

Supporting Information

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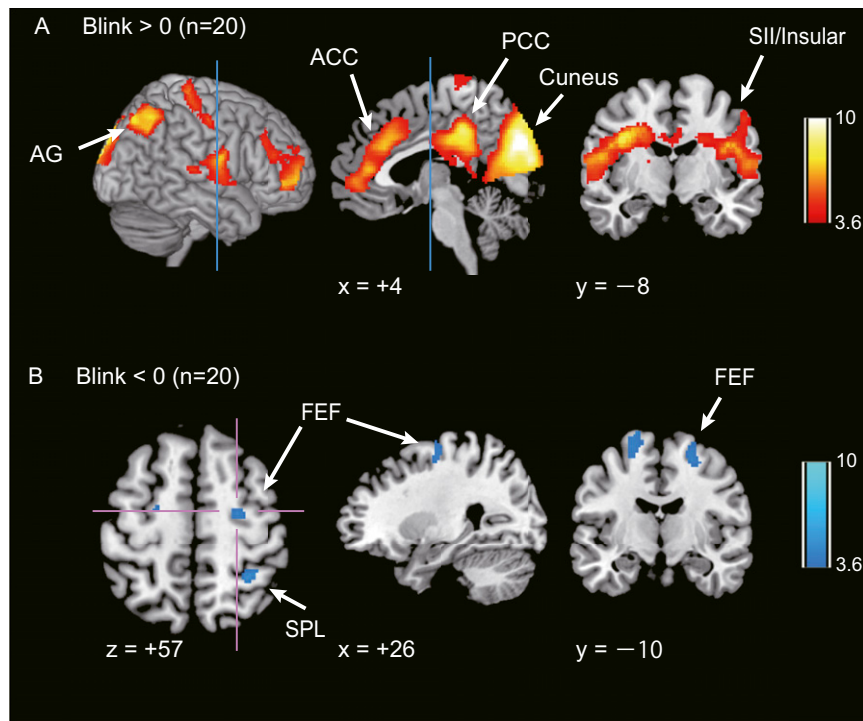


Fig. S1. Blink-related cortical activation (A) and deactivation (B) reexamined across all participants in experiments 1 and 3 ($n = 20$) with a more strict statistical threshold. The threshold of significance level was set to $P < 0.001$ (corrected at the cluster-level $P < 0.05$). Note the similarity of areas of activation and deactivation in this figure and those in Fig. 1 and Fig. S2.

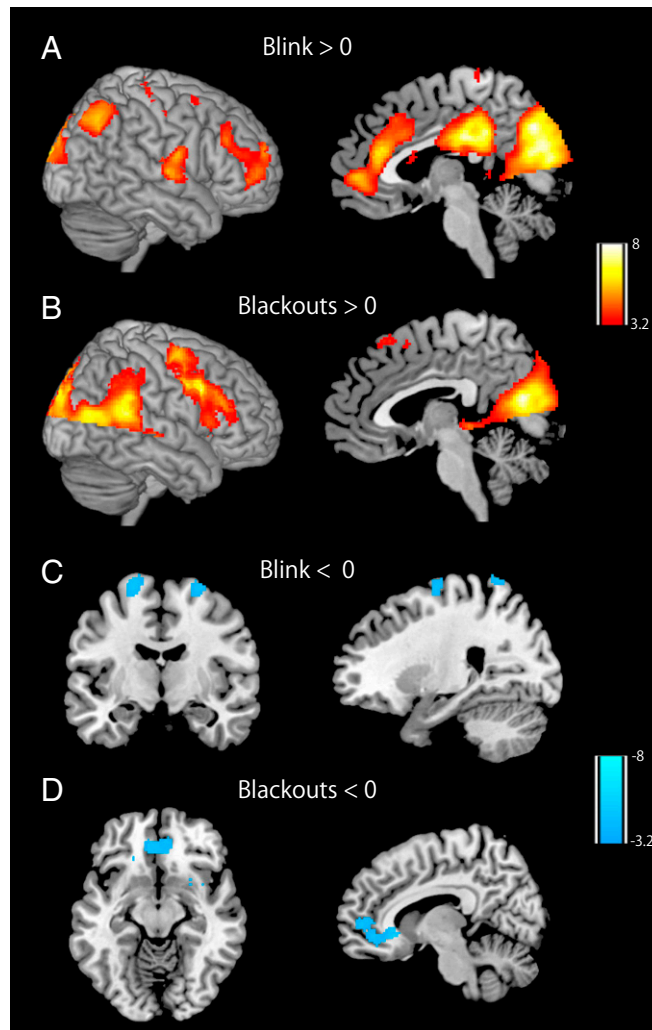


Fig. S2. Comparison of cortical activation by blink and by blackout. These regions exhibited significant event-related cortical activation by spontaneous eyeblinks (A) and blackouts (B) and cortical deactivation by spontaneous eyeblinks (C) and blackouts (D). The threshold of significance level was set to $P < 0.005$ and the number of voxels (k) = 10.

