

Supplementary Table 1. Regions activated during reward anticipation (anticipation win > anticipation no win) in both smokers and controls (conjunction analysis) at $p < 0.001$ uncorrected with at least 10 contiguous voxels.

Area	No. Of Voxels	Coordinates	z-Value
R Visual cortex	971	3 -90 -3	4.55
		15 -97 -3	4.54
		9 -84 -1	4.51
L Visual cortex	1481	-28 -91 -6	4.52
		-20 -87 -11	4.50
		-16 -96 -6	4.46
L Midbrain	117	-6 -22 -5	4.08
		-14 -19 -8	3.47
L/R Medial Frontal Gyrus	292	8 6 55	3.96
		8 -4 60	3.81
		-3 -3 -55	3.74
R Cingulate gyrus	41	15 -19 36	3.95
L/R Cingulate gyrus	116	-3 -27 24	3.87
		-6 -34 22	3.18
L Ventral striatum	54	-8 6 -1	3.81
R Cerebellum	100	18 -88 -18	3.74
		32 -84 -21	3.33
R Precentral gyrus	47	33 -19 46	3.68
L Superior parietal cortex	27	-28 -48 36	3.60
R Cerebellum	45	16 -63 -50	3.57
L Middle frontal gyrus	46	-24 -9 61	3.56
R Ventral Striatum	42	18 17 -8	3.56
L Cingulate	31	-14 -27 36	3.49
R Mid Cingulate	11	10 5 37	3.47
R Cerebellum	20	10 -79 -15	3.43

R Precentral Gyrus	13	35 -1 48	3.38
L Mid Cingulate	10	-6 -1 39	3.36
L Precentral Gyrus	12	-34 -21 51	3.26

Supplementary Table 2. Regions showing increased reward anticipation-related activity in the controls compared to the smokers (two sample t-test) at $p < 0.001$ uncorrected with at least 10 contiguous voxels.

Area	No. of Voxels	Coordinates	z-Value
R Superior Temporal Gyrus	657	57 9 -2	5.10
		59 -1 7	4.38
		59 17 12	3.97
L Cerebellum	396	-10 -57 -50	4.80
L Cingulate Gyrus	1253	-9 6 33	4.70
		-18 29 15	4.37
		-18 3 30	4.26
L Superior Temporal Gyrus / Temporal Pole	115	-45 20 -27	4.66
		-38 15 -27	3.41
L Superior Temporal Gyrus / Temporal Pole	375	-56 11 -5	4.57
		-50 8 -11	4.17
		-60 5 -1	3.73
L Cerebellum	573	-50 -54 -32	4.42
		-42 -69 -26	4.40
		-48 -63 -30	3.77
L Ventral Striatum	670	-9 3 1	4.40
		-20 11 -6	4.09
		-28 35 -2	3.97
R Middle Frontal Gyrus	116	32 45 7	4.34

L Precuneus	203	-9 -63 61	4.33
R Caudate/Ventral Striatum	669	21 12 21	4.24
		10 -3 9	4.06
		8 17 -3	3.72
R Cingulate/Insula	775	6 29 22	4.21
		30 23 10	4.20
		29 32 -2	4.04
L Middle Temporal Gyrus	87	-52 5 -23	4.18
R Cingulate Gyrus	77	6 14 27	4.17
		10 20 31	3.59
R Cerebellum	109	4 -55 -30	4.11
		2 -64 -33	3.21
L Cerebellum	104	-18 -55 -27	4.01
		-12 -52 -33	3.32
R Caudate/Putamen	138	18 15 3	3.98
		26 14 -5	3.25
R Superior Frontal Gyrus	160	16 48 21	3.95
R Rolandic Operculum	21	57 -21 15	3.95
R Fusiform Gyrus	71	40 -43 -23	3.92
R Fusiform Gyrus	16	36 -9 -32	3.86
L Cerebellum	49	-27 -49 -30	3.86
Midbrain	156	2 -36 -36	3.81
		0 28 -30	3.70
R Caudate	79	20 -16 21	3.76
		26 -21 15	3.21
R Inferior Occipital Gyrus	164	36 -79 -12	3.75
		46 -67 -14	3.25
R Cerebellum	28	27 -60 -65	3.75
R Thalamus	39	2 -12 16	3.73
L Orbitofrontal Cortex	36	-32 23 -14	3.71
L Midbrain	41	-12 -7 -8	3.71

		-10 - 9 1	3.48
L Superior Frontal Gyrus	39	-6 -7 67	3.68
R Caudate/Putamen	50	20 14 12	3.68
R Middle Frontal Gyrus	21	30 21 28	3.67
L Superior Temporal Gyrus	35	-51 -21 6	3.66
R Cerebellum	60	22 -67 -53	3.63
L Superior Temporal Gyrus	57	-48 -9 -11	3.62
R Superior Temporal Gyrus	27	52 -22 -5	3.60
L Orbitofrontal Cortex	35	-24 23 -21	3.60
R Cerebellum	45	28 -60 -21	3.58
L Claustrum	36	-32 -4 -11	3.58
		-34 -12 -9	3.33
R Middle Temporal Gyrus	27	51 -55 -2	3.54
R Middle Frontal Gyrus	18	32 38 27	3.54
L Fusiform Gyrus	10	-33 -61 -14	3.50
R Insula	17	48 -30 18	3.49
R Superior Frontal Gyrus	26	21 -3 75	3.48
L Inferior Frontal Gyrus	20	-54 12 16	3.47
L Superior Temporal Gyrus	28	-62 -19 6	3.46
R Insula	16	39 -7 15	3.45
L Inferior Parietal Lobule	13	-48 -28 27	3.44
L Caudate	37	-16 -10 19	3.44
L Cerebellum	14	-16 -76 -32	3.44
R Middle Occipital Gyrus	33	34 -79 9	3.42
L Middle Occipital Gyrus	16	-30 -87 12	3.38
R Putamen	14	21 -6 7	3.36
L Caudate	32	-15 -3 18	3.34
L Postcentral Gyrus	16	-60 -21 19	3.33
Brainstem	14	-2 -40 -50	3.32
L Ventral Striatum	26	-16 8 -12	3.30
L Medial Frontal Gyrus	16	-6 8 51	3.30

