

Visual-search-task-difficulty affects brain activity in following rest period

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Supplemental Table S1. Comparison of BOLD signal in *Non-Task* vs *Diff-Task* or *Easy-Task*

	#cluster	Regions	x	y	z	peak z state	cluster size	p
(Non-Task) - (Diff-Task)	1	R-superior frontal gyrus R-anterior cingulate gyrus R-middle frontal gysur	18	38	24	5.10	2455	<<0.001
		R-superior frontal gyrus R-frontal pole R-middle frontal gyrus	16	56	8	5.06		
		R-inferior frontal gyrus R-frontal operculum R-middle frontal gyrus	48	30	8	4.76		
	2	L-superior frontal gyrus L-anterior cingulate gyrus	-14	52	16	4.28	429	0.006
		L-superior frontal gyrus L-frontal pole R-superior frontal gyrus	-8	60	18	4.01		
		L-inferior frontal gyrus L-anterior orbital gyrus	-24	38	0	3.91		
(Diff-Task) - (Non-Task)	1	L-lingual gyrus L-occipital fusiform gyrus L-calcarine cortex	-14	-82	-8	6.55	15622	<<0.001
		L-calcarine cortex L-lingual gyrus L-cuneus L-occipital pole	-8	-88	0	5.94		
		R-calcarine cortex R-lingual gyrus L-lingual gyrus R-cuneus L-calcarine cortex L-cuneus R-occipital pole	8	-88	-2	5.76		
(Easy-Task) - (Non-Task)	1	L-calcarine cortex L-lingual gyrus L-cuneus L-occipital pole R-lingual gyrus	-6	-90	-2	5.29	4750	<<0.001
		R-calcarine cortex R-lingual gyrus R-occipital pole L-calcarine cortex L-lingual gyrus L-cuneus R-cuneus	6	-92	-2	4.98		
		R-lingual gyrus R-occipital fusiform gyrus R-fusiform gyrus	20	-66	-6	4.98		

Supplemental Table S2. Comparison of BOLD signal in *Easy-Task* vs *Diff-Task*

	#cluster	Regions	x	y	z	peak z state	cluster size	p
(Easy-Task) - (Diff-Task)								
	1	R-middle frontal gyrus						
		R-superior frontal gyrus	24	48	0	5.32		
		R-anterior orbital gyrus						
		R-inferior frotnal gyrus						
		R-middle frontal gyrus	44	34	8	5.30	2917	<<0.001
		R-frontal operculum						
		R-inferior frotnal gyrus						
		R-middle frontal gyrus	44	38	0	4.60		
	R-frontal operculum							
	2	R-anterior cingulate gyrus						
		L-anterior cingulate gyrus						
		R-middle cingulate gyrus	2	32	18	3.91		
		R-superior frontal gyrus						
		L-middle cingulate gyrus						
		L-middle cingulate gyrus						
		R-middle cingulate gyrus						
		L-anterior cingulate gyrus	-4	18	28	3.60	259	0.034
		L-supplementary motor cortex						
		R-anterior cingulate gyrus						
		L-superior frontal gyrus						
		R-anterior cingulate gyrus						
	L-anterior cingulate gyrus	4	22	14	3.53			
	R-middle cingulate gyrus							
	L-middle cingulate gyrus							
	3	L-superior frontal gyrus						
		L-middle frontal gyrus						
		L-anterior cingulate gyrus	-18	50	-2	3.79		
		L-anterior orbital gyrus						
		L-medial frontal cortex						
		L-anterior orbital cortex						
		L-posterior orbital cortex						
		L-inferior frontal gyrus	-24	36	-4	3.68	322	0.015
		L-medial orbital cortex						
		L-lateral obital cortex						
		L-anterior insula						
		L-superior frontal gyrus						
	L-middle frontal gyrus	-18	52	6	3.63			
	L-anterior cingulate gyrus							
(Diff-Task) - (Easy-Task)								
	1	R-occipital fusiform gyrus	24	-74	-10	4.44		
		R-lingual gyrus						
		R-precuneus						
		R-cuneus						
		R-superior parietal lobule	24	-62	26	4.24	1030	<<0.001
		R-superior occipital gyrus						
		R-angular gyrus						
		R-middle occipital gyrus						
		R-lingual gyrus						
	R-occipital fusiform gyrus	18	-78	-6	4.19			
	R-calcarine cortex							
	2	L-lingual gyrus	-16	-80	-10	4.21		
		L-occipital fusiform gyrus						
		L-calcarine cortex	-14	-88	0	3.76	488	0.002
		L-lingual gyrus						
		L-calcarine cortex	-10	-80	0	3.74		
	L-lingual gyrus							

Supplemental Table S3. Comparison of BOLD signal in *Non-Blank* vs *Diff-Blank* or *Easy-Blank*

