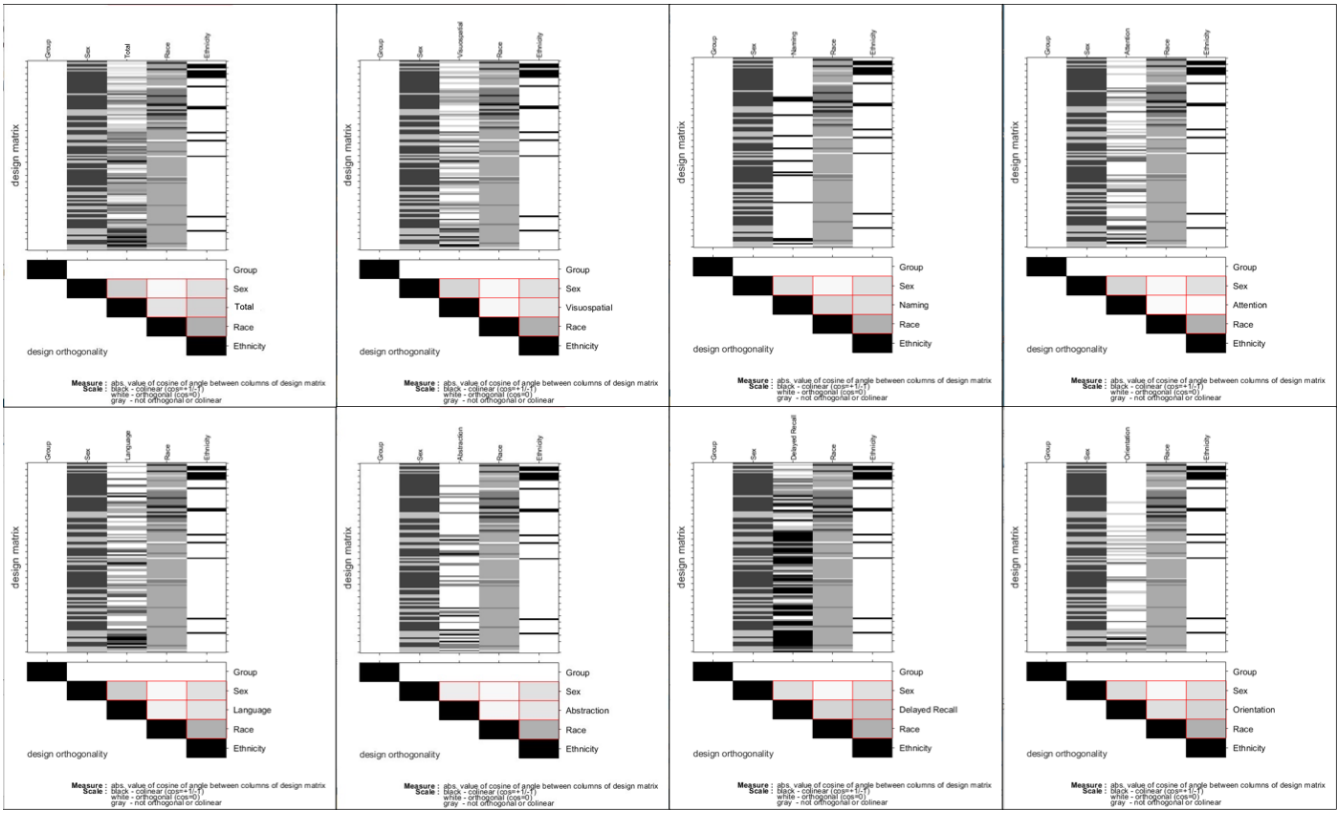


Figure S1. SPM data matrix for all eight general linear models analyzing gray matter (GM) volume associations with each cognitive domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14).

View Results Peak Regions:

Grey Matter Volume Peak Region of Interest TFCE

Cognitive Domain	k_E	p(FDR-corr)	TFCE	MNI (mm) x	y	z
Visuospatial / Executive	193852	0.002	2675.79	64	-40	-9
			2635.75	*62*	*-51*	*-16*
			2542.80	*-9*	*-69*	*34*
Naming	42769	0.048	1644.84	-66	-14	-20
			1593.04	*-69*	*-26*	*-9*
			1585.90	*-48*	*3*	*-21*
Attention	127919	0.016	2147.91	-50	-63	10
			2143.38	*9*	*-34*	*45*
			2135.49	*6*	*-48*	*46*
Language	128743	0.053*	1359.20	-57	-54	34
			1329.55	*-34*	*-48*	*50*
			1284.27	*-48*	*-48*	*56*
Abstraction	107176	0.026	1768.60	-56	4	-26
			1766.37	*-68*	*-21*	*-18*
			1757.55	*-60*	*-6*	*-15*

Memory /	124686	0.007				
			4352.03	16	20	-16
Delayed Recall			*4346.32*	*8*	*20*	*-20*
			4325.17	*20*	*12*	*-20*
Orientation	300363	< .001	8872.71	24	-9	-12
			8536.35	*-27*	*-9*	*-18*
			8271.68	*-22*	*0*	*-21*
Total Score	325370	< .001	5928.01	-58	-56	36
			5917.90	62	-51	-18
			5836.75	54	-54	-20

Table S1. Peak gray matter (GM) volume associations with each cognitive domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrasts generated from multiple general linear models adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancement (TFCE) and passed False Rate Discovery (FDR) correction. "*" indicates failure to pass threshold of 0.05. Table indicates peak cluster brain region for each cognitive domain as determined by the AAL3 brain atlas region.

Slice Overlay AAL3 ATLAS Regions

Visuospatial/Executive

AAL3 Atlas Regions	**Cluster-Size**	**p**
Left Middle temporal gyrus	193852	0.0021
Right Middle temporal gyrus		
Right Precuneus		
Left Precuneus		
Right Inferior temporal gyrus		
Left Inferior temporal gyrus		
Right Superior frontal gyrus-dorsolateral		
Right Postcentral gyrus		
Right Middle frontal gyrus		
Left Superior frontal gyrus-dorsolateral		
Left Middle occipital gyrus		
Left Inferior parietal gyrus-excluding supramarginal and angular gyri		
Right Fusiform gyrus		
Left Superior parietal gyrus		
Right Middle occipital gyrus		
Left Superior temporal gyrus		
Right Angular gyrus		
Right Superior parietal gyrus		
Left Middle frontal gyrus		
Right Middle cingulate & paracingulate gyri		
Right Lingual gyrus		
Right Precentral gyrus		
Left Middle cingulate & paracingulate gyri		
Right Superior temporal gyrus		
Left Fusiform gyrus		
Left Angular gyrus		
Left Lingual gyrus		
Right Supplementary motor area		
Left Inferior frontal gyrus-triangular part	218	0.031
Left Inferior frontal gyrus-opercular part		
Left Paracentral lobule	163	0.033
Right Supplementary motor area		
Left Postcentral gyrus		
Right Superior frontal gyrus-dorsolateral	3	0.037
Right Middle frontal gyrus	16	0.042
Left Superior parietal gyrus	2	0.048
Right Insula	2	0.049
Left Superior temporal gyrus	2	0.049
Right Temporal pole: superior temporal gyrus	1	0.049

Table S2. Gray matter volume (GMV) associations with the Visuospatial/Executive domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrast generated from general linear model adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancement (TFCE) and passed False Rate Discovery (FDR) correction at 0.053. Table indicates center of gravity cluster brain region as determined by the aal3 brain atlas region.

	Naming	
AAL3 Atlas Regions	**Cluster-Size**	**p**
Left Middle temporal gyrus	42769	0.048
Left Middle frontal gyrus		
Left Temporal pole: superior temporal gyrus		
Left Superior frontal gyrus-dorsolateral		
Left Posterior orbital gyrus		
Left Middle cingulate & paracingulate gyri		
Right Calcarine fissure and surrounding cortex		
Left Inferior temporal gyrus		
Left Caudate nucleus		
Right Middle temporal gyrus		
Left Superior frontal gyrus-medial		
Left Anterior cingulate cortex-supracallosal		
Right Superior frontal gyrus-medial orbital		
Left IFG pars orbitalis		
Right Hippocampus		
Right Anterior orbital gyrus		
Right Posterior orbital gyrus		
Right Caudate nucleus		
Right Parahippocampal gyrus		
Right Superior frontal gyrus-medial		
Left Superior temporal gyrus		
Right Medial orbital gyrus		
Right Inferior temporal gyrus		
Right Temporal pole: middle temporal gyrus	83	0.048
Right Fusiform gyrus		
Left Parahippocampal gyrus	436	0.048
Left Hippocampus		
Right Temporal pole: superior temporal gyrus	384	0.048
Right Temporal pole: middle temporal gyrus		
Right IFG pars orbitalis		
Left Medial orbital gyrus	108	0.048
Left Gyrus rectus		
Left Gyrus rectus	5	0.048
Left Medial orbital gyrus	37	0.048
Left Gyrus rectus		
Right Inferior temporal gyrus	277	0.048
Right Middle temporal gyrus		
Left Parahippocampal gyrus	33	0.048
Left Calcarine fissure and surrounding cortex	253	0.048
Left Olfactory cortex	301	0.048
Right Inferior occipital gyrus	6	0.048
Right Inferior temporal gyrus		
Left Lingual gyrus	153	0.048
Left Calcarine fissure and surrounding cortex		
Left Superior occipital gyrus		
Left Lenticular nucleus-Pallidum	171	0.048
Left Ventral posterolateral		
Left Ventral lateral		
Right Lenticular nucleus-Putamen	63	0.048
Left Middle occipital gyrus	26	0.048
Right Rolandic operculum	76	0.048
Right Temporal pole: superior temporal gyrus		
Right Heschls gyrus		
Left Superior temporal gyrus	422	0.048
Left SupraMarginal gyrus		

Left Middle temporal gyrus		
Left Inferior frontal gyrus-triangular part	43	0.048
Left Cuneus	17	0.048
Left Superior occipital gyrus		
Right Precuneus	126	0.048
Right Inferior frontal gyrus-triangular part	12	0.048
Right Middle cingulate & paracingulate gyri	68	0.048
Right Middle cingulate & paracingulate gyri	108	0.048
Right Supplementary motor area		
Right Superior frontal gyrus-dorsolateral		
Left Supplementary motor area	106	0.048
Right Supplementary motor area		
Right Supplementary motor area	115	0.048
Right Superior frontal gyrus-medial		
Right Supplementary motor area	9	0.048
Right Inferior frontal gyrus-triangular part	5	0.049
Right Cuneus	22	0.049
Left Lingual gyrus	21	0.049
Left Lobule IV-V of cerebellar hemisphere		
Left Calcarine fissure and surrounding cortex	30	0.049
Left Precuneus		
Right Middle cingulate & paracingulate gyri	10	0.049
Right Superior temporal gyrus	17	0.049
Right Insula	15	0.049
Right Rolandic operculum		
Left Middle occipital gyrus	3	0.049
Right Lingual gyrus	5	0.049
Left Middle occipital gyrus	2	0.049
Right Temporal pole: middle temporal gyrus	4	0.049
Right Middle temporal gyrus	1	0.050
Left Inferior occipital gyrus	1	0.050
Right Precuneus	3	0.050

Table S3. Gray matter volume (GMV) associations with the Naming domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrast generated from general linear model adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancement (TFCE) and passed False Rate Discovery (FDR) correction at 0.053. Table indicates center of gravity cluster brain region as determined by the aal3 brain atlas region.

Attention

AAL3 Atlas Regions	**Cluster-Size**	**p**
Left Middle temporal gyrus	127919	0.016
Left Precuneus		
Right Middle temporal gyrus		
Right Precuneus		
Left Inferior parietal gyrus-excluding supramarginal and angular gyri		
Left Inferior temporal gyrus		
Right Postcentral gyrus		
Right Inferior temporal gyrus		
Left Superior temporal gyrus		
Left Middle cingulate & paracingulate gyri		
Right Middle occipital gyrus		
Left Middle frontal gyrus		
Left Superior parietal gyrus		
Right Middle cingulate & paracingulate gyri		
Right Superior temporal gyrus		
Left Middle occipital gyrus		
Right Superior frontal gyrus-dorsolateral		
Left Superior frontal gyrus-dorsolateral		
Right Angular gyrus		
Left Supplementary motor area		
Left Fusiform gyrus		
Left Lingual gyrus		
Right Middle frontal gyrus		

Left Angular gyrus		
Right Inferior occipital gyrus		
Left Inferior frontal gyrus-triangular part		
Right Fusiform gyrus		
Right Inferior frontal gyrus-triangular part		
Left Superior frontal gyrus-medial		
Right Supplementary motor area		
Right Lingual gyrus		
Left Middle frontal gyrus	199	0.016
Left Precentral gyrus		
Left Precentral gyrus	622	0.023
Left Superior frontal gyrus-dorsolateral		
Left Caudate nucleus	404	0.025
Right Caudate nucleus		
Right Parahippocampal gyrus	180	0.026
Left Middle frontal gyrus	53	0.027
Left Superior frontal gyrus-dorsolateral		
Right Superior parietal gyrus	83	0.029
Left Superior frontal gyrus-dorsolateral	12	0.032
Left Anterior cingulate cortex-pregenual	41	0.036
Left Superior frontal gyrus-medial orbital		
Left Superior frontal gyrus-dorsolateral	26	0.038
Left Middle frontal gyrus		
Right Superior frontal gyrus-medial orbital	16	0.041
Left Lenticular nucleus-Putamen	12	0.042
Left Lenticular nucleus-Pallidum		
Right Lobule VIIB of cerebellar hemisphere	123	0.042
Right Crus II of cerebellar hemisphere		
Right Lobule VIII of cerebellar hemisphere		
Right Superior frontal gyrus-dorsolateral	29	0.044
Right Superior frontal gyrus-medial		
Right Middle cingulate & paracingulate gyri		
Right Anterior cingulate cortex-pregenual		
Right Precentral gyrus	7	0.044
Left Postcentral gyrus	5	0.044
Right Caudate nucleus	26	0.045
Right Nucleus accumbens		
Right Anterior orbital gyrus	1	0.046
Left Superior frontal gyrus-dorsolateral	5	0.047
Left Postcentral gyrus	26	0.047
Left Precentral gyrus	10	0.047
Left Postcentral gyrus		
Left Postcentral gyrus	1	0.048
Left Lingual gyrus	1	0.048
Right Superior frontal gyrus-dorsolateral	1	0.048
Right Rolandic operculum	1	0.048
Left Inferior parietal gyrus-excluding supramarginal and angular gyri	3	0.048
Lobule VI of vermis	3	0.049
Lobule IV-V of vermis	1	0.049
Left Amygdala	1	0.050
Left Lenticular nucleus-Putamen	1	0.050
Left Calcarine fissure and surrounding cortex	1	0.050
Left Superior frontal gyrus-medial	1	0.050

Table S4. Gray matter volume (GMV) associations with the Attention domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrast generated from general linear model adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancemnet (TFCE) and passed False Rate Discovery (FDR) correction at 0.053. Table indicates center of gravity cluster brain region as determined by the aal3 brain atlas region.

