Supplementary Table 4. Results from voxel-wise SPM8 comparisons of the pMC group versus the CTR and PiB+ MCI groups.

Voxel-wise SPM8 inter-group comparisons for the ^{11}C-PiB, ^{11}C-DED, and ^{18}F-FDG tracers between the five pMC participants at ***baseline and follow-up*** versus the CTR and sporadic PiB+ MCI groups at ***baseline*** only. Statistical threshold: p<0.001 (uncorrected). Cluster size ≥ 20 voxels. The CTR groups were composed of non-carrier members of ADAD families (n=16) for ^{11}C-PiB and ^{18}F-FDG PET, and healthy subjects (n=14) for ^{11}C-DED PET.

CTR = control; ^{11}C-DED = ^{11}C-deuterium-L-deprenyl; ^{18}F-FDG = ^{18}F-fluorodeoxyglucose; MCI = mild cognitive impairment; ^{11}C-PiB = ^{11}C-Pittsburgh Compound-B; pMC = presymptomatic mutation carrier; SPM8 = statistical parametric mapping.

^{11}C-PiB			pMC > CTR				PiB+ MCI > pMC			
			baseline		follow-up		baseline		follow-up	
Lobe	Hammers region at peak	Hemisphere	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels
Frontal	superior frontal gyrus	Right (59)	**<0.001 (T=8.57)**	**20824**	**<0.001 (T=8.03)**	**45948**				
		Left (58)					0.561 (T=4.11)	25		
	posterior orbital gyrus	Right (73)	0.341 (T=4.15)	33						
	inferior frontal gyrus	Right (57)	**0.024 (T=5.29)** 0.158 (T=4.41)	**213** 74						
		Left (56)					0.529 (T=4.04)	29		
	middle frontal gyrus	Right (29)	0.451 (T=3.81)	21					0.518 (T=4.62) 0.196 (T=4.41)	33 129
	medial orbital gyrus	Right (69)					**0.010 (T=5.1)**	**563**	0.446 (T=4.66)	45
	anterior orbital gyrus	Right (55)					0.343 (T=4.12)	63		
	anterior cingulate gyrus	Left (24)					0.301 (T=4.75)	75		
	precentral gyrus	Left (50)							0.324 (T=4.64)	74
Parietal	inferiolateral remainder of parietal lobe	Right (33)	**0.020 (T=5.62)** 0.115 (T=4.88) 0.237 (T=4.54)	**228** 94 51						
	superior parietal gyrus	Right (63)			0.479 (T=4.41)	20			**0.001 (T=5.48)**	**1047**
		Right (63)							0.606 (T=4.09)	22
		Left (62)							**0.013 (T=5.44)**	**560**
	postcentral gyrus	Left (60)							0.384 (T=5.12)	58
		Left (60)							0.505 (T=4.27)	35
Temporal	posterior temporal lobe	Right (31)	0.059 (T=5.15)	141						
		Left (30)	**<0.001 (T=5.13)**	**1187**						
	middle and inferior temporal gyrus	Right (13)							**<0.001 (T=5.91)**	**3784**
		Left (14)							**0.040**	**358**

									(T=4.49)	
	superior temporal gyrus posterior part	Right (11)					**<0.001 (T=8.45)**	**26836**		
Occipital	lateral remainder of occipital lobe	Right (23)	0.356 (T=4.35)	31					0.062 (T=4.96)	288
		Left (22)			0.299 (T=4.76)	42			0.079 (T=4.22)	251
Sub-cortical	thalamus	Right (40)	0.060 (T=4.43)	140	0.067 (T=4.18)	141				

^{11}C-DED			pMC > CTR				pMC > PiB+ MCI			
			baseline		follow-up		baseline		follow-up	
Lobe	Hammers region at peak	hemisphere	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels
Frontal	Superior frontal gyrus	Right (59)			**0.039 (T=4.84)**	**79**	0.002 (T=6.56)	171	0.156 (T=4.58)	30
							0.195 (T=4.61)	23		
		Left (58)	0.053 (T=5.52)	56	**<0.001 (T=6.1)**	**396**			<0.001 (T=7.70)	728
									0.042 (T=4.13)	67
	Inferior frontal gyrus	Right (57)			**0.024 (T=4.91)**	**98**				
		Left (56)			**0.048 (T=4.7)**	**72**				
	Middle frontal gyrus	Right (29)			**0.020 (T=6.19)**	**106**				
					0.128 (T=4.54)	40				
		Left (28)	0.056 (T=5.9)	54	0.102 (T=5.07)	47				
	Anterior cingulate gyrus	Bilat (24)					**0.006 (T=6.01)**	**126**		
		Right (25)	**0. 028 (T=5.22)**	**75**						
		Left (24)	0.121 (T=4.64)	34	**<0.001 (T=5.93)**	**355**				
	Precentral gyrus	Bilat (50-51)							0.133 (T=5.61)	34
		Right (51)	**0.031 (T=5.31)**	**72**			0.205 (T=4.68)	22		
		Left (50)			0.153 (T=5.53)	35			0.232 (T=4.47)	21
					0.206 (T=4.71)	27				
	Subcallosal area	Right (79)							**0.015 (T=6.15)**	**101**
Parietal	inferiolateral remainder of parietal lobe	Right (33)	**0.006 (T=6.48)**	**126**	**0.027 (T=5.85)**	**93**				
	superior parietal gyrus	Right (63)	0.137 (T=4.46)	31						
		Left (62)			**<0.001 (T=7.48)**	**295**				
	postcentral gyrus	Right (61)	**0.016 (T=5.72)**	**94**						
		Left (60)	**0.004 (T=4.96)**	**145**						
			0.076 (T=4.41)	**46**						
	posterior cingulate gyrus	Left (26)	**0.024 (T=5.76)**	**80**	**<0.001 (T=7.08)**	**375**			0.243 (T=4.24)	20
					0.214	26				

