

	Old PIB-	Old PIB+	Young
N	33	16	15
Age <sup>a</sup>	76.8±5.3(68-90)	75.6±4.7(70-84)	23.6±2.0(20-28)
CVLT15FR <sup>b</sup>	46.3±11.1 (26-69)	49.2±12.4 (35-73)	56.8±8.60(34-68)
CVLTSDFR <sup>b</sup>	9.5±3.3 (2-16)	10.5±2.9(6-16)	12.7±2.2 (8-15)
CVLTSDCR	11.4±2.7 (6-16)	11.8±2.9(7-16)	13.1±1.7 (9-15)
CVLTLDFR <sup>b</sup>	10.2±3.2 (3-16)	11.1±2.9(6-16)	13.2±2.0(9-16)
CVLTLCDR <sup>b</sup>	11.2±2.9(6-16)	11.7±2.6 (7-16)	13.5±1.9(9-16)
TrailB <sup>a</sup>	79.5±31.9 (1.1-187.1)	77.8±24.6 (41.0-139.1)	48.4±13.5(28.0-73.3)
TrailBminusA	42.4±29.8 (35.1-135.8)	38.6±16.1(15.3-75.2)	26.3±11.2(13.8-47.1)
Stroop <sup>a</sup>	45±13.1 (22-81)	52.1±12.4 (32-71)	63.5±12.5(37-80)
FASTotal	48.7±8.6(33-68)	45.5±13.9 (24-69)	47.6±10.0(33-68)
VegetablesTotal	13.5±3.8 (5-24)	14.5±6.2(8-31)	16.5±3.8(9-23)
AnimalsTotal	19.4±4.9(8-29)	21.1±8.5(12-46)	23.4±5.2(17-36)
DigitSymbol <sup>a</sup>	54.9±13.2(6-78)	59.7±13.3 (42-92)	82.3±15.7(56-111)
DSForward	8.8±2.5(4-14)	8.5±2.4(5-14)	8.7±2.3(5-12)
DSBackward	7.9±2.1 (5-13)	8.2±2.3 (4-12)	8.1±2.0(6-12)
LMAplusB1 <sup>a</sup>	27.5±5.2(17-39)	25.7±5.0(17-34)	31.9±7.1(15-41)
VRIRecallTotal <sup>a</sup>	71.3±13.2 (39-93)	72.7±12.8 (48-91)	85.9±9.6(58-97)
VRIRecallTotal <sup>a</sup>	53.1±17.5 (21-94)	57.1±19.0 (28-90)	75.5±19.7(25-95)
VRRecognitionTotal <sup>a</sup>	43.2±2.9 (37-48)	43.7±3.2(37-47)	46.6±2.4(39-48)
VRRetention	74.1±19.2(41.9-113.3)	77.3±17.1(48.4-100)	86.9±19.0(43.1-104.4)

Values are Mean ± S.D.(Min, Max)

<sup>a</sup> Young subjects are significantly different from both PIB+ and PIB- older subjects,  $p < 0.05$ ; no multiple comparison correction.

<sup>b</sup> Young subjects performed better than PIB- older subjects,  $p < 0.05$ ; no multiple comparison correction.

CVLT: California Verbal Learning Test; FR: Free recall; CR: Cued recall; SD: Short delay; LD: Long delay; DS: Digit span; LM: logical memory; Stroop: Stroop correct in 60s; VR: Visual reproduction.

### Supplementary Table 1.

#### Comparison of neuropsychological test scores by group.

Group scores were compared for all subjects included in the fMRI analysis. Seven young subjects did not complete neuropsychological testing. Young subjects differed from older subjects on multiple neuropsychological measures. However, no differences were found between PIB+ and PIB- groups.