Language

AAL3 Atlas Regions	Cluster-Size	p
Left Middle temporal gyrus	128743	0.053
Left Inferior parietal gyrus-excluding supramarginal and angular gyri		
Right Middle temporal gyrus		
Left Fusiform gyrus		
Right Postcentral gyrus		
Left Superior temporal gyrus		
Left Inferior temporal gyrus		
Right Inferior temporal gyrus		
Right Fusiform gyrus		
Right Superior temporal gyrus		
Left Precuneus		
Left Middle occipital gyrus		
Left Middle frontal gyrus		
Right Middle occipital gyrus		
Left Lingual gyrus		
Left Insula		
Right Insula		
Right Precentral gyrus		
Left Temporal pole: superior temporal gyrus		
Left Hippocampus		
Right Temporal pole: middle temporal gyrus		
Left Superior frontal gyrus-medial		
Right Parahippocampal gyrus		
Left Rolandic operculum		
Left Superior parietal gyrus		
Left Precentral gyrus		
Left Supplementary motor area		
Left Superior frontal gyrus-dorsolateral	1420	0.053
Left Middle frontal gyrus		
Right Precuneus	93	0.06
Right Paracentral lobule		
Right Cuneus	482	0.061
Right Calcarine fissure and surrounding cortex		
Left Cuneus		
Right Lobule VIII of cerebellar hemisphere	133	0.065
Right Lobule VIIB of cerebellar hemisphere		
Right Crus II of cerebellar hemisphere		
Right Lobule X of cerebellar hemisphere	112	0.068
Right Lobule VIII of cerebellar hemisphere		
Left Crus II of cerebellar hemisphere	117	0.074
Left Inferior frontal gyrus-opercular part	5	0.076
Left Middle frontal gyrus	21	0.077
Left Superior frontal gyrus-dorsolateral		
Left Superior frontal gyrus-dorsolateral	16	0.079
Right Middle frontal gyrus	46	0.083
Right Inferior frontal gyrus-triangular part	13	0.085
Left Superior frontal gyrus-dorsolateral	5	0.088
Left Middle frontal gyrus		
Right Lobule VIII of cerebellar hemisphere	25	0.09
Right Lobule VIIB of cerebellar hemisphere		
Right Crus II of cerebellar hemisphere		
Right Posterior cingulate gyrus	6	0.09
Right Lobule VIII of cerebellar hemisphere	52	0.093
Right Precuneus	4	0.094
Right Temporal pole: superior temporal gyrus	3	0.095
Right Middle frontal gyrus	1	0.095
Right Crus II of cerebellar hemisphere	19	0.095
Right Lobule VIIB of cerebellar hemisphere		
Right IFG pars orbitalis	3	0.096
Left Lobule VIIB of cerebellar hemisphere	3	0.097
Left Middle frontal gyrus	1	0.097
Right Lobule VIII of cerebellar hemisphere	25	0.097
Right Precuneus	1	0.099
Left Cuneus	2	0.099
Right Calcarine fissure and surrounding cortex	1	0.099
Left Lobule VIII of cerebellar hemisphere	1	0.1
Left Crus II of cerebellar hemisphere	1	0.1

Table S5. Gray matter volume (GMV) associations with the Language domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrast generated from general linear model adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancement (TFCE) and passed False Rate Discovery (FDR) correction at 0.053. Table indicates center of gravity cluster brain region as determined by the aal3 brain atlas region.

Abstraction

AAL3 Atlas Regions	Cluster-Size	p
Left Middle temporal gyrus	107176	0.026
Right Middle temporal gyrus		
Right Inferior temporal gyrus		
Left Inferior temporal gyrus		
Right Postcentral gyrus		
Left Superior temporal gyrus		
Left Inferior parietal gyrus-excluding supramarginal and angular gyri		
Left Fusiform gyrus		
Right Fusiform gyrus		
Right Temporal pole: middle temporal gyrus		
Right Superior temporal gyrus		
Left Middle occipital gyrus		
Right Parahippocampal gyrus		
Right Superior parietal gyrus		
Right Temporal pole: superior temporal gyrus		
Right Precuneus		
Left Precuneus		
Left Cuneus		
Right Inferior parietal gyrus-excluding supramarginal and angular gyri		
Left Angular gyrus		
Left Lingual gyrus		
Left Temporal pole: middle temporal gyrus		
Left Superior frontal gyrus-medial		
Right Insula		
Left SupraMarginal gyrus		
Left Parahippocampal gyrus		
Left Postcentral gyrus		
Right Superior frontal gyrus-medial		
Left Superior parietal gyrus		
Left Supplementary motor area	1977	0.026
Right Supplementary motor area		
Right Middle cingulate & paracingulate gyri		
Right Superior frontal gyrus-dorsolateral		
Left Superior frontal gyrus-medial	447	0.026
Left Superior frontal gyrus-dorsolateral		
Left Supplementary motor area		
Right Precentral gyrus	277	0.027
Right Inferior frontal gyrus-triangular part	267	0.028
Right Inferior frontal gyrus-opercular part		
Right Superior frontal gyrus-dorsolateral	783	0.030
Right Middle frontal gyrus		
Right Middle cingulate & paracingulate gyri		
Left Middle cingulate & paracingulate gyri	102	0.030
Left Lenticular nucleus-Putamen	55	0.032
Right Inferior frontal gyrus-opercular part	340	0.033
Right Insula		
Right Lenticular nucleus-Putamen		
Right Inferior frontal gyrus-triangular part		
Left Rolandic operculum	42	0.034
Left Inferior frontal gyrus-opercular part		
Left Superior temporal gyrus		
Right Middle cingulate & paracingulate gyri	32	0.034
Left Paracentral lobule	10	0.037
Right Superior parietal gyrus	33	0.038
Right Superior occipital gyrus		
Left Superior frontal gyrus-dorsolateral	8	0.038

Left Supplementary motor area	8	0.039
Left Lingual gyrus	29	0.039
Left Fusiform gyrus		
Right Middle frontal gyrus	57	0.039
Right Superior frontal gyrus-dorsolateral		
Left Lingual gyrus	8	0.041
Right SupraMarginal gyrus	56	0.041
Right Middle frontal gyrus	12	0.041
Right Superior frontal gyrus-dorsolateral	14	0.041
Right Supplementary motor area		
Right Superior frontal gyrus-dorsolateral	17	0.041
Right Parahippocampal gyrus	9	0.042
Left Lingual gyrus	32	0.042
Left Inferior occipital gyrus		
Left Calcarine fissure and surrounding cortex		
Right Lobule VIII of cerebellar hemisphere	60	0.043
Left Superior frontal gyrus-medial	6	0.043
Right Superior occipital gyrus	4	0.045
Right Fusiform gyrus	19	0.045
Right Lingual gyrus		
Right Caudate nucleus	3	0.048
Left Lingual gyrus	3	0.048
Left Superior frontal gyrus-dorsolateral	2	0.048
Left Superior frontal gyrus-medial		
Right Olfactory cortex	1	0.049
Right Superior occipital gyrus	1	0.049
Right Inferior frontal gyrus-triangular part	1	0.049
Right Superior parietal gyrus	1	0.049
Left Rolandic operculum	1	0.050
Left Precuneus	1	0.050

Table S6. Gray matter volume (GMV) associations with the Abstraction domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrast generated from general linear model adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancement (TFCE) and passed False Rate Discovery (FDR) correction at 0.053. Table indicates center of gravity cluster brain region as determined by the aal3 brain atlas region.

	Delayed Recall	
AAL3 Atlas Regions	**Cluster-Size**	**p**
Left Middle temporal gyrus	124686	0.007
Right Middle temporal gyrus		
Right Postcentral gyrus		
Left Superior temporal gyrus		
Left Inferior parietal gyrus-excluding supramarginal and angular gyri		
Right Inferior temporal gyrus		
Right Fusiform gyrus		
Right Superior temporal gyrus		
Left Fusiform gyrus		
Left Middle cingulate & paracingulate gyri		
Right Parahippocampal gyrus		
Right Precuneus		
Right Middle cingulate & paracingulate gyri		
Right Insula		
Left Inferior temporal gyrus		
Left Hippocampus		
Right Middle occipital gyrus		
Left SupraMarginal gyrus		
Right Temporal pole: superior temporal gyrus		
Right Angular gyrus		
Right Hippocampus		
Right Temporal pole: middle temporal gyrus		
Left Postcentral gyrus		
Right Inferior frontal gyrus-triangular part		
Left Middle frontal gyrus		

Left Inferior frontal gyrus-triangular part		
Left Insula		
Right Middle frontal gyrus		
Left Precuneus		
Right Superior occipital gyrus		
Left Parahippocampal gyrus		
Left Middle occipital gyrus		
Left Lingual gyrus		
Right Supplementary motor area	53	< .001
Right Superior frontal gyrus-dorsolateral		
Right Middle cingulate & paracingulate gyri		
Left Superior frontal gyrus-dorsolateral	2840	0.010
Left Supplementary motor area		
Left Superior frontal gyrus-medial		
Left Middle frontal gyrus		
Left Anterior cingulate cortex-supracallosal		
Left Middle cingulate & paracingulate gyri		
Left Precentral gyrus	114	0.011
Left Superior frontal gyrus-dorsolateral		
Right Middle frontal gyrus	67	0.013
Right Superior frontal gyrus-dorsolateral		
Left Superior parietal gyrus	429	0.017
Left Precuneus		
Right Superior frontal gyrus-dorsolateral	132	0.017
Right Precentral gyrus		
Right Cuneus	311	0.019
Right Superior occipital gyrus		
Right Calcarine fissure and surrounding cortex		
Right Middle occipital gyrus		
Left Precentral gyrus	126	0.021
Left Superior frontal gyrus-dorsolateral		
Left Middle frontal gyrus		
Left Superior frontal gyrus-dorsolateral	33	0.030
Left Superior frontal gyrus-medial		
Right Precuneus	61	0.034
Right Precuneus	14	0.034
Left Superior frontal gyrus-medial	9	0.035
Left Precuneus	11	0.035
Left Superior frontal gyrus-dorsolateral	7	0.035
Right Anterior cingulate cortex-pregenual	6	0.036
Right Middle frontal gyrus	12	0.036
Right Supplementary motor area	12	0.038
Right Superior frontal gyrus-medial		
Right Superior frontal gyrus-dorsolateral	10	0.039
Left Postcentral gyrus	14	0.039
Right Supplementary motor area	12	0.040
Left Precuneus	9	0.041
Left Superior frontal gyrus-dorsolateral	1	0.042
Left Superior frontal gyrus-medial	4	0.042
Right Superior frontal gyrus-dorsolateral	2	0.043
Left Lingual gyrus	3	0.044
Left Precentral gyrus	3	0.045
Left Superior frontal gyrus-dorsolateral	1	0.046
Left Precuneus	1	0.046
Left Supplementary motor area	3	0.047
Left Lingual gyrus	1	0.048
Left Precentral gyrus	1	0.049
Right Lingual gyrus	1	0.049

Table S7. Gray matter volume (GMV) associations with the Memory/Delayed Recall domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrast generated from general linear model adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancement (TFCE) and passed False Rate Discovery (FDR)

correction at 0.053. Table indicates center of gravity cluster brain region as determined by the aal3 brain atlas region.