	#cluster	Regions	x	y	z	peak z state	cluster size	p
(Non-Blank) - (Diff- Blank)	1	R-inferior occipital gyrus	32	-86	2	inf	16334	<<0.001
		R-middle occipital gyrus						
		R-occipital pole						
		R-superior occipital gyrus						
		L-inferior occipital gyrus	-28	-88	2	7.78		
		L-middle occipital gyrus						
		L-superior occipital gyrus						
		L-occipital pole						
		L-lingual gyrus	-8	-84	-4	7.57		
		L-calcarine cortex						
R-lingual gyrus								
(Diff-Blank) - (Non-Blank)	1	R-angular gyrus	58	-60	20	4.90	638	0.004
		R-middle temporal gyrus						
		R-middle occipital gysus						
		R-inferior occipital gyrus						
		R-angular gyrus	56	-58	30	4.32		
		R-angular gyrus	48	-62	42	4.23		
(Non-Blank) - (Easy-Blank)	1	R-lingual gyrus	10	-86	-4	6.59	6437	<<0.001
		R-calcarine cortex						
		L-lingual gyrus						
		R-cuneus						
		L-calcarine cortex	-10	-86	-2	6.59		
		L-lingual gyrus						
		R-occipital fusiform gyrus						
		R-inferior occipital gyrus						
		R-lingual gyrus	28	-82	-4	6.51		

Supplemental Table S4. Comparison of BOLD signal in *Easy-Blank* vs *Diff-Blank*

	#cluster	Regions	x	y	z	peak z state	cluster size	p
(Easy-Blank) - (Diff-Blank)								
	1	L-inferior occipital gyrus						
		L-middle occipital gyrus	-26	-86	4	7.43		
		L-superior occipital gyrus						
		R-occipital fusiform gyrus						
		R-inferior occipital gyrus	26	-86	-6	7.43	17545	<<0.001
		R-lingual gyrus						
		L-lingual gyrus						
		L-calcarine cortex	-10	-84	-6	7.33		
		L-occipital fusiform gyrus						
	2	L-thalamus proper						
		L-hippocampus						
		L-parahippocampal gyrus	-20	-32	0	6.08	430	0.008
		L-posterior cingulate gyrus						
	3	R-thalamus proper						
		R-hippocampus						
		R-parahippocampal gyrus	20	-30	0	5.71	661	0.001
		R-posterior cingulate gyrus						
	4	R-precentral gyrus						
		R-middle frontal gyrus	28	-6	52	4.61		
		R-superior frontal gyrus					331	0.022
		R-middle frontal gyrus						
		R-superior frontal gyrus	30	6	60	3.66		
		R-precentral gyrus						
	5	L-precentral gyrus						
		L-middle frontal gyrus	-30	-4	62	4.59		
		L-superior frontal gyrus						
		L-precentral gyrus					503	0.004
		L-superior frontal gyrus	-24	-8	52	4.24		
		L-middle frontal gyrus						
	6	L-precentral gyrus	-52	4	42	4.23		
		L-middle frontal gyrus						
		R-posterior cingulate gyrus						
		L-posterior cingulate gyrus	8	-36	26	4.55		
		R-middle cingulate gyrus						
		L-posterior cingulate gyrus					375	0.014
	6	R-posterior cingulate gyrus	-4	-38	24	3.87		
		L-middle cingulate gyrus						
		R-posterior cingulate gyrus	10	-42	14	3.29		
		R-precuneus						
	5	L-anterior cingulate gyrus	-4	14	-2	3.63	411	0.010
		R-anterior cingulate gyrus						

Supplemental Table S5. Beta values in *Task-phase* and *Blank-phase*

ROIs	[x,y,z]		beta-value						p-value
			Diff		Easy		Non		
Right occipital	[38,-76,-13]	Task	5.85±	3.65	2.80±	3.96	0.26±	2.87	<0.01
		Blank	1.25±	1.20	3.23±	1.26	4.22±	1.32	<0.01
Left occipital	[-36,-86,-6]	Task	3.62±	3.14	1.21±	5.78	-2.37±	4.63	<0.01
		Blank	-1.08±	2.14	1.48±	2.13	2.98±	2.42	<0.01
Right TPJ	[54,-47,35]	Task	0.68±	3.31	0.53±	3.86	-0.08±	3.23	1.00
		Blank	0.47±	1.02	0.14±	1.20	-0.14±	1.10	0.17
Right SMG	[51,-51,28]	Task	0.92±	3.18	1.35±	4.19	0.54±	2.75	1.00
		Blank	0.13±	0.94	-0.32±	1.03	-0.66±	1.02	0.02
Right SPG	[32,-65,57]	Task	6.08±	3.50	5.07±	9.36	-1.03±	6.00	<0.01
		Blank	3.39±	1.66	5.22±	2.01	5.43±	2.20	<0.01
Right SFG	[27,0,61]	Task	2.79±	3.40	3.08±	3.83	2.48±	3.58	1.00
		Blank	1.44±	0.92	2.05±	0.90	2.00±	0.90	0.11
Right MFG	[40,34,31]	Task	0.90±	3.00	3.00±	3.71	1.29±	3.77	0.71
		Blank	0.94±	0.86	1.03±	0.89	0.92±	0.89	1.00
Right IFG	[44,28,13]	Task	1.60±	1.95	3.66±	2.49	3.56±	1.89	<0.01
		Blank	0.45±	0.76	0.55±	0.67	0.55±	0.73	1.00
Right ACC	[3,17,42]	Task	3.28±	4.58	4.90±	5.45	1.51±	4.97	1.00
		Blank	1.77±	1.25	2.46±	0.85	2.22±	1.08	1.00

p-value is Bonferroni adjustment 18*p-value

Supplemental Table S6. PPI results that more highly correlated with the right OG in *Diff-Task* than in *Non-Task* or *Easy-Task*