	<b>Excluded</b>	<b>Included</b>
Gist Performance	<45%	>45%
N	5	49
Age <sup>a</sup>	81.8+4.76(74–86)	76.224+5.1529(68–90)
CVLT15FR	42+9.3(27–51)	47.265+11.5358(26–73)
CVLTSDFR	7.6+3.2(3–11)	9.878+3.1334(2–16)
CVLTSDCR	9.2+2.0(6–11)	11.49+2.7623(6–16)
CVLTLDFR	8.4+2.1(5–10)	10.5+3.1 (3–16)
CVLTLD CR <sup>b</sup>	8.8+1.6(7–11)	11.3+2.8(6–16)
TrailB	75.9+21.0(44.7–100.7)	78.9+29.5(1.1–187.1)
TrailBminusA	46.8+18.5(22.8–72.1)	41.1+26.0(–35.1–135.8)
Stroop	43.6+5.7(36–50)	47.3+13.2(22–81)
FASTotal	49.8+15.0(28–69)	47.7+10.5(24–69)
VegetablesTotal	11.2+3.0(8–16)	13.8+4.6(5–31)
AnimalsTotal	18.2+3.1(14–21)	19.9+6.2(8–46)
DigitSymbol	58.4+8.3(51–72)	56.4+13.3(6–92)
DSForward	8.4+2.5(5–12)	8.7+2.4(4–14)
DSBackward	8.6+2.5(7–13)	8.0+2.2(4–13)
LMAplusB1	26.8+5.5(20–33)	26.9+5.1(17–39)
VRIRecallTotal	69+18.6(50–95)	71.8+13.0(39–93)
VRIRecallTotal	58+23.1(35–90)	54.3+17.9(21–94)
VRRecognitionTotal	42.4+3.5 (39–46)	43.396+2.9732(37–48)
VRRetention	82.2+14.1(70.–100)	75.1+18.4(41.0–113.3)

Values are Mean ± S.D.(Min, Max)

<sup>a</sup>  $p < 0.05$ ; no multiple comparison correction.

<sup>b</sup>  $p = 0.05$ ; no multiple comparison correction.

CVLT: California Verbal Learning Test; FR: Free recall; CR: Cued recall; SD: Short delay; LD: Long delay; DS: Digit span; LM: logical memory; Stroop: Stroop correct in 60s; VR: Visual reproduction.

### Supplementary Table 2.

#### Comparison of neuropsychological test scores between subjects included and excluded based on gist performance.

Older subjects' neuropsychological test scores were compared between subjects included and excluded from fMRI analysis due to poor gist performance. Excluded subjects were significantly older than included subjects, but neuropsychological scores were similar on all but one measure (CVLT Long Delay Cued Recall). Of the excluded subjects, 3 were classified as PIB+ and 2 as PIB–.

Cluster Size (voxels)	X (mm)	Y (mm)	Z (mm)	Z-Score	Hemisphere	Region
<i>Task Positive</i>						
93602	34	-92	4	21.1	R	Occipital Pole
	34	-80	22	21.1	R	Superior Lateral Occipital Cortex
	26	-92	-4	20.6	R	Occipital Pole
	38	-88	-2	20.4	R	Inferior Lateral Occipital Cortex
	-30	-50	-18	20	L	Temporal Occipital Fusiform Cortex
	34	-90	-4	19.8	R	Inferior Lateral Occipital Cortex
	34	-44	-20	19.6	R	Temporal Occipital Fusiform Cortex
	-30	-92	0	19.4	L	Occipital Pole
	46	-48	-18	19.3	R	Temporal Occipital Fusiform Cortex
	-38	-88	-4	19	L	Inferior Lateral Occipital Cortex
	18	-100	-2	18.8	R	Occipital Pole
	28	-38	-20	18.3	R	Temporal Fusiform Cortex
	-40	-88	0	18.1	L	Inferior Lateral Occipital Cortex
	36	-86	12	18.1	R	Superior Lateral Occipital Cortex
	28	-50	-16	18	R	Temporal Occipital Fusiform Cortex
20	-12	-22	10.6	R	Hippocampus	
<i>Task Negative</i>						
10441	2	50	-4	9.02	R	Paracingulate Gyrus
	2	54	-2	8.84	R	Paracingulate Gyrus
	-4	40	-8	8.66	L	Paracingulate Gyrus
	0	36	-4	8.47	R	Anterior Cingulate Gyrus
	-4	40	-2	8.38	L	Anterior Cingulate Gyrus
8900	8	-82	24	9.57	R	Cuneal Cortex
	6	-80	28	9.02	R	Cuneal Cortex
	0	-78	32	8.56	R	Cuneal Cortex
	-4	-84	26	8.52	L	Cuneal Cortex
	-6	-76	22	8.29	L	Cuneal Cortex
4222	-52	-64	34	8.11	L	Superior Lateral Occipital Cortex
	-50	-64	42	7.97	L	Superior Lateral Occipital Cortex
	-46	-68	42	7.97	L	Superior Lateral Occipital Cortex
	-52	-58	46	7.47	L	Angular Gyrus
	-62	-26	-16	7.43	L	Middle Temporal Gyrus
2111	62	-26	-10	5.74	R	Middle Temporal Gyrus
	60	-30	0	5.74	R	Superior Temporal Gyrus
	60	-20	-22	5.19	R	Middle Temporal Gyrus
	70	-22	-6	5.06	R	Middle Temporal Gyrus
	56	-30	6	5.06	R	Superior Temporal Gyrus