Orientation		
AAL3 Atlas Regions	**Cluster-Size**	**p**
Left Middle temporal gyrus	300363	< .001
Right Middle temporal gyrus		
Left Superior frontal gyrus-dorsolateral		
Right Superior frontal gyrus-dorsolateral		
Right Middle frontal gyrus		
Left Middle frontal gyrus		
Right Precuneus		
Right Inferior temporal gyrus		
Left Superior frontal gyrus-medial		
Left Precuneus		
Right Fusiform gyrus		
Right Superior temporal gyrus		
Left Inferior parietal gyrus-excluding supramarginal and angular gyri		
Left Inferior temporal gyrus		
Left Superior temporal gyrus		
Left Fusiform gyrus		
Left Middle cingulate & paracingulate gyri		
Left Middle occipital gyrus		
Left Insula		
Right Middle cingulate & paracingulate gyri		
Right Insula		
Left Supplementary motor area		
Left Inferior frontal gyrus-triangular part		
Right Postcentral gyrus		
Right Middle occipital gyrus		
Right Lingual gyrus		
Right Angular gyrus		
Left Temporal pole: superior temporal gyrus		
Left Precentral gyrus		
Right Superior frontal gyrus-medial		
Right Superior parietal gyrus		
Right Calcarine fissure and surrounding cortex		
Left Postcentral gyrus	14	0.031
Left Crus I of cerebellar hemisphere	46	0.037
Left Crus II of cerebellar hemisphere		

Table S8. Gray matter volume (GMV) associations with the Orientation domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrast generated from general linear model adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancement (TFCE) and passed False Rate Discovery (FDR) correction at 0.053. Table indicates center of gravity cluster brain region as determined by the aal3 brain atlas region.

Total Score		
AAL3 Atlas Regions	**Cluster-Size**	**p**
Left Middle temporal gyrus	325370	< .001
Right Middle temporal gyrus		
Left Superior frontal gyrus-dorsolateral		
Right Middle frontal gyrus		
Right Superior frontal gyrus-dorsolateral		
Right Precuneus		
Left Middle frontal gyrus		
Left Precuneus		
Left Superior temporal gyrus		
Right Inferior temporal gyrus		
Right Postcentral gyrus		
Left Inferior temporal gyrus		
Right Superior temporal gyrus		

Left Superior frontal gyrus-medial		
Right Fusiform gyrus		
Left Inferior parietal gyrus-excluding supramarginal and angular gyri		
Left Middle occipital gyrus		
Left Fusiform gyrus		
Left Middle cingulate & paracingulate gyri		
Right Middle cingulate & paracingulate gyri		
Left Superior parietal gyrus		
Left Precentral gyrus		
Right Lingual gyrus		
Left Lingual gyrus		
Right Middle occipital gyrus		
Right Precentral gyrus		
Right Insula		
Right Angular gyrus		
Left Insula		
Left Inferior frontal gyrus-triangular part		
Left Postcentral gyrus	19	0.030
Left Precentral gyrus		
Left Lobule VIII of cerebellar hemisphere	53	0.032
Left Lobule IX of cerebellar hemisphere		
Left Lobule X of cerebellar hemisphere		
Right Crus I of cerebellar hemisphere	13	0.033
Right Anterior cingulate cortex-supracallosal	4	0.040
Lobule IV-V of vermis	1	0.044
Left Lobule VIII of cerebellar hemisphere	2	0.049
Right Superior frontal gyrus-dorsolateral	2	0.049
Right Superior frontal gyrus-dorsolateral	1	0.049

Table S9. Gray matter volume (GMV) associations with the Total Score from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early-onset Alzheimer's disease (n=14). Positive contrast generated from general linear model adjusting for sex, race, ethnicity and Total Intracranial Volume (TIV) that then underwent Threshold- Free Cluster Enhancement (TFCE) and passed False Rate Discovery (FDR) correction at 0.053. Table indicates center of gravity cluster brain region as determined by the aal3 brain atlas region.

Spearman Correlations of ROIs

MoCA	*aal3-atlas ROIs with most significant Spearman's correlations*	ρ Range	95% CI		p	p(FDR)
Visuospatial/ Executive	L Superior Frontal Gyrus; R Inferior Frontal Gyrus, orbital part; R Superior Frontal Gyrus, medial part; L&R Ventromedial Prefrontal Cortex; L Medial Orbital Frontal Cortex; R Anterior Orbital Frontal Cortex; L&R Insula; R Middle Cingulate Cortex; R Middle Occipital Gyrus; R Fusiform Gyrus; R Superior Parietal Gyrus; L Inferior Parietal Gyrus; L&R Angular Gyrus; L&R Precuneus; L Superior Temporal Gyrus; L&R Middle Temporal Gyrus; R Temporal Pole, middle part; L&R Inferior Temporal Gyrus	0.30 – 0.35	0.11	0.5	<0.01	<0.01
Naming	L&R Posterior Orbital Frontal Cortex	0.31 – 0.31	0.14	0.44	<0.01	<0.10
Attention	L Inferior Parietal Gyrus; L Middle Temporal Gyrus	0.25 – 0.29	0.07	0.46	<0.01	N.S.
Language	L Inferior Parietal Gyrus	0.24 – 0.24	0.05	0.41	<0.01	N.S.
Abstraction	L Temporal Gyrus, middle part	0.27 – 0.27	0.09	0.44	<0.01	N.S.
Memory/Delayed Recall	L Precentral Gyrus; L Superior Frontal Gyrus; L&R Inferior Frontal Gyrus, opercular part; L&R Inferior Frontal Gyrus, triangular part; L Rolandic Operculum; L&R Lateral Frontal Orbital Gyrus; R Gyrus Rectus; L&R Medial Orbital Frontal Cortex; R Anterior Orbital Frontal Cortex; L&R Insula; L&R Middle Cingulate Cortex; L&R Hippocampus; L&R Parahippocampal Gyrus; L&R Amygdala; R Superior Occipital Gyrus; L&R Fusiform Gyrus; L&R Postcentral Gyrus; L&R Inferior Parietal Gyrus; L Supramarginal Gyrus; R Angular Gyrus; L Heschl's Gyrus; L Superior Temporal Gyrus; L&R Temporal Pole, superior part; L&R Middle Temporal Gyrus; L&R Temporal Pole, middle part	0.30 – 0.42	0.12	0.56	<0.01	<0.01
Orientation	L Hippocampus, L Amygdala	0.30 – 0.36	0.12	0.52	<0.01	<0.01
Total Score	L Superior Frontal Gyrus; L&R Inferior Frontal Gyrus, triangular part; L Rolandic Operculum; L Supplementary Motor Area; L&R Lateral Frontal Orbital Gyrus; L Superior Frontal Gyrus, edial part; L&R Ventromedial Prefrontal Cortex; L&R Gyrus Rectus; L&R Medial Orbital Frontal Cortex; L&R Anterior Orbital Frontal Cortex; L&R Insula; L&R Middle Cingulate Cortex; R Posterior Cingulate Cortex; L&R Hippocampus; L&R Parahippocampal Gyrus; L&R Amygdala; R Superior Occipital Gyrus; R Middle Occipital Gyrus; L&R Fusiform Gyrus; R Postcentral Gyrus; L Superior Parietal Gyrus; L&R Inferior Parietal Gyrus; L Supramarginal Gyrus; L&R Angular Gyrus; L&R Precuneus; L Heschl's Gyrus; L Superior Temporal Gyrus; L&R Temporal Pole, superior part; L&R Middle Temporal Gyrus; L&R Temporal Pole, middle part; L&R Inferior Temporal Gyrus	0.30 – 0.43	0.1	0.58	<0.01	<0.01

Table S10. Summary Table of signficant spearman's correlations from Tables S11-18. Total Intracranial Volume-corrected gray matter volume (GMV) associations with several cognitive domains in a sample of early onset Alzheimer's Disease Neuroimaging Initiative (ADNI) who were either Cognitvely Normal (n=44), Mild Cognitive Impairment (n=62), or early onset Alzheimer's disease (n=14). Note: "+" indicates nominal threshold passing and failute to pass False Rate Discovery Rate (FDR). For the full list of 116 ROIs tested for associations with each of the eight MoCA scores, see Supplementary Tables S11-S18. Note: L = Left hemishere; R = Right hemisphere.

Visuospatial/Executive Domain

aal3-ROIs	Spearman's ρ	Lower 95% CI	Upper 95% CI	p	p(FDR)

lPreCG	0.159	-0.019	0.340	0.083	*	0.128	
rPreCG	0.145	-0.026	0.320	0.115		0.163	
lSFG	0.296	0.130	0.446	0.001	***	0.006	***
rSFG	0.272	0.098	0.436	0.003	***	0.012	**
lMFG	0.157	-0.034	0.328	0.087	*	0.131	
rMFG	0.214	0.026	0.387	0.019	**	0.039	**
lIFGoperc	0.107	-0.067	0.268	0.247		0.311	
rIFGoperc	0.119	-0.051	0.304	0.194		0.259	
lIFGtriang	0.218	0.043	0.389	0.017	**	0.037	**
rIFGtriang	0.248	0.066	0.417	0.006	***	0.017	**
lIFGorb	0.158	-0.009	0.323	0.085	*	0.130	
rIFGorb	0.307	0.129	0.469	0.001	***	0.006	***
lROL	0.253	0.089	0.407	0.005	***	0.017	**
rROL	0.166	-0.014	0.331	0.070	*	0.113	
lSMA	0.261	0.079	0.425	0.004	***	0.015	**
rSMA	0.177	0.005	0.354	0.053	*	0.090	*
lOLF	0.238	0.063	0.412	0.009	***	0.023	**
rOLF	0.201	0.035	0.365	0.028	**	0.052	*
lSFGmedial	0.240	0.063	0.399	0.008	***	0.021	**
rSFGmedial	0.217	0.036	0.380	0.018	**	0.038	**
lPFCventmed	0.284	0.115	0.450	0.002	***	0.010	***
rPFCventmed	0.286	0.110	0.446	0.002	***	0.010	***
lREC	0.292	0.135	0.445	0.001	***	0.006	***
rREC	0.255	0.088	0.413	0.005	***	0.017	**
lOFCmed	0.286	0.111	0.452	0.002	***	0.010	***
rOFCmed	0.231	0.053	0.395	0.011	**	0.026	**
lOFCant	0.241	0.070	0.405	0.008	***	0.021	**
rOFCant	0.323	0.147	0.475	0.000	***	0.006	***
lOFCpost	0.160	-0.016	0.324	0.080	*	0.125	
rOFCpost	0.177	0.009	0.331	0.054	*	0.091	*
lOFClat	0.213	0.032	0.386	0.019	**	0.039	**
rOFClat	0.209	0.031	0.392	0.022	**	0.043	**
lINS	0.293	0.127	0.454	0.001	***	0.006	***
rINS	0.312	0.150	0.473	0.001	***	0.006	***
lMCC	0.249	0.074	0.408	0.006	***	0.017	**
rMCC	0.291	0.121	0.451	0.001	***	0.006	***
lPCC	0.221	0.045	0.392	0.015	**	0.033	**
rPCC	0.249	0.066	0.411	0.006	***	0.017	**
lHIP	0.250	0.065	0.417	0.006	***	0.017	**
rHIP	0.235	0.052	0.409	0.010	**	0.024	**

lPHG	0.164	-0.031	0.346	0.073	*	0.116	
rPHG	0.238	0.058	0.406	0.009	***	0.023	**
lAMYG	0.211	0.025	0.386	0.021	**	0.041	**
rAMYG	0.188	-0.001	0.366	0.040	**	0.070	*
lCAL	0.174	-0.024	0.361	0.057	*	0.094	*
rCAL	0.189	-0.006	0.366	0.039	**	0.070	*
lCUN	0.236	0.043	0.402	0.010	**	0.024	**
rCUN	0.240	0.039	0.405	0.008	***	0.021	**
lLING	0.211	0.027	0.375	0.020	**	0.040	**
rLING	0.254	0.065	0.420	0.005	***	0.017	**
lSOG	0.228	0.033	0.401	0.012	**	0.027	**
rSOG	0.247	0.064	0.412	0.007	***	0.020	**
lMOG	0.267	0.063	0.429	0.003	***	0.012	**
rMOG	0.308	0.110	0.483	0.001	***	0.006	***
lIOG	0.109	-0.082	0.303	0.237		0.302	
rIOG	0.177	-0.012	0.351	0.053	*	0.090	*
lFFG	0.251	0.059	0.417	0.006	***	0.017	**
rFFG	0.299	0.110	0.457	0.001	***	0.006	***
lPoCG	0.197	-0.009	0.371	0.031	**	0.056	*
rPoCG	0.268	0.079	0.422	0.003	***	0.012	**
lSPG	0.270	0.089	0.431	0.003	***	0.012	**
rSPG	0.304	0.123	0.461	0.001	***	0.006	***
lIPG	0.319	0.142	0.476	0.000	***	0.006	***
rIPG	0.228	0.021	0.394	0.012	**	0.027	**
lSMG	0.254	0.074	0.407	0.005	***	0.017	**
rSMG	0.152	-0.044	0.325	0.098	*	0.144	
lANG	0.326	0.129	0.495	0.000	***	0.006	***
rANG	0.313	0.115	0.483	0.001	***	0.006	***
lPCUN	0.326	0.134	0.481	0.000	***	0.006	***
rPCUN	0.326	0.135	0.470	0.000	***	0.006	***
lPCL	0.086	-0.100	0.268	0.352		0.417	
rPCL	0.220	0.035	0.393	0.016	**	0.035	**
lCAU	0.019	-0.154	0.186	0.835		0.873	
rCAU	-0.041	-0.223	0.130	0.654		0.709	
lPUT	0.104	-0.068	0.280	0.259		0.323	
rPUT	0.096	-0.080	0.267	0.297		0.359	
lPAL	0.070	-0.113	0.243	0.446		0.507	
rPAL	0.109	-0.063	0.280	0.237		0.302	
lHES	0.257	0.091	0.421	0.005	***	0.017	**
rHES	0.202	0.026	0.370	0.027	**	0.051	*

