

Data supplement to Ramsay et al. Neuroplastic changes in patients with schizophrenia undergoing cognitive remediation: triple-blind trial. Br J Psychiatry doi: 10.1192/bjp.bp.115.171496

Table DS1 Cognitive training tasks and training time

Training Emphasis Domains and Training Tasks	Training Time (min)	Training Emphasis Domains and Training Tasks	Training Time (min)
Attentional Control		Maintenance & Strategic Recall	
PSS Visual Tracking 1	30	PSS Sequenced Recall Digits Visual	60
PSS Simultaneous Multiple Attention	100	PSS Sequenced Recall Words Visual	60
BT The Great Hunt	80	BT A Day at the Races	60
BT Smart Detective	80	Total	180
Total	290	Maintenance, Manipulation, & Strategic Recall	
Attentional Control & Maintenance		BT Tricky Tracks	60
Word N-Back	375	PSS Sequenced Recall Reversed Digits Visual	60
Picture N-Back	375		
Total	750	BT Touchdown!	60
Maintenance		BT Where's My Car?	50
BT Bingo Discovery	60	Total	230
BT Don't Be Late	60	Maintenance & Manipulation	
PSS The Phone Message	60	BT Match Play	60
PSS Shapes and Places	50	Total	60
BT Puzzle Power	50	Elective Tasks	
Total	280	Total	600
Short-term Memory & Strategic Recall			
PSS Verbal Memory (Categorizing)	50		
PSS Recognition Recall	50		
Total	100		

Variants of word and picture N-back tasks were trained in equal frequency, with 2-3 administrations of each task completed weekly. Participants spent elective time training on any task other than a N-back. In a 60-minute session, approximately 50 minutes was spent directly with training tasks.

PSS = Psychological Software Services. BT = BrainTrain's Capitan's Log software.

Table DS2 Change in Behavioral Performance.

	CRI Time 1	CRI Time 2	CST Time 1	CST Time 2	F-value	p-value
UPSA	74.00 (12.25)	77.27 (12.59)	73.67 (16.15)	81.58 (12.21)	0.69	0.41
MCCB Overall	37.00 (16.34)	39.73 (17.62)	34.00 (15.27)	34.33 (16.27)	0.03	0.87
Picture N-back % Correct	.88 (.06)	.89 (.09)	.87 (.10)	.87 (.09)	0.04	0.85

Note: Pre- and post-treatment behavioral data for the UPSA, MCCB, and % Correct during Picture N-back.

Table DS3 Results of a whole brain group by time interaction effect in the picture N-back during 2Bv0B

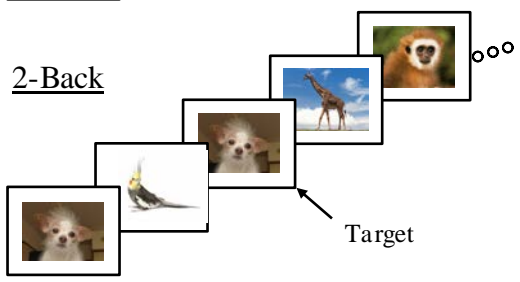
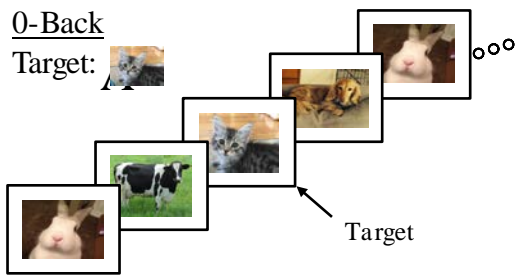
	Voxels	Z-max	X	Y	Z
Left Inferior Frontal Gyrus	52	3.59	-52	38	2
Right Middle Temporal Gyrus	30	3.12	30	-62	16
Left Middle Frontal Gyrus	28	3.71	-52	8	44
Left Cuneus	9	2.84	-28	-102	8
Right Superior Temporal Gyrus	4	2.67	34	0	-28
Right Precentral Gyrus	3	2.88	14	-22	80
Left Middle Frontal Gyrus	1	2.69	-46	10	52
Left Frontal Pole	1	2.65	30	46	42
Right Orbitofrontal Cortex	1	2.6	24	32	-14

Note: CRI>CST when measuring from pre- to post-intervention at $p<0.005$ (uncorrected).

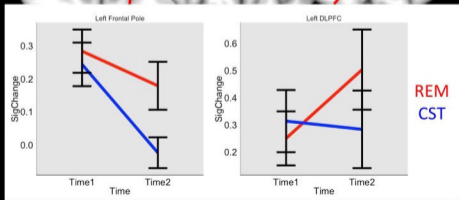
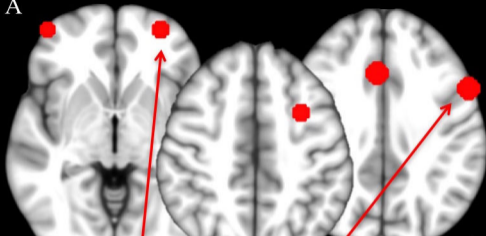
Fig. DS1 Picture N-Back task design.

Fig. DS2 (A) The five confirmatory ROIs included the ACC (N Voxels=147, MNI=6,20,36), LDLPFC (N Voxels=147, MNI=-54,10,36), LPFC (N Voxels=81, MNI=-28,8,46), Right Frontal Pole (N Voxels=81, MNI=46,56,0), and Left Frontal Pole (N Voxels=81, MNI=-28,56,-6). The left frontal pole showed a group-by-time interaction wherein activation decreased in the CST group but not CRI group. (B) Performance for the word N-back task showed a main effect of time across groups.

Fig. DS3 Map-wise whole brain group by time interaction results from the picture N-back task during 2Bv0B; CRI>CST group when measuring from pre- to post-intervention at $p<.005$ (uncorrected). These findings highlight changes in left inferior frontal gyrus, left middle frontal gyrus, and right middle temporal gyrus.



A



B