1729	52	-64	38	11.6	R	Superior Lateral Occipital Cortex
	54	-56	38	11.4	R	Angular Gyrus
	60	-44	44	5.6	R	Supramarginal Gyrus
	68	-46	12	2.55	R	Angular Gyrus
	68	-40	14	1.78	R	Supramarginal Gyrus

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**Supplementary Table 3.**

**Areas of activation and deactivation for hits in the gist task.**

Contrasts of activity for hits versus baseline were averaged across young, old PIB+ and PIB- groups, controlling for voxelwise gray matter and performance. The average across groups was used to generate maps of task positive and task negative regions. Coordinates of local maxima within significant clusters are reported in MNI-space and regional labels were derived from the Harvard-Oxford Cortical Atlas.

Cluster Size (voxels)	X (mm)	Y (mm)	Z (mm)	Z-Score	Hemisphere	Region
<i>Linear Increase</i>						
1952	-50	-80	-8	4.59	L	Inferior Lateral Occipital Cortex
	-38	-86	0	4.5	L	Inferior Lateral Occipital Cortex
	-44	-62	-8	4.23	L	Inferior Temporal Gyrus
	-34	-78	8	4.14	L	Inferior Lateral Occipital Cortex
	-38	-68	-12	4.11	L	Occipital Fusiform Gyrus
	-42	-72	-10	4.05	L	Inferior Lateral Occipital Cortex
	-48	-76	-8	3.69	L	Inferior Lateral Occipital Cortex
	-52	-60	-10	3.66	L	Inferior Temporal Gyrus
	-52	-60	-2	3.66	L	Middle Temporal Gyrus
	-40	-52	-12	3.23	L	Temporal Occipital Fusiform Cortex
1738	42	-56	-16	4.04	R	Temporal Occipital Fusiform Cortex
	42	-60	-14	4	R	Temporal Occipital Fusiform Cortex
	42	-48	-18	3.91	R	Temporal Occipital Fusiform Cortex
	48	-70	-10	3.89	R	Inferior Lateral Occipital Cortex
	52	-54	-8	3.68	R	Inferior Temporal Gyrus
	38	-68	-8	3.6	R	Occipital Fusiform Gyrus
	28	-38	-12	3.53	R	Lingual Gyrus
	34	-44	-20	3.51	R	Temporal Occipital Fusiform Cortex
	50	-64	-2	3.44	R	Inferior Lateral Occipital Cortex
	50	-64	6	3.39	R	Inferior Lateral Occipital Cortex
<i>Linear Decrease</i>						
4778	-12	-2	48	4.76	L	Supplementary Motor Cortex
	-6	28	18	4.28	L	Anterior Cingulate Gyrus
	-16	14	38	4.26	L	Paracingulate Gyrus
	16	-42	12	4.01	R	Right Hippocampus
	-32	18	4	3.81	L	Insular Cortex
	3049	60	-30	-4	5.25	R
64		-28	-12	5.03	R	Middle Temporal Gyrus
56		-46	52	4.65	R	Angular Gyrus
52		-58	50	4.28	R	Superior Lateral Occipital Cortex
50		-32	26	4.08	R	Parietal Operculum Cortex
1648	2	-72	40	4.28	R	Precuneous Cortex
	-2	-72	34	4.06	L	Precuneous Cortex
	2	-76	30	3.93	R	Cuneal Cortex
	10	-66	34	3.83	R	Precuneous Cortex
	10	-78	48	3.73	R	Superior Lateral Occipital Cortex
1519	-50	-30	8	4.2	L	Planum Temporale
	-56	-44	22	3.89	L	Supramarginal Gyrus
	-42	-58	44	3.71	L	Angular Gyrus
	-60	-46	24	3.6	L	Supramarginal Gyrus
	-32	-52	36	3.58	L	Angular Gyrus

1128	42	26	36	4.32	R	Middle Frontal Gyrus
	46	18	48	3.87	R	Middle Frontal Gyrus
	44	32	38	3.83	R	Middle Frontal Gyrus
	46	10	52	3.67	R	Middle Frontal Gyrus
	28	22	56	3.54	R	Superior Frontal Gyrus

**Supplementary Table 4.**

**Areas displaying linear increases and decreases across detail level in the details task.**

Linear contrasts of activity for hits by detail level (Hit\_5/6 > Hit\_4 > Hit\_3 > Hit\_2 > Hit0/1) were modeled for young, old PIB+ and PIB- groups, controlling for gray matter and performance. The average across groups results in a map of parametric increases and parametric decreases across groups. Coordinates of local maxima within significant clusters are reported in MNI-space and regional labels were derived from the Harvard-Oxford Cortical Atlas.