lSTG	0.294	0.132	0.449	0.001	***	0.006	***
rSTG	0.197	0.038	0.357	0.031	**	0.056	*
lTPOsup	0.168	-0.004	0.323	0.067	*	0.109	
rTPOsup	0.154	-0.023	0.327	0.093	*	0.138	
lMTG	0.345	0.175	0.498	0.000	***	0.006	***
rMTG	0.314	0.131	0.474	0.000	***	0.006	***
lTPOmid	0.264	0.082	0.420	0.004	***	0.015	**
rTPOmid	0.279	0.099	0.437	0.002	***	0.010	***
lITG	0.328	0.159	0.476	0.000	***	0.006	***
rITG	0.319	0.147	0.478	0.000	***	0.006	***
lCERCRU1	0.043	-0.129	0.230	0.642		0.709	
rCERCRU1	0.036	-0.133	0.213	0.698		0.750	
lCERCRU2	0.128	-0.046	0.299	0.165		0.223	
rCERCRU2	0.091	-0.079	0.266	0.322		0.385	
lCER3	0.015	-0.169	0.195	0.871		0.894	
rCER3	0.013	-0.162	0.179	0.892		0.905	
lCER4_5	0.109	-0.068	0.274	0.234		0.302	
rCER4_5	0.145	-0.045	0.331	0.114		0.163	
lCER6	0.097	-0.086	0.274	0.290		0.358	
rCER6	0.129	-0.051	0.313	0.161		0.220	
lCER7b	0.151	-0.022	0.328	0.099	*	0.144	
rCER7b	0.042	-0.151	0.226	0.650		0.709	
lCER8	0.143	-0.040	0.323	0.119		0.166	
rCER8	0.132	-0.044	0.296	0.152		0.210	
lCER9	0.082	-0.113	0.250	0.371		0.435	
rCER9	0.080	-0.111	0.254	0.385		0.447	
lCER10	0.072	-0.111	0.240	0.433		0.497	
rCER10	0.069	-0.131	0.256	0.457		0.515	
VER1_2	0.012	-0.172	0.201	0.897		0.905	
VER3	-0.043	-0.227	0.142	0.645		0.709	
VER4_5	0.097	-0.086	0.289	0.293		0.358	
VER6	0.116	-0.071	0.305	0.206		0.272	
VER7	0.018	-0.180	0.215	0.845		0.875	
VER8	0.027	-0.153	0.218	0.770		0.812	
VER9	0.029	-0.163	0.218	0.756		0.805	
VER10	0.010	-0.172	0.195	0.917		0.917	

Table S11. Gray matter volume (GMV) associations with the Visuospatial/Executive domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognitive Impairment (n=62), and early onset Alzheimer's disease (n=14). Spearman correlation model constructed to

determine significant ROI regions. Note: FDR = False Rate Discovery Rate. * = p < 0.1; ** = p < 0.05; and *** = p 0.01.

Naming Domain

aal3-ROIs	Spearman's ρ	Lower 95% CI	Upper 95% CI	p		p(FDR)	
lPreCG	0.051	-0.110	0.203	0.577		0.703	
rPreCG	-0.028	-0.162	0.101	0.759		0.839	
lSFG	0.139	-0.038	0.309	0.130		0.306	
rSFG	0.089	-0.099	0.271	0.336		0.541	
lMFG	0.190	0.033	0.335	0.038	**	0.189	
rMFG	0.083	-0.090	0.249	0.366		0.551	
lIFGoperc	0.051	-0.123	0.230	0.582		0.703	
rIFGoperc	0.048	-0.120	0.233	0.606		0.724	
lIFGtriang	0.072	-0.101	0.268	0.437		0.596	
rIFGtriang	0.092	-0.090	0.264	0.319		0.521	
lIFGorb	0.208	0.050	0.351	0.023	**	0.171	
rIFGorb	0.165	0.007	0.309	0.071	*	0.245	
lROL	0.075	-0.093	0.237	0.417		0.583	
rROL	0.083	-0.062	0.224	0.366		0.551	
lSMA	0.058	-0.072	0.205	0.532		0.678	
rSMA	0.058	-0.115	0.222	0.532		0.678	
lOLF	0.243	0.086	0.379	0.008	***	0.171	
rOLF	0.204	0.035	0.343	0.025	**	0.171	
lSFGmedial	0.138	-0.018	0.299	0.132		0.306	
rSFGmedial	0.109	-0.096	0.291	0.237		0.436	
lPFCventmed	0.161	-0.020	0.335	0.078	*	0.245	
rPFCventmed	0.204	0.047	0.349	0.025	**	0.171	
lREC	0.155	-0.048	0.340	0.091	*	0.257	
rREC	0.165	0.003	0.318	0.071	*	0.245	
lOFCmed	0.174	0.003	0.318	0.058	*	0.240	
rOFCmed	0.214	0.047	0.361	0.019	**	0.171	
lOFCant	0.172	0.026	0.304	0.060	*	0.240	
rOFCant	0.202	0.058	0.345	0.027	**	0.171	
lOFCpost	0.290	0.156	0.404	0.001	***	0.058	*
rOFCpost	0.306	0.135	0.437	0.001	***	0.058	*
lOFClat	0.101	-0.051	0.240	0.270		0.467	
rOFClat	0.148	-0.018	0.292	0.106		0.273	
lINS	0.164	0.009	0.297	0.074	*	0.245	
rINS	0.182	0.009	0.326	0.047	**	0.215	
lMCC	0.221	0.040	0.383	0.015	**	0.171	

rMCC	0.141	-0.050	0.298	0.125		0.302
lPCC	0.152	-0.028	0.305	0.098	*	0.271
rPCC	0.202	0.025	0.354	0.027	**	0.171
lHIP	0.202	0.040	0.345	0.027	**	0.171
rHIP	0.201	0.003	0.363	0.028	**	0.171
lPHG	0.188	0.043	0.321	0.039	**	0.189
rPHG	0.241	0.064	0.392	0.008	***	0.171
lAMYG	0.213	0.063	0.340	0.019	**	0.171
rAMYG	0.188	0.014	0.350	0.039	**	0.189
lCAL	0.212	0.071	0.358	0.020	**	0.171
rCAL	0.199	0.048	0.338	0.030	**	0.171
lCUN	0.132	-0.026	0.283	0.151		0.329
rCUN	0.104	-0.039	0.246	0.258		0.459
lLING	0.131	-0.051	0.286	0.153		0.329
rLING	0.112	-0.047	0.260	0.224		0.425
lSOG	0.111	-0.067	0.274	0.227		0.425
rSOG	0.116	-0.012	0.240	0.205		0.410
lMOG	0.096	-0.057	0.247	0.299		0.509
rMOG	0.086	-0.092	0.251	0.353		0.551
lIOG	0.081	-0.083	0.253	0.380		0.564
rIOG	0.155	-0.027	0.306	0.091	*	0.257
lFFG	0.150	0.012	0.273	0.103		0.272
rFFG	0.179	0.015	0.320	0.050	*	0.215
lPoCG	0.030	-0.115	0.183	0.747		0.833
rPoCG	0.094	-0.083	0.263	0.307		0.509
lSPG	0.114	-0.038	0.252	0.214		0.421
rSPG	0.055	-0.109	0.204	0.554		0.698
lIPG	0.107	-0.064	0.269	0.244		0.442
rIPG	0.060	-0.119	0.230	0.515		0.678
lSMG	0.003	-0.162	0.178	0.970		0.978
rSMG	-0.021	-0.193	0.171	0.824		0.877
lANG	0.025	-0.163	0.208	0.788		0.854
rANG	0.076	-0.113	0.273	0.408		0.583
lPCUN	0.163	0.003	0.307	0.075	*	0.245
rPCUN	0.150	-0.013	0.298	0.103		0.272
lPCL	-0.007	-0.129	0.133	0.936		0.961
rPCL	0.012	-0.135	0.158	0.897		0.946
lCAU	0.179	-0.011	0.354	0.050	*	0.215
rCAU	0.146	-0.035	0.311	0.112		0.282
lPUT	0.086	-0.079	0.243	0.349		0.551

rPUT	-0.002	-0.164	0.160	0.983		0.983
lPAL	-0.004	-0.191	0.183	0.963		0.978
rPAL	0.054	-0.139	0.224	0.560		0.698
lHES	0.037	-0.138	0.209	0.690		0.800
rHES	0.010	-0.171	0.210	0.910		0.949
lSTG	0.080	-0.096	0.244	0.384		0.564
rSTG	0.075	-0.110	0.252	0.413		0.583
lTPOsup	0.227	0.045	0.377	0.013	**	0.171
rTPOsup	0.197	0.017	0.342	0.031	**	0.171
lMTG	0.214	0.061	0.353	0.019	**	0.171
rMTG	0.118	-0.040	0.270	0.199		0.405
lTPOmid	0.225	0.075	0.344	0.014	**	0.171
rTPOmid	0.223	0.075	0.336	0.015	**	0.171
lITG	0.162	0.030	0.291	0.077	*	0.245
rITG	0.134	-0.032	0.276	0.146		0.329
lCERCRU1	-0.103	-0.235	0.037	0.261		0.459
rCERCRU1	-0.041	-0.197	0.119	0.659		0.772
lCERCRU2	0.033	-0.112	0.186	0.721		0.820
rCERCRU2	0.025	-0.136	0.179	0.785		0.854
lCER3	0.023	-0.102	0.142	0.804		0.864
rCER3	0.061	-0.119	0.223	0.510		0.678
lCER4_5	0.032	-0.139	0.191	0.728		0.820
rCER4_5	0.084	-0.040	0.211	0.364		0.551
lCER6	-0.047	-0.184	0.091	0.612		0.724
rCER6	-0.010	-0.133	0.116	0.916		0.949
lCER7b	0.068	-0.112	0.242	0.462		0.623
rCER7b	0.130	-0.041	0.287	0.156		0.329
lCER8	0.156	-0.012	0.305	0.089	*	0.257
rCER8	0.133	-0.031	0.278	0.148		0.329
lCER9	0.163	-0.021	0.325	0.075	*	0.245
rCER9	0.113	-0.078	0.282	0.221		0.425
lCER10	-0.075	-0.267	0.129	0.413		0.583
rCER10	0.032	-0.184	0.220	0.728		0.820
VER1_2	0.160	0.030	0.290	0.081	*	0.247
VER3	0.120	-0.032	0.268	0.192		0.398
VER4_5	0.095	-0.091	0.275	0.303		0.509
VER6	0.052	-0.104	0.197	0.571		0.703
VER7	-0.058	-0.184	0.069	0.526		0.678
VER8	0.164	-0.008	0.319	0.074	*	0.245
VER9	0.143	-0.063	0.331	0.120		0.296

VER10	0.073	-0.090	0.221	0.427	0.590

Table S12. Gray matter volume (GMV) associations with the Naming domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognit--ive Impairment (n=62), and early onset Alzheimer's disease (n=14). Spearman correlation model constructed to determine significant ROI regions. Note: FDR = False Rate Discovery Rate. * = p < 0.1; ** = p < 0.05; and *** = p 0.01.

Attention Domain

aal3-ROIs	Spearman's ρ	Lower 95% CI	Upper 95% CI	p		p(FDR)
lPreCG	0.114	-0.055	0.277	0.216		0.330
rPreCG	0.117	-0.055	0.291	0.201		0.323
lSFG	0.163	-0.014	0.338	0.076	*	0.251
rSFG	0.127	-0.041	0.309	0.168		0.309
lMFG	0.135	-0.050	0.315	0.141		0.292
rMFG	0.072	-0.095	0.239	0.437		0.527
lIFGoperc	0.208	0.026	0.383	0.023	**	0.177
rIFGoperc	0.129	-0.058	0.314	0.161		0.309
lIFGtriang	0.159	-0.020	0.330	0.083	*	0.253
rIFGtriang	0.166	-0.012	0.336	0.070	*	0.251
lIFGorb	0.125	-0.054	0.291	0.175		0.310
rIFGorb	0.134	-0.026	0.306	0.145		0.295
lROL	0.219	0.039	0.391	0.016	**	0.177
rROL	0.082	-0.090	0.250	0.375		0.473
lSMA	0.188	0.004	0.350	0.040	**	0.216
rSMA	0.121	-0.063	0.296	0.190		0.310
lOLF	0.115	-0.064	0.286	0.212		0.330
rOLF	0.107	-0.067	0.282	0.244		0.354
lSFGmedial	0.213	0.041	0.388	0.020	**	0.177
rSFGmedial	0.110	-0.056	0.289	0.231		0.345
lPFCventmed	0.167	-0.006	0.342	0.069	*	0.251
rPFCventmed	0.165	0.004	0.330	0.072	*	0.251
lREC	0.164	-0.002	0.323	0.074	*	0.251
rREC	0.145	-0.029	0.306	0.114		0.259
lOFCmed	0.127	-0.048	0.292	0.166		0.309
rOFCmed	0.152	-0.028	0.308	0.097	*	0.253
lOFCant	0.218	0.028	0.375	0.017	**	0.177
rOFCant	0.155	-0.018	0.321	0.090	*	0.253
lOFCpost	0.121	-0.058	0.285	0.188		0.310
rOFCpost	0.135	-0.036	0.316	0.141		0.292
lOFClat	0.114	-0.064	0.280	0.216		0.330

