

## Supplemental Material

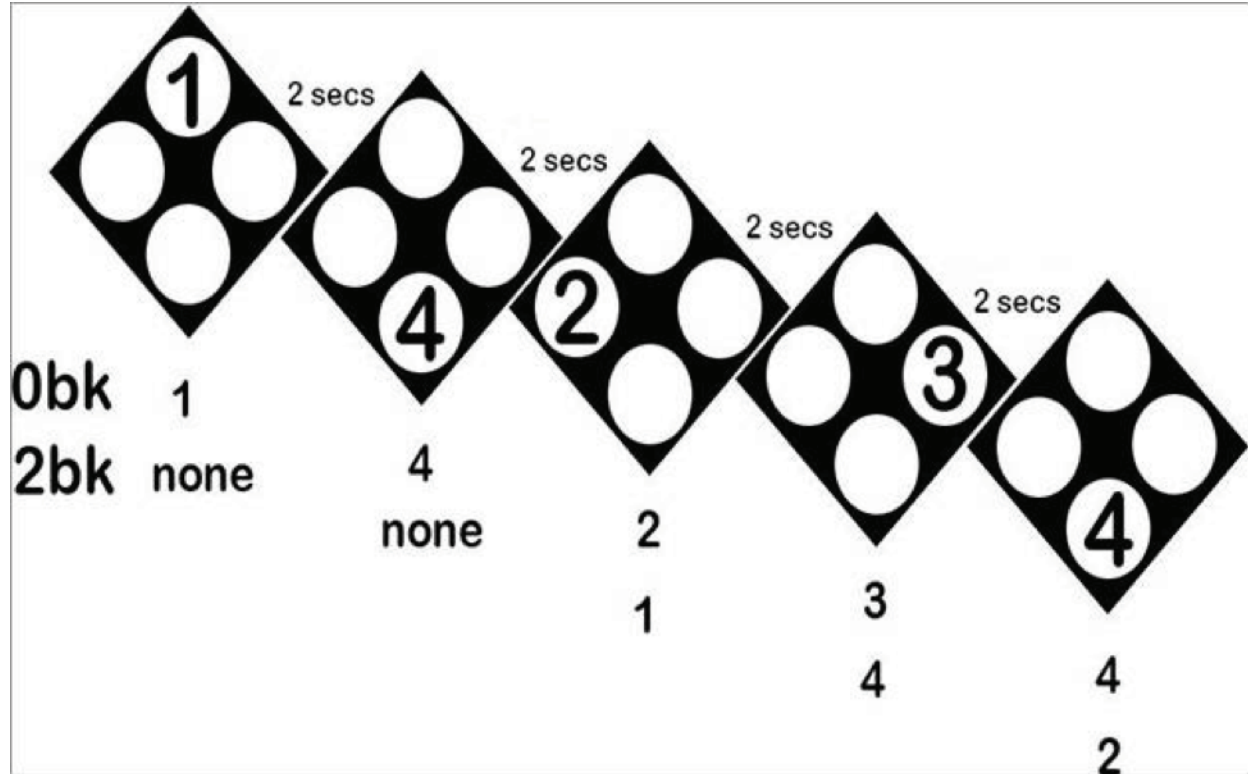
<b>Supplemental Table 1</b>							
Regions showing increased activation for Patients compared with Controls in 2-back>0-back.							
P<0.05 false-discovery-rate-corrected (FDRcorr), extent threshold=50 voxels							
	Brain Region	MNI Coordinates			cluster size	T values	P <sub>FDRcorr</sub> values
		x	y	z			
<b>PET</b>							
<u>Controls&gt;Patients</u>							
	NO SIGNIFICANT CLUSTERS						
<u>Patients&gt;Controls</u>							
	Left Cerebellum	-48	-70	-38	7757	7.19	0.00001
	Left Inferior Frontal Gyrus (BA45)	-46	16	24	2361	7.05	0.00001
	Right Middle Frontal Gyrus (BA9)	52	24	38	2844	6.99	0.00001
	Left Superior Temporal Gyrus (BA22)	-60	-52	18	170	5.55	0.00004
	Right Medial Frontal Gyrus (BA8)	8	34	42	498	5.09	0.0001
	Right Inferior Parietal Lobule (BA40)	54	-50	34	611	4.98	0.0001
	Left Precuneus (BA7)	-2	-50	50	56	4.79	0.0002
	Left Middle Frontal Gyrus (BA8)	-34	14	54	256	4.17	0.001
	Left Precuneus (BA7)	-2	-72	50	121	3.90	0.002
<b>fMRI</b>							
<u>Controls &gt; Patients</u>							
	Right Cuneus (BA19)	26	-86	30	158	6.96	0.0001
	Supramarginal Gyrus (BA40)	-50	-40	24	279	6.46	0.0002
	Left Precuneus (BA7)	-16	-80	48	68	5.60	0.0007
	Right Precentral Gyrus (BA6)	32	-18	68	67	5.58	0.0007
	Left Cuneus (BA19)	-24	-90	20	92	5.57	0.0007
	Left Middle Temporal Gyrus (BA39)	-30	-68	26	68	4.37	0.007
<u>Patients &gt; Controls</u>							
	Left Superior Frontal Gyrus (BA8)	-2	20	56	18111	16.93	<0.00001
	Left Inferior Parietal Lobule (BA40)	-36	-48	46	6780	12.98	<0.00001
	Left Middle Occipital Gyrus (BA19)	-44	-84	10	1210	6.77	<0.00001
	Left Inferior Parietal Lobule (BA40)	-62	-28	34	150	5.49	0.00001
	Right Cerebellum	32	-68	-32	573	5.29	0.00002
	Left Cerebellum	-36	-74	-26	381	3.93	0.0008
	Left Precentral Gyrus(BA4)	-36	-8	52	66	3.15	0.006
	Right Middle Occipital Gyrus(BA19)	42	-58	-10	101	3.09	0.007