Cluster Size (voxels)	Z-Score	X (mm)	Y (mm)	Z (mm)	Hemisphere	Region
<i>Young &gt; Old PIB-</i>						
8220	5.1	-14	-56	18	L	Precuneous Cortex
	4.92	36	-98	6	R	Occipital Pole
	4.79	-6	-66	40	L	Precuneous Cortex
	4.72	4	-76	42	R	Precuneous Cortex
	4.62	2	-36	18	R	Posterior Cingulate Gyrus
	4.55	-42	-68	24	L	Superior Lateral Occipital Cortex
	4.27	-44	-56	16	L	Angular Gyrus
	4.18	14	-64	40	R	Precuneous Cortex
	4.11	-24	-74	52	L	Superior Lateral Occipital Cortex
	4.05	36	-62	26	R	Superior Lateral Occipital Cortex
4600	5.38	10	22	-2	R	Right Caudate
	5.21	56	16	4	R	Inferior Frontal Gyrus
	5.16	12	22	2	R	Right Caudate
	5.03	36	48	28	R	Frontal Pole
	4.4	20	10	12	R	Right Caudate
	4.29	54	10	4	R	Precentral Gyrus
	4.2	20	60	18	R	Frontal Pole
	4.16	36	32	-14	R	Frontal Orbital Cortex
	4.07	60	16	14	R	Inferior Frontal Gyrus
	3.83	34	36	42	R	Frontal Pole
1674	5.58	-20	-34	-2	L	Left Thalamus
	4.66	-28	-38	-16	L	Temporal Fusiform Cortex
	4.44	-28	-18	20	L	Lingual Gyrus
	4.44	-24	-42	-8	L	Lingual Gyrus
	4.27	-26	-52	-16	L	Temporal Occipital Fusiform Cortex
	3.74	-30	-26	-16	L	Parahippocampal Gyrus
	3.7	-40	-42	-16	L	Temporal Fusiform Cortex
	3.43	-16	-44	-14	L	Lingual Gyrus
	3.28	-32	-74	-10	L	Occipital Fusiform Gyrus
	1389	5.05	42	-44	-14	R
4.94		20	-35	2	R	Hippocampus
4.94		20	-36	2	R	Parahippocampal Gyrus
4.77		22	-38	-16	R	Parahippocampal Gyrus
4.29		28	-46	-10	R	Temporal Occipital Fusiform Cortex
4.27		26	-52	-16	R	Temporal Occipital Fusiform Cortex
4.24		20	-32	2	R	Right Thalamus
4.13		22	-50	-14	R	Temporal Occipital Fusiform Cortex
3.98		36	-62	-4	R	Occipital Fusiform Gyrus
3.83		46	-50	-10	R	Inferior Temporal Gyrus
<i>PIB+ &gt; Old PIB-</i>						
1568	5.85	-12	-56	42	L	Precuneous Cortex

	5.14	-10	-60	44	L	Precuneous Cortex
	4.22	32	-62	26	R	Superior Lateral Occipital Cortex
	3.88	30	-58	34	R	Superior Lateral Occipital Cortex
	3.79	-20	-34	64	L	Postcentral Gyrus
	3.58	8	-44	64	R	Precuneous Cortex
	3.49	-20	-34	58	L	Postcentral Gyrus
	3.42	8	-40	66	R	Postcentral Gyrus
	3.35	34	-56	36	R	Angular Gyrus
	3.1	-24	-80	32	L	Superior Lateral Occipital Cortex
1343	4.45	54	30	24	R	Middle Frontal Gyrus
	4.33	40	46	28	R	Middle Frontal Gyrus
	3.85	-16	68	12	L	Frontal Pole
	3.74	-10	70	14	L	Frontal Pole
	3.67	64	12	22	R	Precentral Gyrus
	3.56	32	54	28	R	Frontal Pole
	3.51	62	22	22	R	Precentral Gyrus
	3.3	38	38	44	R	Frontal Pole
	3.26	28	58	26	R	Frontal Pole
	3.05	48	26	36	R	Middle Frontal Gyrus
1185	4.75	42	-34	62	R	Postcentral Gyrus
	3.92	52	-32	54	R	Supramarginal Gyrus
	3.76	36	-20	66	R	Precentral Gyrus
	3.58	42	-22	64	R	Precuneous Cortex
	3.51	50	-38	56	R	Precentral Gyrus
	3.4	50	-10	54	R	Precentral Gyrus
	3.1	60	-26	44	R	Supramarginal Gyrus
	3.07	42	-12	58	R	Precentral Gyrus
	3	38	-22	26	R	Parietal Operculum Cortex
	2.82	40	-30	36	R	Supramarginal Gyrus
1170	4.27	2	32	28	R	Paracingulate Gyrus
	4.15	-36	0	58	L	Middle Frontal Gyrus
	3.81	6	32	32	R	Paracingulate Gyrus
	3.37	-42	-8	60	L	Precentral Gyrus
	3.35	4	22	36	R	Paracingulate Gyrus
	3.33	-30	30	48	L	Middle Frontal Gyrus
	3.23	4	0	42	R	Anterior Cingulate Gyrus
	3.07	-2	4	34	L	Anterior Cingulate Gyrus
	3.03	-32	18	58	L	Middle Frontal Gyrus
	3.03	-32	26	50	L	Middle Frontal Gyrus