rOFClat	0.047	-0.133	0.221	0.611		0.702
lINS	0.132	-0.051	0.291	0.150		0.299
rINS	0.185	0.016	0.344	0.043	**	0.217
lMCC	0.220	0.045	0.377	0.016	**	0.177
rMCC	0.181	0.005	0.348	0.048	**	0.223
lPCC	0.001	-0.199	0.180	0.991		0.991
rPCC	0.104	-0.082	0.293	0.258		0.356
lHIP	0.228	0.053	0.388	0.012	**	0.177
rHIP	0.148	-0.040	0.336	0.107		0.253
lPHG	0.161	-0.020	0.342	0.078	*	0.251
rPHG	0.152	-0.028	0.334	0.098	*	0.253
lAMYG	0.205	0.018	0.380	0.025	**	0.177
rAMYG	0.128	-0.062	0.322	0.164		0.309
lCAL	0.110	-0.082	0.305	0.232		0.345
rCAL	0.106	-0.092	0.291	0.249		0.356
lCUN	0.158	-0.025	0.340	0.085	*	0.253
rCUN	0.117	-0.075	0.303	0.203		0.323
lLING	0.149	-0.037	0.331	0.104		0.253
rLING	0.153	-0.031	0.336	0.096	*	0.253
lSOG	0.183	0.005	0.350	0.045	**	0.218
rSOG	0.158	-0.031	0.339	0.085	*	0.253
lMOG	0.104	-0.092	0.287	0.260		0.356
rMOG	0.205	0.018	0.378	0.024	**	0.177
lIOG	0.123	-0.070	0.311	0.180		0.310
rIOG	0.218	0.048	0.394	0.017	**	0.177
lFFG	0.194	0.002	0.377	0.033	**	0.191
rFFG	0.175	-0.006	0.361	0.055	*	0.245
lPoCG	0.071	-0.094	0.261	0.441		0.527
rPoCG	0.151	-0.022	0.324	0.100		0.253
lSPG	0.156	-0.013	0.329	0.088	*	0.253
rSPG	0.105	-0.075	0.289	0.253		0.356
lIPG	0.293	0.118	0.464	0.001	***	0.116
rIPG	0.074	-0.115	0.253	0.422		0.521
lSMG	0.148	-0.026	0.331	0.107		0.253
rSMG	0.013	-0.166	0.201	0.887		0.895
lANG	0.149	-0.039	0.330	0.104		0.253
rANG	0.172	-0.019	0.353	0.060	*	0.251
lPCUN	0.225	0.038	0.399	0.014	**	0.177
rPCUN	0.212	0.032	0.390	0.020	**	0.177
lPCL	0.029	-0.151	0.213	0.752		0.791

rPCL	0.164	-0.014	0.341	0.074	*	0.251
lCAU	0.146	-0.025	0.317	0.111		0.258
rCAU	0.081	-0.100	0.255	0.380		0.474
lPUT	0.132	-0.050	0.308	0.152		0.299
rPUT	0.048	-0.143	0.224	0.600		0.696
lPAL	-0.041	-0.213	0.135	0.654		0.726
rPAL	0.014	-0.158	0.189	0.877		0.892
lHES	0.135	-0.032	0.308	0.141		0.292
rHES	0.234	0.063	0.409	0.010	**	0.177
lSTG	0.217	0.047	0.378	0.017	**	0.177
rSTG	0.143	-0.030	0.302	0.120		0.268
lTPOsup	0.187	-0.004	0.365	0.041	**	0.216
rTPOsup	0.107	-0.076	0.286	0.243		0.354
lMTG	0.252	0.068	0.411	0.005	***	0.177
rMTG	0.198	0.020	0.377	0.030	**	0.183
lTPOmid	0.124	-0.056	0.304	0.178		0.310
rTPOmid	0.169	-0.004	0.346	0.064	*	0.251
lITG	0.203	0.007	0.378	0.026	**	0.177
rITG	0.212	0.041	0.376	0.020	**	0.177
lCERCRU1	0.054	-0.122	0.249	0.556		0.651
rCERCRU1	0.091	-0.109	0.277	0.321		0.418
lCERCRU2	0.201	0.036	0.363	0.028	**	0.180
rCERCRU2	0.123	-0.058	0.300	0.179		0.310
lCER3	-0.036	-0.199	0.141	0.700		0.745
rCER3	-0.043	-0.228	0.133	0.637		0.717
lCER4_5	0.137	-0.041	0.304	0.136		0.292
rCER4_5	0.099	-0.093	0.275	0.284		0.383
lCER6	0.019	-0.176	0.203	0.837		0.859
rCER6	0.037	-0.148	0.225	0.687		0.738
lCER7b	0.094	-0.075	0.267	0.305		0.403
rCER7b	0.094	-0.078	0.275	0.306		0.403
lCER8	0.059	-0.126	0.241	0.525		0.621
rCER8	0.072	-0.112	0.253	0.434		0.527
lCER9	0.041	-0.126	0.216	0.657		0.726
rCER9	-0.027	-0.188	0.153	0.767		0.794
lCER10	0.090	-0.087	0.282	0.327		0.421
rCER10	0.165	-0.011	0.347	0.071	*	0.251
VER1_2	-0.121	-0.293	0.079	0.189		0.310
VER3	-0.038	-0.216	0.155	0.680		0.737
VER4_5	0.123	-0.053	0.311	0.182		0.310

VER6	0.103	-0.083	0.297	0.261		0.356
VER7	0.040	-0.142	0.219	0.667		0.730
VER8	0.085	-0.112	0.268	0.356		0.454
VER9	-0.028	-0.205	0.160	0.757		0.791
VER10	-0.045	-0.224	0.137	0.623		0.709

Table S13. Gray matter volume (GMV) associations with the Attention domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognit--ive Impairment (n=62), and early onset Alzheimer's disease (n=14). Spearman correlation model constructed to determine significant ROI regions. Note: FDR = False Rate Discovery Rate. * = p < 0.1; ** = p < 0.05; and *** = p 0.01.

Language Domain

aal3-ROIs	Spearman's ρ	Lower 95% CI	Upper 95% CI	p		p(FDR)
lPreCG	0.045	-0.138	0.221	0.624		0.919
rPreCG	0.033	-0.158	0.212	0.724		0.923
lSFG	0.082	-0.107	0.265	0.374		0.916
rSFG	0.033	-0.153	0.219	0.722		0.923
lMFG	0.067	-0.120	0.255	0.466		0.916
rMFG	0.002	-0.176	0.175	0.985		0.994
lIFGoperc	0.175	-0.005	0.355	0.056	*	0.916
rIFGoperc	0.039	-0.150	0.225	0.669		0.919
lIFGtriang	0.088	-0.089	0.269	0.341		0.916
rIFGtriang	0.106	-0.073	0.287	0.248		0.916
lIFGorb	0.078	-0.093	0.255	0.400		0.916
rIFGorb	0.068	-0.104	0.236	0.460		0.916
lROL	0.167	-0.024	0.344	0.068	*	0.916
rROL	0.028	-0.162	0.208	0.759		0.923
lSMA	0.110	-0.081	0.282	0.230		0.916
rSMA	0.044	-0.142	0.238	0.633		0.919
lOLF	0.036	-0.154	0.215	0.697		0.919
rOLF	0.044	-0.149	0.218	0.636		0.919
lSFGmedial	0.134	-0.043	0.303	0.145		0.916
rSFGmedial	0.068	-0.112	0.249	0.459		0.916
lPFCventmed	0.046	-0.136	0.229	0.616		0.919
rPFCventmed	0.074	-0.104	0.256	0.422		0.916
lREC	0.100	-0.079	0.276	0.277		0.916
rREC	0.055	-0.134	0.245	0.549		0.919
lOFCmed	0.082	-0.112	0.254	0.373		0.916
rOFCmed	0.086	-0.102	0.271	0.349		0.916
lOFCant	0.077	-0.101	0.253	0.404		0.916

rOFCant	0.129	-0.065	0.305	0.161		0.916
lOFCpost	0.043	-0.136	0.231	0.637		0.919
rOFCpost	0.025	-0.162	0.207	0.789		0.923
lOFClat	0.055	-0.134	0.233	0.554		0.919
rOFClat	0.000	-0.179	0.170	1.000		1.000
lINS	0.108	-0.081	0.286	0.242		0.916
rINS	0.110	-0.071	0.286	0.232		0.916
lMCC	0.115	-0.067	0.304	0.211		0.916
rMCC	0.085	-0.103	0.267	0.356		0.916
lPCC	-0.023	-0.210	0.153	0.804		0.923
rPCC	0.070	-0.113	0.242	0.450		0.916
lHIP	0.121	-0.055	0.301	0.187		0.916
rHIP	0.043	-0.136	0.232	0.639		0.919
lPHG	0.078	-0.093	0.266	0.396		0.916
rPHG	0.095	-0.086	0.291	0.305		0.916
lAMYG	0.084	-0.093	0.277	0.361		0.916
rAMYG	0.046	-0.124	0.242	0.615		0.919
lCAL	-0.027	-0.209	0.168	0.769		0.923
rCAL	-0.029	-0.209	0.146	0.757		0.923
lCUN	0.048	-0.159	0.246	0.601		0.919
rCUN	0.008	-0.193	0.204	0.934		0.976
lLING	0.061	-0.138	0.244	0.507		0.919
rLING	-0.004	-0.185	0.175	0.963		0.980
lSOG	0.029	-0.164	0.204	0.756		0.923
rSOG	-0.013	-0.202	0.171	0.886		0.948
lMOG	0.073	-0.116	0.255	0.429		0.916
rMOG	0.131	-0.053	0.315	0.153		0.916
lIOG	0.077	-0.105	0.264	0.404		0.916
rIOG	0.053	-0.132	0.230	0.563		0.919
lFFG	0.158	-0.027	0.341	0.085	*	0.916
rFFG	0.112	-0.082	0.305	0.224		0.916
lPoCG	-0.007	-0.194	0.177	0.943		0.977
rPoCG	0.085	-0.105	0.279	0.355		0.916
lSPG	0.091	-0.085	0.264	0.323		0.916
rSPG	0.081	-0.103	0.251	0.381		0.916
lIPG	0.241	0.050	0.408	0.008	***	0.916
rIPG	0.092	-0.101	0.256	0.319		0.916
lSMG	0.109	-0.076	0.277	0.236		0.916
rSMG	0.028	-0.145	0.210	0.764		0.923
lANG	0.108	-0.086	0.309	0.242		0.916

rANG	0.135	-0.035	0.319	0.140		0.916
lPCUN	0.084	-0.102	0.269	0.364		0.916
rPCUN	0.073	-0.112	0.259	0.426		0.916
lPCL	-0.021	-0.216	0.172	0.820		0.923
rPCL	0.041	-0.147	0.215	0.657		0.919
lCAU	0.062	-0.124	0.259	0.503		0.919
rCAU	-0.005	-0.191	0.192	0.955		0.980
lPUT	0.106	-0.085	0.304	0.248		0.916
rPUT	0.017	-0.167	0.203	0.853		0.925
lPAL	0.022	-0.168	0.210	0.814		0.923
rPAL	0.053	-0.123	0.238	0.565		0.919
lHES	0.098	-0.098	0.288	0.285		0.916
rHES	0.147	-0.035	0.319	0.109		0.916
lSTG	0.176	0.002	0.363	0.054	*	0.916
rSTG	0.115	-0.068	0.295	0.212		0.916
lTPOsup	0.104	-0.076	0.283	0.260		0.916
rTPOsup	0.039	-0.141	0.217	0.675		0.919
lMTG	0.197	0.023	0.374	0.031	**	0.916
rMTG	0.133	-0.047	0.315	0.149		0.916
lTPOmid	0.086	-0.083	0.272	0.349		0.916
rTPOmid	0.099	-0.077	0.289	0.281		0.916
lITG	0.086	-0.101	0.266	0.352		0.916
rITG	0.088	-0.087	0.262	0.341		0.916
lCERCRU1	0.018	-0.162	0.198	0.846		0.925
rCERCRU1	0.020	-0.164	0.199	0.833		0.925
lCERCRU2	0.128	-0.045	0.304	0.165		0.916
rCERCRU2	0.040	-0.143	0.208	0.663		0.919
lCER3	0.025	-0.163	0.214	0.786		0.923
rCER3	-0.069	-0.256	0.117	0.453		0.916
lCER4_5	0.062	-0.114	0.234	0.501		0.919
rCER4_5	0.024	-0.171	0.201	0.796		0.923
lCER6	-0.037	-0.226	0.152	0.689		0.919
rCER6	-0.012	-0.199	0.177	0.899		0.948
lCER7b	0.054	-0.127	0.230	0.556		0.919
rCER7b	0.039	-0.144	0.216	0.673		0.919
lCER8	0.025	-0.150	0.193	0.784		0.923
rCER8	0.055	-0.125	0.218	0.554		0.919
lCER9	0.017	-0.150	0.191	0.850		0.925
rCER9	-0.061	-0.236	0.111	0.511		0.919
lCER10	0.024	-0.146	0.201	0.798		0.923

rCER10	0.124	-0.036	0.281	0.178		0.916
VER1_2	-0.088	-0.258	0.081	0.339		0.916
VER3	0.072	-0.109	0.244	0.434		0.916
VER4_5	0.085	-0.102	0.259	0.355		0.916
VER6	0.052	-0.135	0.247	0.573		0.919
VER7	-0.037	-0.218	0.155	0.690		0.919
VER8	-0.012	-0.187	0.163	0.899		0.948
VER9	-0.054	-0.242	0.120	0.559		0.919
VER10	-0.050	-0.241	0.123	0.588		0.919

Table S14. Gray matter volume (GMV) associations with the Language domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognit--ive Impairment (n=62), and early onset Alzheimer's disease (n=14). Spearman correlation model constructed to determine significant ROI regions. Note: FDR = False Rate Discovery Rate. * = p < 0.1; ** = p < 0.05; and *** = p 0.01.