#cluster	Regions	x	y	z	peak z state	cluster size	p
(Diff-Task) - (Non-Task)	R-calcarine cortex						
	R-lingual gyrus	20	-78	0	4.96		
	R-occipital fusiform gyrus						
	R-inferior occipital gyrus	42	-80	4	4.92		
	R-middle occipital gyrus						
	1 R-calcarine cortex					4328	<<0.001
	R-lingual gyrus						
	L-lingual gyrus	6	-82	2	4.79		
	R-cuneus						
	L-calcarine cortex						
	L-cuneus						
(Diff-Task) - (Easy-Task)	R-cuneus						
	L-cuneus						
	R-occipital pole	6	-92	18	4.06		
	R-calcarine cortex						
	L-occipitla pole						
	1 R-superior occipital gyrus					1509	<<0.001
	R-lingual gyrus	8	-80	-12	3.96		
	L-lingual gyrus						
	R-superior occipital gyrus						
	R-occipitla pole	20	-90	20	3.85		
	R-cuneus						

Supplemental Table S7. PPI results that more highly correlated with the right OG in *Non-Task* than in *Diff-Task*

	#cluster	Regions	x	y	z	peak z state	cluster size	p
(Non-Task) - (Diff-Task)								
1		L-precentral gyrus	-38	-20	62	5.33	2284	<<0.001
		L-postcentral gyrus						
		L-postcentral gyrus	-50	-28	54	4.93		
		L-supramarginal gyrus						
		L-superior parietal lobule						
		L-postcentral gyrus	-34	-32	68	4.62		
		L-precentral gyrus						
L-superior parietal lobule								
2		R-angular gyrus	60	-50	34	5.23	3739	<<0.001
		R-supramarginal gyrus						
		R-superior temporal gyrus	66	-32	4	5.18		
		R-middle temporal gyrus						
		R-angular gyrus	46	-62	44	5.10		
3		L-superior frontal gyrus	-20	22	38	4.64	1687	<<0.001
		L-middle frontal gyrus						
		L-superior frontal gyrus	-24	22	50	4.28		
		L-middle frontal gyrus						
		L-superior frontal gyrus	-14	52	28	4.00		
4		L-precuneus	-6	-64	36	4.59	1409	<<0.001
		R-precuneus						
		R-precuneus	10	-52	36	4.55		
		R-posterior cingulate gyrus						
		L-precuneus	-4	-62	18	3.65		
		L-cuneus						
		R-precuneus						
		L-calcarine cortex						
		R-cuneus						
		L-posterior cingulate gyrus						
R-calcarine cortex								
R-lingual gyrus								
L-lingual gyrus								
5		L-supplementary motor cortex	-4	-10	48	4.24	513	0.009
		L-middle cingulate gyrus						
		R-supplementary motor cortex						
		R-middle cingulate gyrus	-4	-18	46	4.20		
		L-precentral gyrus						
		R-precentral gyrus						
		L-middle cingulate gyrus	-4	-18	46	4.20		
		L-precentral gyrus						
		L-supplementary motor cortex						
		R-middle cingulate gyrus	6	-12	62	3.12		
		R-precentral gyrus						
		L-supplementary motor cortex						
		L-precentral gyrus	20	60	0	4.23		
R-superior frontal gyrus								
R-frontal pole								
R-superior frontal gyrus	48	36	2	4.12				
R-middle frontal gyrus								
R-anterior orbital gyrus								
R-inferior frontal gyrus	56	32	6	4.10				
R-middle frontal gyrus								
R-frontal operculum								

	#cluster	Regions	x	y	z	peak z state	cluster size	p
(Non-Task) - (Diff-Task)	7	R-superior frontal gyrus	22	24	44	4.16	477	0.012
		R-middle frontal gyrus						
		R-superior frontal gyrus	16	26	56	3.73		
		R-supplementary motor cortex						
	8	R-superior frontal gyrus	10	22	62	3.67	622	0.004
		R-supplementary motor cortex						
		L-central operculum						
		L-posterior insula						
		L-transverse temporal gyrus	-36	-16	16	3.78		
		L-parietal operculum						
		L-anterior insula						
		L-central operculum						
		L-posterior insula	-36	-8	14	3.61		
		L-anterior insula						
		L-transverse temporal gyrus						
		L-posterior insula						
		L-parietal operculum	-36	-24	10	3.59		
		L-central operculum						
		L-planum polare						
		L-planum temporale						