					(T=7.07) 0.077 (T=5.65)	56				
Temporal	posterior temporal lobe	Left (30)			0.214 (T=4.92)	26	0.155 (T=5.38)	28		
	superior temporal gyrus anterior part	Right (83)			0.060 (T=5.53)	64	0.062 (T=6.7)	51		
Occipital	lateral remainder of occipital lobe	Left (22)	**0.017 (T=5.62)** 0.111 (T=5.30)	**92** 36	0.153 (T=7.05) 0.170 (T=4.54)	35 32	0.106 (T=4.99)	37	0.128 (T=6.14)	35
	Lingual gyrus	Left (64)	**0.039 (T=5.6)**	**65**						
	cuneus	Left (66)							0.177 (T=5.40)	27
Insula		Left (20)			**0.001 (T=5.06)**	**246**				
Sub-cortical	caudate	Left (34)			0.158 (T=5.91)	34			0.128 (T=5.52)	35
		Right (35)	0.143 (T=4.57) 0.132 (T=4.80)	30 32	**0.007 (T=5.51)**	**153**				
	thalamus	Right (41)	**0.004 (T=9.09)**	**142**	**<0.001 (T=11.06)**	**565**	**0.017 (T=6.11)**	**91**		
		Left (40)	**0.001 (T=9.59)**	**192**					**0.001 (T=6.38)**	**203**
Cerebellum	Cerebellum	Right (17)	0.099 (T=7.46)	39	**0.007 (T=4.95)** **<0.001 (T=4.57)**	**148** **20**			0.150 (T=5.21) 0.133 (T=4.95)	31 34
		Left (18)	**0.003 (T=6.74)**	**159**			0.226 (T=4.82)	20		

^{18}F-FDG			CTR > pMC				pMC > PiB+ MCI			
			baseline		follow-up		baseline		follow-up	
Lobe	Hammers region at peak	hemisphere	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels	p-value (uncorr) cluster level (T)	No. of voxels
Frontal	superior frontal gyrus	Right (59)					**<0.001 (T=6.85)**	**3287**	**<0.001 (T=7.73)**	**3557**
		Left (58)					**0.003 (T=5.65)**	**731**	0.324 (T=4.56)	54
	posterior orbital gyrus	Right (73)							0.265 (T=5.22)	69
	inferior frontal gyrus	Left (56)					0.432 (T=4.18) 0.367 (T=4.13)	39 51	0.177 (T=5.34) 0.119 (T=4.60)	103 140
	middle frontal gyrus	Right (29)					0.066 (T=4.63)	228		
		Left (28)			**<0.001 (T=4.96)**	**50**	0.087 (T=4.58) 0.307 (T=4.26)	194 65	0.071 (T=4.71) 0.501 (T=4.01)	195 26
	precentral gyrus	Left (50)							**0.025 (T=4.72)**	**320**
	Right straight gyrus	Right (53)					**0.014 (T=6.87)**	**444**		
	lateral orbital gyrus	Right (71)					0.185 (T=5.47)	111		
Parietal	inferiolateral	Right (33)							0.070	196

	remainder of parietal lobe								(T=5.19)	
		Left (32)			**<0.001 (T=5.73)**	**56**	0.487 (T=3.96)	31	0.374 (T=4.24)	44
	superior parietal gyrus	Right (63)			**<0.001 (T=4.15)**	**30**				
		Left (62)	0.511 (T=4.92)	23	**<0.001 (T=5.11)**	**67**				
	postcentral gyrus	Right (61)							0.444 (T=4.26)	33
		Left (60)	0.212 (T=5.28)	81						
	posterior cingulate gyrus	Left (26)			**<0.001 (T=5.73)**	**133**	0.135 (T=4.50)	144		
Temporal	posterior temporal lobe	Right (31)					**<0.001 (T=4.30)**	**34**	0.198 (T=4.99)	93
									0.205 (T=4.30)	90
		Left (30)							0.444 (T=4.96)	33
									0.467 (T=4.00)	30
	middle and inferior temporal gyrus	Right (13)							**0.008 (T=6.10)**	**476**
		Right (13)							0.291 (T=4,73)	62
		Left (14)					**0.034 (T=4.79)**	**314**	**<0.001 (T=4.27)**	**78**
	hippocampus	Right (1)					0.189 (T=6.62)	109		
		Left (2)					0.335 (T=4.96)	58	**0.023 (T=4.94)**	**330**
	fusiform gyrus	Left (16)							0.467 (T=4.59)	30
	amygdala	Right (3)							0.417 (T=6.84)	37
Occipital	cuneus	Right (67)			**<0.001 (T=4.12)**	**20**				
		Left (66)			**<0.001 (T=3.97)**	**20**				
Sub-cortical	thalamus	Right (41)					**0.045 (T=7.49)**	**278**	0.052 (T=8.14)	230
	caudate	Left (34)							**0.004 (T=7.04)**	**578**