Abstraction Domain

aal3-ROIs	Spearman's ρ	Lower 95% CI	Upper 95% CI	p		p(FDR)
lPreCG	0.050	-0.155	0.244	0.588		0.657
rPreCG	0.072	-0.132	0.264	0.432		0.602
lSFG	0.108	-0.096	0.311	0.242		0.439
rSFG	0.118	-0.090	0.317	0.199		0.397
lMFG	0.040	-0.164	0.229	0.667		0.703
rMFG	0.063	-0.136	0.259	0.491		0.630
lIFGoperc	0.135	-0.068	0.333	0.142		0.336
rIFGoperc	0.105	-0.113	0.312	0.254		0.453
lIFGtriang	0.180	-0.042	0.366	0.049	**	0.262
rIFGtriang	0.152	-0.072	0.361	0.096	*	0.289
lIFGorb	0.193	-0.014	0.384	0.035	**	0.262
rIFGorb	0.182	-0.005	0.370	0.047	**	0.262
lROL	0.203	-0.005	0.387	0.026	**	0.262
rROL	0.132	-0.085	0.327	0.150		0.339
lSMA	0.158	-0.048	0.342	0.086	*	0.285
rSMA	0.054	-0.157	0.246	0.561		0.654
lOLF	0.116	-0.080	0.295	0.206		0.397
rOLF	0.078	-0.114	0.257	0.397		0.583
lSFGmedial	0.166	-0.048	0.365	0.070	*	0.262
rSFGmedial	0.100	-0.095	0.303	0.279		0.476
lPFCventmed	0.133	-0.095	0.332	0.146		0.339
rPFCventmed	0.167	-0.033	0.344	0.068	*	0.262

lREC	0.173	-0.026	0.360	0.059	*	0.262
rREC	0.146	-0.050	0.330	0.112		0.317
lOFCmed	0.132	-0.063	0.318	0.152		0.339
rOFCmed	0.137	-0.051	0.327	0.135		0.333
lOFCant	0.149	-0.036	0.330	0.104		0.302
rOFCant	0.194	0.015	0.369	0.034	**	0.262
lOFCpost	0.178	-0.023	0.363	0.052	*	0.262
rOFCpost	0.093	-0.093	0.269	0.312		0.506
lOFClat	0.168	-0.005	0.336	0.067	*	0.262
rOFClat	0.179	0.001	0.345	0.050	*	0.262
lINS	0.142	-0.054	0.322	0.123		0.324
rINS	0.168	-0.037	0.361	0.067	*	0.262
lMCC	0.116	-0.092	0.320	0.209		0.397
rMCC	0.143	-0.058	0.340	0.119		0.321
lPCC	0.041	-0.150	0.228	0.659		0.702
rPCC	0.042	-0.154	0.229	0.652		0.702
lHIP	0.162	-0.016	0.338	0.078	*	0.266
rHIP	0.096	-0.085	0.298	0.298		0.494
lPHG	0.139	-0.033	0.312	0.131		0.333
rPHG	0.200	0.031	0.369	0.028	**	0.262
lAMYG	0.207	0.020	0.386	0.024	**	0.262
rAMYG	0.138	-0.039	0.330	0.132		0.333
lCAL	0.093	-0.105	0.276	0.314		0.506
rCAL	0.050	-0.150	0.236	0.589		0.657
lCUN	0.152	-0.036	0.343	0.097	*	0.289
rCUN	0.054	-0.125	0.233	0.560		0.654
lLING	0.120	-0.073	0.301	0.193		0.397
rLING	0.109	-0.081	0.291	0.235		0.433
lSOG	0.047	-0.141	0.231	0.611		0.674
rSOG	0.027	-0.161	0.228	0.773		0.808
lMOG	0.116	-0.086	0.299	0.209		0.397
rMOG	0.069	-0.128	0.256	0.455		0.602
lIOG	0.071	-0.123	0.259	0.444		0.602
rIOG	0.088	-0.101	0.273	0.339		0.531
lFFG	0.178	-0.006	0.351	0.052	*	0.262
rFFG	0.195	-0.004	0.389	0.033	**	0.262
lPoCG	0.063	-0.126	0.259	0.495		0.630
rPoCG	0.186	-0.005	0.377	0.042	**	0.262
lSPG	0.124	-0.065	0.299	0.176		0.385
rSPG	0.184	-0.001	0.358	0.044	**	0.262

lIPG	0.166	-0.017	0.351	0.070	*	0.262
rIPG	0.198	0.016	0.363	0.030	**	0.262
lSMG	0.200	0.009	0.374	0.028	**	0.262
rSMG	0.162	-0.037	0.346	0.077	*	0.266
lANG	0.155	-0.027	0.338	0.091	*	0.289
rANG	0.110	-0.078	0.286	0.233		0.433
lPCUN	0.079	-0.122	0.277	0.388		0.577
rPCUN	0.102	-0.099	0.284	0.266		0.461
lPCL	0.055	-0.129	0.245	0.550		0.654
rPCL	0.057	-0.124	0.251	0.536		0.654
lCAU	-0.046	-0.230	0.158	0.616		0.674
rCAU	-0.075	-0.246	0.115	0.416		0.596
lPUT	0.075	-0.103	0.261	0.416		0.596
rPUT	0.070	-0.094	0.260	0.445		0.602
lPAL	0.065	-0.124	0.247	0.484		0.630
rPAL	0.052	-0.126	0.240	0.574		0.654
lHES	0.144	-0.051	0.343	0.116		0.320
rHES	0.169	-0.017	0.352	0.066	*	0.262
lSTG	0.193	0.008	0.386	0.034	**	0.262
rSTG	0.135	-0.061	0.322	0.141		0.336
lTPOsup	0.119	-0.051	0.310	0.194		0.397
rTPOsup	0.183	-0.003	0.361	0.046	**	0.262
lMTG	0.234	0.036	0.426	0.010	**	0.262
rMTG	0.184	-0.015	0.370	0.044	**	0.262
lTPOmid	0.268	0.086	0.443	0.003	***	0.262
rTPOmid	0.217	0.034	0.382	0.017	**	0.262
lITG	0.198	-0.015	0.376	0.031	**	0.262
rITG	0.191	-0.005	0.366	0.037	**	0.262
lCERCRU1	-0.052	-0.229	0.118	0.572		0.654
rCERCRU1	-0.070	-0.259	0.111	0.446		0.602
lCERCRU2	0.118	-0.063	0.278	0.200		0.397
rCERCRU2	0.089	-0.095	0.262	0.335		0.531
lCER3	-0.062	-0.242	0.114	0.500		0.630
rCER3	-0.054	-0.224	0.129	0.557		0.654
lCER4_5	-0.021	-0.188	0.150	0.818		0.840
rCER4_5	-0.020	-0.205	0.158	0.827		0.842
lCER6	-0.052	-0.219	0.136	0.575		0.654
rCER6	-0.070	-0.242	0.106	0.447		0.602
lCER7b	0.162	-0.018	0.311	0.077	*	0.266
rCER7b	0.103	-0.081	0.260	0.265		0.461

lCER8	0.168	-0.012	0.333	0.067	*	0.262
rCER8	0.153	-0.029	0.324	0.094	*	0.289
lCER9	0.083	-0.088	0.243	0.367		0.560
rCER9	0.080	-0.086	0.237	0.385		0.577
lCER10	-0.123	-0.306	0.057	0.182		0.391
rCER10	0.010	-0.177	0.181	0.916		0.920
VER1_2	-0.087	-0.256	0.087	0.344		0.532
VER3	-0.025	-0.200	0.146	0.784		0.812
VER4_5	0.061	-0.108	0.218	0.507		0.632
VER6	-0.009	-0.171	0.148	0.920		0.920
VER7	-0.055	-0.227	0.108	0.549		0.654
VER8	0.098	-0.084	0.279	0.289		0.486
VER9	0.068	-0.110	0.249	0.457		0.602
VER10	-0.041	-0.221	0.144	0.660		0.702

Table S15. Gray matter volume (GMV) associations with the Abstraction domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognit--ive Impairment (n=62), and early onset Alzheimer's disease (n=14). Spearman correlation model constructed to determine significant ROI regions. Note: FDR = False Rate Discovery Rate. * = p < 0.1; ** = p < 0.05; and *** = p 0.01.

Memory/Delayed Recall Domain

aal3-ROIs	Spearman's ρ	Lower 95% CI	Upper 95% CI	p		p(FDR)	
lPreCG	0.266	0.097	0.425	0.003	***	0.009	***
rPreCG	0.232	0.052	0.414	0.011	**	0.021	**
lSFG	0.281	0.101	0.455	0.002	***	0.006	***
rSFG	0.237	0.060	0.402	0.009	***	0.018	**
lMFG	0.229	0.064	0.404	0.012	**	0.021	**
rMFG	0.239	0.067	0.415	0.008	***	0.018	**
lIFGoperc	0.266	0.074	0.437	0.003	***	0.009	***
rIFGoperc	0.308	0.127	0.483	0.001	***	0.003	***
lIFGtriang	0.327	0.143	0.488	0.000	***	0.002	***
rIFGtriang	0.333	0.154	0.494	0.000	***	0.002	***
lIFGorb	0.257	0.071	0.427	0.005	***	0.013	**
rIFGorb	0.238	0.049	0.406	0.009	***	0.018	**
lROL	0.330	0.166	0.489	0.000	***	0.002	***
rROL	0.238	0.062	0.406	0.009	***	0.018	**
lSMA	0.264	0.089	0.427	0.004	***	0.011	**
rSMA	0.113	-0.074	0.286	0.221		0.285	
lOLF	0.303	0.131	0.456	0.001	***	0.003	***
rOLF	0.298	0.121	0.449	0.001	***	0.004	***

lSFGmedial	0.242	0.064	0.414	0.008	***	0.018	**
rSFGmedial	0.214	0.029	0.385	0.019	**	0.031	**
lPFCventmed	0.232	0.044	0.407	0.011	**	0.021	**
rPFCventmed	0.229	0.060	0.389	0.012	**	0.021	**
lREC	0.256	0.071	0.431	0.005	***	0.013	**
rREC	0.319	0.159	0.472	0.000	***	0.003	***
lOFCmed	0.279	0.104	0.437	0.002	***	0.006	***
rOFCmed	0.278	0.106	0.431	0.002	***	0.006	***
lOFCant	0.243	0.075	0.402	0.008	***	0.018	**
rOFCant	0.313	0.144	0.461	0.000	***	0.003	***
lOFCpost	0.230	0.062	0.395	0.012	**	0.021	**
rOFCpost	0.214	0.058	0.372	0.019	**	0.031	**
lOFClat	0.252	0.083	0.406	0.005	***	0.013	**
rOFClat	0.097	-0.090	0.287	0.290		0.366	
lINS	0.336	0.162	0.492	0.000	***	0.002	***
rINS	0.316	0.150	0.468	0.000	***	0.003	***
lMCC	0.316	0.131	0.468	0.000	***	0.003	***
rMCC	0.290	0.118	0.445	0.001	***	0.004	***
lPCC	0.214	0.036	0.376	0.019	**	0.031	**
rPCC	0.252	0.073	0.422	0.006	***	0.015	**
lHIP	0.422	0.269	0.557	0.000	***	0.000	***
rHIP	0.353	0.190	0.506	0.000	***	0.001	***
lPHG	0.310	0.140	0.465	0.001	***	0.003	***
rPHG	0.323	0.159	0.474	0.000	***	0.002	***
lAMYG	0.388	0.216	0.524	0.000	***	0.000	***
rAMYG	0.388	0.222	0.525	0.000	***	0.000	***
lCAL	0.138	-0.038	0.313	0.132		0.178	
rCAL	0.191	0.012	0.362	0.037	**	0.056	*
lCUN	0.162	-0.018	0.338	0.077	*	0.108	
rCUN	0.218	0.046	0.397	0.017	**	0.029	**
lLING	0.250	0.070	0.413	0.006	***	0.015	**
rLING	0.233	0.061	0.410	0.010	**	0.020	**
lSOG	0.197	0.016	0.356	0.031	**	0.048	**
rSOG	0.331	0.162	0.493	0.000	***	0.002	***
lMOG	0.208	0.020	0.368	0.022	**	0.034	**
rMOG	0.241	0.042	0.409	0.008	***	0.018	**
lIOG	0.214	0.028	0.394	0.019	**	0.031	**
rIOG	0.236	0.045	0.420	0.009	***	0.018	**
lFFG	0.307	0.131	0.470	0.001	***	0.003	***
rFFG	0.291	0.109	0.449	0.001	***	0.004	***