\*Brain areas outside the frontal lobe were not hypothesized a priori.

<b>Supplemental Table 2</b>						
Regions showing a correlation between brain activation and GAF scores. P<0.05 false-discovery-rate-corrected (FDRcorr), extent threshold=50 voxels						
Brain Region	MNI Coordinates			cluster size	T values	P <sub>FDRcorr</sub> values
	x	y	z			
<b>PET</b>						
<u>Positive Correlation</u>						
NO SIGNIFICANT CLUSTERS						
<u>Negative Correlation</u>						
* Left Middle Frontal Gyrus (BA8)	-36	12	54	226	7.78	0.0002
* Right Inferior Frontal Gyrus (BA10)	38	52	4	594	7.33	0.0002
* Left Inferior Frontal Gyrus (BA46)	-38	48	10	785	6.35	0.002
* Right Middle Frontal Gyrus (BA8)	48	16	52	303	5.16	0.001
* Right Cerebellum	8	-82	-30	591	4.93	0.002
* Right Superior Parietal Lobule (BA7)	36	-48	50	120	4.35	0.004
* Right Cerebellum	32	-60	-28	75	4.35	0.004
* Left Cerebellum	-40	-70	-20	159	4.34	0.003
Left Inferior Temporal Gyrus (BA37)	-56	-62	-8	54	4.05	0.006
Right Cerebellum	60	-52	-34	172	4.02	0.006
<b>fMRI</b>						
<u>Positive Correlation</u>						
Left Superior Temporal Gyrus (BA22)	-44	-54	16	74	8.21	0.00001
Right Middle frontal Gyrus (BA10)	24	44	24	61	7.24	0.00005
<u>Negative Correlation</u>						
* Right Middle Frontal Gyrus (BA9)	42	14	32	2730	10.20	<0.00001
* Left Superior Frontal Gyrus (BA8)	-6	16	56	3168	9.16	<0.00001
* Left Middle Frontal Gyrus (BA9/46)	-38	38	32	2014	9.10	<0.00001
* Left Superior Parietal Lobule (BA7)	-36	-64	58	1122	8.52	<0.00001
* Left Middle Occipital Gyrus (BA19)	-40	-84	14	709	8.23	<0.00001
* Right Superior Parietal Lobule (BA7)	40	-54	52	1350	7.35	0.00001
Left Inferior Frontal Gyrus (BA47)	-36	24	2	1349	6.58	0.00002
Right Middle Temporal Gyrus (BA19)	42	-80	16	63	5.69	0.00008
* Right Cerebellum	34	-76	-24	90	4.67	0.0005
* Right Precuneus (BA7)	18	-64	64	57	4.43	0.001
* Right Putamen	16	8	6	228	3.55	0.006

\* Indicates where clusters in GAF Negative Correlation and Activation overlapped within 5mm sphere (Within Modality)

Supplemental Figure 1



For the N-back task, the numbers 1–4 were presented on a computer monitor at set locations at the points of a diamond-shape and were shown in random order, one every two seconds. Subjects indicated a response at each trial by pressing one of four buttons arrayed on a response box in the same configuration as the stimuli on the screen. During the 0-back sensorimotor control task, participants pressed the button corresponding to the number shown at the time of the current trial, whereas during the 2-back working-memory task, they were instructed to press the button corresponding to the number shown two trials previously. There is no recognition involved, and working memory is emphasized.