Table S1. Brain regions showing significant cortical activation and deactivation related to spontaneous eyeblinks

Anatomical region	Laterality	Talairach coordinates			t value	Z value
		x	y	z		
Blink > 0						
Cuneus	L/R	-2	-88	17	12.8	5.1
Precuneus	L/R	-10	-69	24	10.4	4.7
Posterior cingulate cortex	L	-8	-29	32	8.1	4.3
	R	8	-31	30	6.5	3.9
Middle frontal gyrus	R	28	53	3	7.3	4.1
Anterior cingulate cortex	L/R	-4	43	5	6.0	3.7
Angular gyrus	L	-48	-60	36	5.4	3.5
	R	50	-62	44	5.7	3.6
Insular	L	-38	-13	21	7.7	4.2
	R	36	-15	14	6.0	3.7
Rolandic operculum	R	44	-20	21	6.7	3.9
Postcentral gyrus	L	-38	-19	40	6.1	3.8
Precentral gyrus	R	50	-11	43	6.2	3.8
Blink < 0						
Superior parietal gyrus	R	32	-48	56	-7.5	-4.1
	L	-28	-52	58	-5.8	-3.7
Superior frontal gyrus	R	10	34	62	-6.8	-4.0
	L	-2	54	32	-4.9	-3.3
Frontal eye field	R	22	-12	60	-4.5	-3.2
	L	-20	-10	66	-3.7	-2.8
Inferior frontal gyrus	R	50	30	2	-4.6	-3.2
Superior temporal gyrus	L	-66	-52	16	-4.2	-3.0
Precentral gyrus	R	54	4	36	-4.2	-3.1
Postcentral gyrus	L	-58	-20	32	-3.8	-2.9

Table S2. Brain regions showing significant cortical activation related to spontaneous eyeblinks with inclusive masking of resting state activation ($P < 0.05$)

Anatomical region	Laterality	Talairach coordinates			t value	Z value
		x	Y	z		
Rolandic operculum	L	-46	-16	21	9.4	4.5
	R	44	-20	21	6.7	3.9
Insular	L	-38	-13	21	7.6	4.2
	R	36	8	12	6.0	3.7
Postcentral gyrus	L	-38	-19	40	6.1	3.8
	L	-22	-28	66	4.1	3.0
	R	44	-22	58	4.2	3.1
Anterior cingulate gyrus	L/R	-4	43	5	6.0	3.7
Angular gyrus	L	-44	-66	44	5.1	3.4
	R	50	-62	44	5.7	3.6
Precuneus	L	-4	-64	33	5.3	3.5
Middle frontal gyrus	R	38	44	-6	5.0	3.4

Table S3. Comparison of brain activations related to spontaneous eyeblinks and blackouts

Anatomical region	Laterality	Talairach coordinates			t value	Z value
		x	y	z		
Blink > blackout						
Anterior cingulate cortex	R/L	-16	43	-2	7.9	5.1
Angular gyrus	R	48	-68	46	5.2	4.0
	L	-36	-64	44	5.7	4.3
Rolandic operculum	L	-40	-13	19	6.9	4.8
Posterior cingulate cortex	R/L	4	-37	33	5.9	4.3
Precuneus	R/L	6	-66	36	4.5	3.6
Putamen	R	-24	11	-7	5.1	4.0
Superior frontal gyrus	R	28	44	35	3.5	3.1
	L	-14	52	25	4.5	3.7
Inferior frontal gyrus	L	-30	30	-13	4.2	3.5
Middle frontal gyrus	L	-40	47	7	3.5	3.0
Blackout > blink						
Precentral gyrus	R	46	-2	37	8.6	5.4
	L	-46	1	29	5.8	4.3
Inferior frontal gyrus, triangular part	R	59	24	15	5.5	4.2
	L	-57	28	13	8.4	5.3
Supramarginal gyrus	R	57	-39	26	6.7	4.7
	L	61	-33	40	5.6	4.2
Superior temporal gyrus	R	67	-42	17	6.1	4.5
	L	-57	-44	21	6.5	4.6
Middle temporal gyrus	R	51	-40	8	6.6	4.7
	L	-50	-56	12	6.5	4.6
Superior colliculus	R	8	-25	0	5.5	4.2
	L	-6	-25	0	4.9	3.8
Superior frontal gyrus	R	8	26	56	4.5	3.6
	L	-20	1	66	3.6	3.1
Conjunction of blink and blackout						
Precuneus	R	18	-41	4	8.6	5.4
	L	-18	-46	4	6.8	4.7
Cuneus	R	12	-67	24	7.8	5.1
	L	-8	-73	22	6.5	4.6
Anterior insular	R	30	29	6	5.6	4.2
	L	-28	27	0	5.3	4.0