lPoCG	0.283	0.118	0.448	0.002	***	0.006	***
rPoCG	0.307	0.149	0.462	0.001	***	0.003	***
lSPG	0.255	0.076	0.420	0.005	***	0.013	**
rSPG	0.165	-0.014	0.342	0.072	*	0.102	
lIPG	0.366	0.212	0.505	0.000	***	0.001	***
rIPG	0.288	0.093	0.457	0.001	***	0.004	***
lSMG	0.376	0.217	0.523	0.000	***	0.001	***
rSMG	0.219	0.032	0.379	0.016	**	0.028	**
lANG	0.230	0.040	0.401	0.011	**	0.021	**
rANG	0.304	0.136	0.470	0.001	***	0.003	***
lPCUN	0.209	0.029	0.378	0.022	**	0.034	**
rPCUN	0.239	0.064	0.404	0.009	***	0.018	**
lPCL	0.013	-0.157	0.180	0.886		0.909	
rPCL	0.092	-0.091	0.274	0.318		0.397	
lCAU	0.181	-0.006	0.356	0.048	**	0.072	*
rCAU	0.141	-0.043	0.326	0.125		0.171	
lPUT	0.071	-0.107	0.250	0.439		0.520	
rPUT	0.052	-0.129	0.239	0.572		0.656	
lPAL	-0.070	-0.254	0.111	0.448		0.525	
rPAL	0.017	-0.157	0.194	0.851		0.897	
lHES	0.375	0.205	0.529	0.000	***	0.001	***
rHES	0.177	0.010	0.346	0.053	*	0.078	*
lSTG	0.348	0.189	0.491	0.000	***	0.001	***
rSTG	0.241	0.073	0.415	0.008	***	0.018	**
lTPOsup	0.284	0.111	0.444	0.002	***	0.006	***
rTPOsup	0.303	0.135	0.463	0.001	***	0.003	***
lMTG	0.326	0.149	0.481	0.000	***	0.002	***
rMTG	0.271	0.082	0.434	0.003	***	0.009	***
lTPOmid	0.282	0.099	0.451	0.002	***	0.006	***
rTPOmid	0.321	0.143	0.476	0.000	***	0.003	***
lITG	0.217	0.035	0.400	0.017	**	0.029	**
rITG	0.252	0.073	0.424	0.005	***	0.013	**
lCERCRU1	0.051	-0.122	0.241	0.577		0.656	
rCERCRU1	0.032	-0.137	0.217	0.725		0.779	
lCERCRU2	0.174	0.007	0.351	0.057	*	0.083	*
rCERCRU2	0.179	0.020	0.351	0.051	*	0.076	*
lCER3	0.119	-0.065	0.309	0.196		0.255	
rCER3	0.035	-0.147	0.237	0.708		0.768	
lCER4_5	0.074	-0.101	0.251	0.420		0.508	
rCER4_5	0.128	-0.051	0.317	0.163		0.215	

lCER6	0.038	-0.133	0.222	0.684		0.749
rCER6	0.076	-0.090	0.254	0.409		0.499
lCER7b	0.143	-0.018	0.317	0.118		0.163
rCER7b	0.165	0.010	0.337	0.072	*	0.102
lCER8	0.107	-0.066	0.275	0.244		0.311
rCER8	0.136	-0.020	0.305	0.138		0.184
lCER9	0.081	-0.102	0.260	0.379		0.468
rCER9	0.073	-0.102	0.247	0.425		0.508
lCER10	-0.045	-0.210	0.137	0.627		0.699
rCER10	0.049	-0.112	0.219	0.592		0.667
VER1_2	0.006	-0.183	0.176	0.952		0.952
VER3	0.031	-0.150	0.214	0.737		0.784
VER4_5	-0.012	-0.192	0.168	0.893		0.909
VER6	-0.053	-0.230	0.136	0.565		0.655
VER7	0.043	-0.135	0.233	0.645		0.713
VER8	-0.015	-0.195	0.167	0.872		0.903
VER9	-0.008	-0.183	0.178	0.930		0.938
VER10	0.016	-0.167	0.193	0.867		0.903

Table S16. Gray matter volume (GMV) associations with the Memory/Delayed Recall domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognit--ive Impairment (n=62), and early onset Alzheimer's disease (n=14). Spearman correlation model constructed to determine significant ROI regions. Note: FDR = False Rate Discovery Rate. * = p < 0.1; ** = p < 0.05; and *** = p 0.01.

Orientation Domain

aal3-ROIs	Spearman's ρ	Lower 95% CI	Upper 95% CI	p		p(FDR)
lPreCG	0.055	-0.132	0.237	0.548		0.669
rPreCG	-0.036	-0.221	0.143	0.693		0.783
lSFG	0.167	-0.038	0.349	0.068	*	0.266
rSFG	0.169	-0.026	0.342	0.065	*	0.266
lMFG	0.163	-0.027	0.336	0.075	*	0.266
rMFG	0.114	-0.076	0.289	0.216		0.386
lIFGoperc	0.005	-0.190	0.210	0.953		0.970
rIFGoperc	0.051	-0.134	0.227	0.581		0.695
lIFGtriang	0.242	0.035	0.411	0.008	***	0.133
rIFGtriang	0.153	-0.043	0.325	0.096	*	0.266
lIFGorb	0.046	-0.138	0.218	0.617		0.722
rIFGorb	0.062	-0.123	0.232	0.504		0.629
lROL	0.151	-0.030	0.329	0.100		0.266
rROL	-0.007	-0.191	0.183	0.939		0.970

lSMA	0.215	0.045	0.376	0.019	**	0.174	
rSMA	0.012	-0.180	0.197	0.897		0.946	
lOLF	0.165	-0.026	0.348	0.072	*	0.266	
rOLF	0.130	-0.062	0.300	0.156		0.335	
lSFGmedial	0.203	0.022	0.377	0.026	**	0.174	
rSFGmedial	0.111	-0.076	0.292	0.228		0.389	
lPFCventmed	0.194	-0.002	0.364	0.034	**	0.177	
rPFCventmed	0.157	-0.039	0.339	0.087	*	0.266	
lREC	0.155	-0.027	0.328	0.091	*	0.266	
rREC	0.203	0.020	0.366	0.026	**	0.174	
lOFCmed	0.052	-0.149	0.239	0.572		0.691	
rOFCmed	0.109	-0.089	0.295	0.237		0.398	
lOFCant	0.127	-0.073	0.299	0.168		0.342	
rOFCant	0.224	0.042	0.384	0.014	**	0.174	
lOFCpost	0.084	-0.103	0.267	0.361		0.511	
rOFCpost	0.046	-0.134	0.218	0.620		0.722	
lOFClat	0.056	-0.126	0.242	0.544		0.669	
rOFClat	0.006	-0.163	0.182	0.946		0.970	
lINS	0.186	0.009	0.359	0.042	**	0.203	
rINS	0.117	-0.074	0.297	0.203		0.386	
lMCC	0.163	-0.038	0.335	0.076	*	0.266	
rMCC	0.127	-0.076	0.302	0.167		0.342	
lPCC	0.182	-0.008	0.360	0.047	**	0.218	
rPCC	0.202	-0.013	0.391	0.027	**	0.174	
lHIP	0.337	0.127	0.504	0.000	***	0.010	***
rHIP	0.252	0.021	0.441	0.006	***	0.116	
lPHG	0.212	0.009	0.389	0.020	**	0.174	
rPHG	0.176	-0.035	0.355	0.054	*	0.241	
lAMYG	0.355	0.145	0.524	0.000	***	0.008	***
rAMYG	0.293	0.084	0.474	0.001	***	0.029	**
lCAL	0.043	-0.149	0.243	0.639		0.734	
rCAL	0.113	-0.086	0.304	0.219		0.386	
lCUN	0.074	-0.118	0.248	0.424		0.572	
rCUN	0.125	-0.064	0.303	0.175		0.350	
lLING	0.071	-0.119	0.258	0.439		0.585	
rLING	0.064	-0.126	0.250	0.489		0.617	
lSOG	0.147	-0.042	0.316	0.110		0.266	
rSOG	0.196	0.011	0.380	0.032	**	0.177	
lMOG	0.151	-0.047	0.339	0.099	*	0.266	
rMOG	0.154	-0.043	0.329	0.093	*	0.266	

lIOG	0.065	-0.129	0.243	0.479		0.611	
rIOG	0.098	-0.091	0.275	0.288		0.464	
lFFG	0.113	-0.095	0.304	0.219		0.386	
rFFG	0.094	-0.114	0.295	0.307		0.469	
lPoCG	0.034	-0.148	0.219	0.711		0.793	
rPoCG	0.112	-0.084	0.304	0.223		0.386	
lSPG	0.156	-0.021	0.321	0.089	*	0.266	
rSPG	0.129	-0.052	0.297	0.159		0.335	
lIPG	0.270	0.098	0.438	0.003	***	0.070	*
rIPG	0.301	0.117	0.474	0.001	***	0.029	**
lSMG	0.097	-0.092	0.295	0.294		0.464	
rSMG	0.075	-0.140	0.283	0.413		0.564	
lANG	0.203	-0.001	0.388	0.026	**	0.174	
rANG	0.209	0.010	0.399	0.022	**	0.174	
lPCUN	0.235	0.045	0.412	0.010	**	0.145	
rPCUN	0.194	0.003	0.375	0.034	**	0.177	
lPCL	0.030	-0.144	0.220	0.745		0.815	
rPCL	-0.004	-0.190	0.178	0.967		0.975	
lCAU	0.015	-0.172	0.217	0.868		0.932	
rCAU	-0.032	-0.229	0.172	0.725		0.801	
lPUT	0.036	-0.158	0.224	0.695		0.783	
rPUT	0.002	-0.200	0.197	0.981		0.981	
lPAL	-0.166	-0.320	0.000	0.069	*	0.266	
rPAL	-0.083	-0.267	0.101	0.366		0.512	
lHES	0.157	-0.032	0.329	0.086	*	0.266	
rHES	0.089	-0.097	0.284	0.336		0.493	
lSTG	0.136	-0.061	0.338	0.138		0.314	
rSTG	0.136	-0.057	0.320	0.137		0.314	
lTPOsup	0.209	0.030	0.390	0.022	**	0.174	
rTPOsup	0.170	-0.009	0.351	0.063	*	0.266	
lMTG	0.197	-0.007	0.390	0.031	**	0.177	
rMTG	0.206	0.005	0.386	0.024	**	0.174	
lTPOmid	0.192	0.001	0.381	0.035	**	0.177	
rTPOmid	0.161	-0.016	0.340	0.079	*	0.266	
lITG	0.092	-0.100	0.275	0.320		0.476	
rITG	0.132	-0.067	0.323	0.151		0.330	
lCERCRU1	-0.067	-0.221	0.104	0.468		0.604	
rCERCRU1	-0.102	-0.263	0.070	0.268		0.438	
lCERCRU2	-0.092	-0.267	0.075	0.319		0.476	
rCERCRU2	-0.114	-0.276	0.066	0.216		0.386	

lCER3	-0.148	-0.314	0.034	0.106		0.266	
rCER3	-0.150	-0.299	0.014	0.103		0.266	
lCER4_5	-0.134	-0.310	0.052	0.145		0.323	
rCER4_5	-0.084	-0.267	0.109	0.361		0.511	
lCER6	-0.121	-0.287	0.051	0.188		0.370	
rCER6	-0.070	-0.233	0.115	0.446		0.588	
lCER7b	-0.096	-0.258	0.070	0.299		0.464	
rCER7b	-0.084	-0.250	0.089	0.360		0.511	
lCER8	-0.115	-0.279	0.064	0.213		0.386	
rCER8	-0.150	-0.316	0.024	0.103		0.266	
lCER9	-0.146	-0.319	0.026	0.110		0.266	
rCER9	-0.103	-0.276	0.070	0.262		0.434	
lCER10	-0.026	-0.196	0.145	0.774		0.839	
rCER10	0.045	-0.132	0.215	0.622		0.722	
VER1_2	-0.013	-0.172	0.154	0.891		0.946	
VER3	-0.112	-0.278	0.070	0.222		0.386	
VER4_5	-0.006	-0.177	0.166	0.947		0.970	
VER6	-0.079	-0.253	0.103	0.389		0.537	
VER7	-0.140	-0.303	0.030	0.126		0.298	
VER8	-0.153	-0.335	0.054	0.095	*	0.266	
VER9	-0.067	-0.233	0.109	0.469		0.604	
VER10	-0.095	-0.261	0.076	0.300		0.464	

Table S17. Gray matter volume (GMV) associations with the Orientation domain from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognit--ive Impairment (n=62), and early onset Alzheimer's disease (n=14). Spearman correlation model constructed to determine significant ROI regions. Note: FDR = False Rate Discovery Rate. * = p < 0.1; ** = p < 0.05; and *** = p 0.01.