**Supplementary Table 5.**

**Age and PIB effects in the gist task.**



Contrasts of activity for hits versus baseline were compared between young and old PIB– groups to test for age effect, and between old PIB+ and PIB– groups to test for the PIB effect. All comparisons controlled for gray matter and performance, and the test of PIB effect additionally controlled for age. Coordinates of local maxima within significant clusters are reported in MNI-space and regional labels were derived from the Harvard-Oxford Cortical Atlas.

Cluster Size (voxels)	Z-score	X (mm)	Y (mm)	Z (mm)	Hemisphere	Region	
<i>Young &gt; Old PIB-</i>							
11323	5.58	-32	-76	12	L	Superior Lateral Occipital Cortex	
	5.14	36	-84	18	R	Superior Lateral Occipital Cortex	
	5.12	-40	-68	10	L	Inferior Lateral Occipital Cortex	
	4.9	34	-84	14	R	Superior Lateral Occipital Cortex	
	4.84	20	-48	54	R	Superior Lateral Occipital Cortex	
	4.68	-32	-70	8	L	Inferior Lateral Occipital Cortex	
	4.58	56	-66	-12	R	Inferior Lateral Occipital Cortex	
	4.53	50	-42	-20	R	Inferior Temporal Gyrus	
	4.49	-22	-68	36	L	Superior Lateral Occipital Cortex	
	4.38	-6	-42	56	L	Precuneus Cortex	
	1410	4.23	-28	-4	6	L	Left Putamen
		3.9	2	-28	2	R	Right Thalamus
		3.9	34	-14	-10	R	Right Putamen
		3.79	-30	-16	-2	L	Left Putamen
3.77		-18	4	14	L	Left Caudate	
3.66		12	-34	2	R	Posterior Cingulate Gyrus	
3.46		36	-12	-14	R	Right Hippocampus	
3.39		-20	10	8	L	Left Putamen	
3.35		-8	-20	10	L	Left Thalamus	
3.26		-16	-26	-6	L	Left Thalamus	
<i>Old PIB+ &gt; Old PIB-</i>							
4732	4.19	-20	-56	58	L	Superior Parietal Lobule	
	4.01	-2	-60	30	L	Precuneus Cortex	
	4.01	42	-44	34	R	Supramarginal Gyrus	
	3.98	50	-30	44	R	Postcentral Gyrus	
	3.93	24	-42	62	R	Postcentral Gyrus	
	3.9	-10	-44	30	L	Postcentral Gyrus	
	3.81	26	-68	32	R	Superior Lateral Occipital Cortex	
	3.77	-4	-42	58	L	Angular Gyrus	
	3.73	48	-70	28	R	Angular Gyrus	
	3.7	42	-50	36	R	Angular Gyrus	

**Supplementary Table 6.**

**Age and PIB effects in the details task.**

Linear contrasts of activity for hits by detail level (Hit\_5/6 > Hit\_4 > Hit\_3 > Hit\_2 > Hit0/1) were compared between young and old PIB- groups to test for the age effect, and between the old PIB+ and PIB- groups to test for the PIB effect. All comparisons controlled for gray matter and performance, and the test of PIB effect additionally controlled for age. Coordinates of local maxima within significant clusters are reported in MNI-space and regional labels were derived from the Harvard-Oxford Cortical Atlas.