	Total Score						
aal3-ROIs	**Spearman's ρ**	**Lower 95% CI**	**Upper 95% CI**	**p**		**p(FDR)**	
						0.037	
lPreCG	0.208	0.024	0.381	0.023	**		**
rPreCG	0.171	-0.010	0.354	0.061	*	0.090	*
lSFG	0.297	0.130	0.445	0.001	***	0.003	***
rSFG	0.251	0.072	0.402	0.006	***	0.013	**
lMFG	0.224	0.037	0.381	0.014	**	0.025	**
rMFG	0.211	0.018	0.369	0.021	**	0.035	**
lIFGoperc	0.242	0.066	0.402	0.008	***	0.016	**
rIFGoperc	0.228	0.053	0.384	0.012	**	0.022	**
lIFGtriang	0.308	0.136	0.462	0.001	***	0.003	***
rIFGtriang	0.323	0.161	0.476	0.000	***	0.002	***

lIFGorb	0.245	0.076	0.406	0.007	***	0.014	**
rIFGorb	0.255	0.086	0.396	0.005	***	0.011	**
lROL	0.339	0.176	0.485	0.000	***	0.002	***
rROL	0.187	0.016	0.348	0.041	**	0.063	*
lSMA	0.307	0.148	0.457	0.001	***	0.003	***
rSMA	0.143	-0.038	0.309	0.119		0.166	
lOLF	0.286	0.105	0.431	0.002	***	0.005	***
rOLF	0.266	0.086	0.421	0.003	***	0.007	***
lSFGmedial	0.288	0.111	0.445	0.001	***	0.003	***
rSFGmedial	0.222	0.041	0.383	0.015	**	0.026	**
lPFCventmed	0.265	0.081	0.430	0.004	***	0.009	***
rPFCventmed	0.277	0.105	0.431	0.002	***	0.005	***
lREC	0.288	0.112	0.446	0.001	***	0.003	***
rREC	0.313	0.124	0.471	0.001	***	0.003	***
lOFCmed	0.281	0.104	0.432	0.002	***	0.005	***
rOFCmed	0.281	0.106	0.438	0.002	***	0.005	***
lOFCant	0.276	0.108	0.419	0.002	***	0.005	***
rOFCant	0.336	0.180	0.478	0.000	***	0.002	***
lOFCpost	0.246	0.074	0.411	0.007	***	0.014	**
rOFCpost	0.210	0.041	0.360	0.021	**	0.035	**
lOFClat	0.247	0.082	0.397	0.007	***	0.014	**
rOFClat	0.128	-0.069	0.291	0.163		0.217	
lINS	0.327	0.161	0.480	0.000	***	0.002	***
rINS	0.328	0.163	0.474	0.000	***	0.002	***
lMCC	0.331	0.155	0.483	0.000	***	0.002	***
rMCC	0.306	0.129	0.463	0.001	***	0.003	***
lPCC	0.202	0.000	0.369	0.027	**	0.042	**
rPCC	0.270	0.064	0.445	0.003	***	0.007	***
lHIP	0.429	0.261	0.576	0.000	***	0.000	***
rHIP	0.339	0.156	0.489	0.000	***	0.002	***
lPHG	0.307	0.116	0.452	0.001	***	0.003	***
rPHG	0.339	0.158	0.486	0.000	***	0.002	***
lAMYG	0.389	0.220	0.535	0.000	***	0.000	***
rAMYG	0.339	0.151	0.494	0.000	***	0.002	***
lCAL	0.143	-0.042	0.326	0.118		0.166	
rCAL	0.172	-0.014	0.346	0.060	*	0.089	*
lCUN	0.199	0.005	0.383	0.029	**	0.045	**
rCUN	0.209	0.018	0.376	0.022	**	0.036	**
lLING	0.238	0.057	0.398	0.009	***	0.017	**
rLING	0.236	0.049	0.402	0.010	**	0.019	**

lSOG	0.220	0.032	0.404	0.016	**	0.027	**
rSOG	0.287	0.115	0.446	0.001	***	0.003	***
lMOG	0.245	0.055	0.421	0.007	***	0.014	**
rMOG	0.286	0.095	0.458	0.002	***	0.005	***
lIOG	0.204	0.014	0.385	0.026	**	0.041	**
rIOG	0.247	0.046	0.419	0.006	***	0.013	**
lFFG	0.323	0.140	0.477	0.000	***	0.002	***
rFFG	0.308	0.131	0.459	0.001	***	0.003	***
lPoCG	0.220	0.046	0.384	0.016	**	0.027	**
rPoCG	0.299	0.124	0.444	0.001	***	0.003	***
lSPG	0.291	0.120	0.454	0.001	***	0.003	***
rSPG	0.232	0.045	0.409	0.011	**	0.020	**
lIPG	0.428	0.282	0.558	0.000	***	0.000	***
rIPG	0.299	0.096	0.461	0.001	***	0.003	***
lSMG	0.324	0.175	0.469	0.000	***	0.002	***
rSMG	0.179	0.003	0.354	0.051	*	0.077	*
lANG	0.280	0.096	0.449	0.002	***	0.005	***
rANG	0.329	0.144	0.492	0.000	***	0.002	***
lPCUN	0.293	0.122	0.457	0.001	***	0.003	***
rPCUN	0.300	0.116	0.465	0.001	***	0.003	***
lPCL	0.043	-0.119	0.217	0.639		0.741	
rPCL	0.150	-0.021	0.313	0.103		0.148	
lCAU	0.133	-0.047	0.304	0.147		0.203	
rCAU	0.063	-0.112	0.237	0.492		0.588	
lPUT	0.120	-0.063	0.300	0.194		0.253	
rPUT	0.065	-0.113	0.245	0.480		0.580	
lPAL	-0.039	-0.225	0.127	0.671		0.756	
rPAL	0.037	-0.137	0.204	0.692		0.772	
lHES	0.321	0.164	0.454	0.000	***	0.002	***
rHES	0.231	0.058	0.380	0.011	**	0.020	**
lSTG	0.349	0.183	0.492	0.000	***	0.002	***
rSTG	0.250	0.073	0.418	0.006	***	0.013	**
lTPOsup	0.286	0.117	0.444	0.002	***	0.005	***
rTPOsup	0.268	0.104	0.429	0.003	***	0.007	***
lMTG	0.399	0.234	0.554	0.000	***	0.000	***
rMTG	0.332	0.154	0.490	0.000	***	0.002	***
lTPOmid	0.311	0.142	0.476	0.001	***	0.003	***
rTPOmid	0.346	0.190	0.496	0.000	***	0.002	***
lITG	0.281	0.100	0.454	0.002	***	0.005	***
rITG	0.306	0.140	0.468	0.001	***	0.003	***

lCERCRU1	0.016	-0.165	0.203	0.866		0.903
rCERCRU1	0.010	-0.175	0.201	0.916		0.924
lCERCRU2	0.161	-0.018	0.322	0.079	*	0.115
rCERCRU2	0.129	-0.046	0.294	0.159		0.214
lCER3	0.014	-0.173	0.188	0.883		0.906
rCER3	-0.025	-0.203	0.158	0.783		0.865
lCER4_5	0.071	-0.104	0.229	0.439		0.536
rCER4_5	0.113	-0.072	0.291	0.219		0.279
lCER6	0.003	-0.178	0.182	0.971		0.971
rCER6	0.040	-0.153	0.210	0.665		0.756
lCER7b	0.132	-0.050	0.290	0.151		0.206
rCER7b	0.117	-0.062	0.281	0.204		0.263
lCER8	0.110	-0.080	0.275	0.233		0.294
rCER8	0.123	-0.049	0.276	0.182		0.240
lCER9	0.076	-0.114	0.261	0.408		0.503
rCER9	0.051	-0.132	0.223	0.578		0.677
lCER10	-0.011	-0.181	0.169	0.903		0.919
rCER10	0.104	-0.063	0.275	0.258		0.322
VER1_2	-0.040	-0.219	0.142	0.661		0.756
VER3	-0.016	-0.192	0.161	0.860		0.903
VER4_5	0.054	-0.123	0.226	0.561		0.664
VER6	0.015	-0.179	0.198	0.872		0.903
VER7	-0.020	-0.195	0.166	0.828		0.903
VER8	0.018	-0.154	0.184	0.849		0.903
VER9	0.016	-0.158	0.188	0.865		0.903
VER10	-0.015	-0.192	0.173	0.868		0.903

Table S18. Gray matter volume (GMV) associations with the Total Score from the Montreal Cognitive Assessment (MoCA), in a sample of Alzheimer's Disease Neuroimaging Initiative (ADNI) Healthy Controls (n=44), Mild Cognit--ive Impairment (n=62), and early onset Alzheimer's disease (n=14). Spearman correlation model constructed to determine significant ROI regions. Note: FDR = False Rate Discovery Rate. * = $p < 0.1$; ** = $p < 0.05$; and *** = p 0.01.

Here are the full names of the AAL3 atlas regions:
lPreCG - Left Precentral Gyrus
rPreCG - Right Precentral Gyrus
lSFG - Left Superior Frontal Gyrus
rSFG - Right Superior Frontal Gyrus
lMFG - Left Middle Frontal Gyrus
rMFG - Right Middle Frontal Gyrus
lIFGoperc - Left Inferior Frontal Gyrus, Opercular part
rIFGoperc - Right Inferior Frontal Gyrus, Opercular part
lIFGtriang - Left Inferior Frontal Gyrus, Triangular part
rIFGtriang - Right Inferior Frontal Gyrus, Triangular part
lIFGorb - Left Inferior Frontal Gyrus, Orbital part
rIFGorb - Right Inferior Frontal Gyrus, Orbital part

lROL - Left Rolandic Operculum
rROL - Right Rolandic Operculum
lSMA - Left Supplementary Motor Area
rSMA - Right Supplementary Motor Area
lOLF - Left Lateral Frontal Orbital Gyrus
rOLF - Right Lateral Frontal Orbital Gyrus
lSFGmedial - Left Superior Frontal Gyrus, Medial part
rSFGmedial - Right Superior Frontal Gyrus, Medial part
lPFCventmed - Left Ventromedial Prefrontal Cortex
rPFCventmed - Right Ventromedial Prefrontal Cortex
lREC - Left Gyrus Rectus
rREC - Right Gyrus Rectus
lOFCmed - Left Medial Orbital Frontal Cortex
rOFCmed - Right Medial Orbital Frontal Cortex
lOFCant - Left Anterior Orbital Frontal Cortex
rOFCant - Right Anterior Orbital Frontal Cortex
lOFCpost - Left Posterior Orbital Frontal Cortex
rOFCpost - Right Posterior Orbital Frontal Cortex
lOFClat - Left Lateral Orbital Frontal Cortex
rOFClat - Right Lateral Orbital Frontal Cortex
lINS - Left Insula
rINS - Right Insula
lMCC - Left Middle Cingulate Cortex
rMCC - Right Middle Cingulate Cortex
lPCC - Left Posterior Cingulate Cortex
rPCC - Right Posterior Cingulate Cortex
lHIP - Left Hippocampus
rHIP - Right Hippocampus
lPHG - Left Parahippocampal Gyrus
rPHG - Right Parahippocampal Gyrus
lAMYG - Left Amygdala
rAMYG - Right Amygdala
lCAL - Left Calcarine Cortex
rCAL - Right Calcarine Cortex
lCUN - Left Cuneus
rCUN - Right Cuneus
lLING - Left Lingual Gyrus
rLING - Right Lingual Gyrus
lSOG - Left Superior Occipital Gyrus
rSOG - Right Superior Occipital Gyrus
lMOG - Left Middle Occipital Gyrus
rMOG - Right Middle Occipital Gyrus
lIOG - Left Inferior Occipital Gyrus
rIOG - Right Inferior Occipital Gyrus
lFFG - Left Fusiform Gyrus
rFFG - Right Fusiform Gyrus
lPoCG - Left Postcentral Gyrus
rPoCG - Right Postcentral Gyrus
lSPG - Left Superior Parietal Lobule
rSPG - Right Superior Parietal Lobule
lIPG - Left Inferior Parietal Lobule
rIPG - Right Inferior Parietal Lobule
lSMG - Left Supramarginal Gyrus
rSMG - Right Supramarginal Gyrus
lANG - Left Angular Gyrus
rANG - Right Angular Gyrus
lPCUN - Left Precuneus
rPCUN - Right Precuneus
lPCL - Left Postcentral Lobule
rPCL - Right Postcentral Lobule
lCAU - Left Caudate Nucleus
rCAU - Right Caudate Nucleus
lPUT - Left Putamen
rPUT - Right Putamen
lPAL - Left Pallidum
rPAL - Right Pallidum
lHES - Left Heschl's Gyrus
rHES - Right Heschl's Gyrus
lSTG - Left Superior Temporal Gyrus
rSTG - Right Superior Temporal Gyrus

lTPOsup - Left Temporal Pole, Superior
rTPOsup - Right Temporal Pole, Superior
lMTG - Left Middle Temporal Gyrus
rMTG - Right Middle Temporal Gyrus
lTPOmid - Left Temporal Pole, Middle
rTPOmid - Right Temporal Pole, Middle
lITG - Left Inferior Temporal Gyrus
rITG - Right Inferior Temporal Gyrus
lCERCRU1 - Left Cerebellar Crus I
rCERCRU1 - Right Cerebellar Crus I
lCERCRU2 - Left Cerebellar Crus II
rCERCRU2 - Right Cerebellar Crus II
lCER3 - Left Cerebellum III
rCER3 - Right Cerebellum III
lCER4_5 - Left Cerebellum IV-V
rCER4_5 - Right Cerebellum IV-V
lCER6 - Left Cerebellum VI
rCER6 - Right Cerebellum VI
lCER7b - Left Cerebellum VIIb
rCER7b - Right Cerebellum VIIb
lCER8 - Left Cerebellum VIII
rCER8 - Right Cerebellum VIII
lCER9 - Left Cerebellum IX
rCER9 - Right Cerebellum IX
lCER10 - Left Cerebellum X
rCER10 - Right Cerebellum X
VER1_2 - Vermis 1-2
VER3 - Vermis 3
VER4_5 - Vermis 4-5
VER6 - Vermis 6
VER7 - Vermis 7
VER8 - Vermis 8
VER9 - Vermis 9
VER10 - Vermis 10

List 1: aal3 region of interests (ROIs) supplementary list.