R Anterior Cingulate	11	8 32 6	3.29
L Superior Frontal Gyrus	12	-21 -7 69	3.29
L Cerebellum	14	-6 -76 -33	3.28
L Brainstem	16	-12 -27 -38	3.26
R Putamen	11	29 -7 9	3.26
R Inferior Occipital Gyrus	25	32 -97 -3	3.25
R Precuneus	10	9 -48 61	3.22

Supplementary Table 3. Regions in which reward anticipation related activity in the smokers is correlated with smoking frequency ($p < 0.001$, at least 10 contiguous voxels).

Area	No. of Voxels	Coordinates	z-Value
<i>Negative correlation</i>			
L Cingulate Gyrus	186	-3 -25 37	4.47
L Inferior Frontal Gyrus	161	-46 27 3	4.44
L Anterior Cingulate	138	-9 8 25	4.38
L/R Precuneus / Posterior Cingulate	658	-12 -54 28	4.28
		0 -45 45	3.59
		2 -66 34	3.57
L Middle Temporal Gyrus	167	-60 -10 -14	4.26
		-54 -6 -20	3.34
L Inferior Frontal Gyrus	92	-48 8 -6	4.24
		-50 15 21	4.20
		-51 14 7	3.80
L Middle Temporal Gyrus	160	-60 5 -15	4.20
R Anterior Cingulate / Superior Frontal Gyrus	580	2 44 15	4.18
		8 48 18	4.15

		14 50 27	3.64
R Cerebellum	81	8 -54 -11	4.17
L Parahippocampal Gyrus / Hippocampus	511	-18 -37 -12	4.14
		-15 -27 -9	3.89
		-28 -22 -12	3.60
R Parahippocampal Gyrus	87	15 -34 -12	4.12
R Middle Temporal Gyrus	75	53 4 -30	4.11
R Cerebellum	60	36 -54 -45	4.01
R Parahippocampal Gyrus / Hippocampus	83	21 -25 -6	3.94
		30 -31 -5	3.21
R Amygdala / Lateral Orbitofrontal Cortex	134	27 2 -14	3.89
		30 14 -12	3.80
L Amygdala	107	-21 -3 -24	3.89
L Superior Frontal Gyrus	145	-14 59 19	3.84
		-18 56 12	3.48
		-4 59 22	3.36
R Superior Frontal Gyrus	45	22 33 37	3.84
L Superior Frontal Gyrus	44	-20 44 37	3.81
R Precuneus	85	10 -51 28	3.81
		6 -57 19	3.27
R Medial Frontal Gyrus	16	12 -9 66	3.79
L Cerebellum	192	-22 -85 -44	3.79
		-34 -88 -32	3.49
R Precuneus	34	6 -39 63	3.74
R Precentral Gyrus	21	64 2 28	3.74
L Superior Temporal Gyrus	30	-62 -52 19	3.72
L Insula	37	-39 -12 -5	3.70
L Parahippocampal Gyrus	43	-12 2 -18	3.69

L Lingual Gyrus	81	-28 -85 -3	3.65
L Precuneus	39	-8 -72 39	3.65
L Inferior Parietal Lobule	107	-45 -61 43	3.62
		-44 -57 34	3.43
L Supramarginal Gyrus	23	-62 -45 28	3.62
L Midbrain	13	-2 -21 -15	3.62
L Inferior Temporal Gyrus	39	-52 -3 -32	3.61
L Cingulate	10	-6 -12 31	3.59
R Superior Temporal Gyrus	23	45 9 -29	3.59
R Superior Temporal Gyrus	20	46 -21 -8	3.59
R Cerebellum	68	12 -82 -41	3.58
		4 -82 -38	3.53
L Cuneus	66	-12 -87 -6	3.55
L Temporal pole	35	-52 12 -35	3.54
		-50 6 -30	3.23
R Medial Frontal Gyrus	11	4 39 48	3.52
R Cerebellum	108	20 -73 -26	3.51
		12 -67 -23	3.38
L Cingulate Gyrus	14	-12 12 36	3.49
R Inferior Temporal Gyrus	17	51 -63 -6	3.48
L Hippocampus	28	-34 -12 -18	3.47
L Anterior Cingulate	17	-10 44 1	3.47
L Cerebellum	27	-15 -79 -18	3.46
L Inferior Frontal Gyrus	31	-34 26 1	3.44
L Middle Temporal Gyrus	17	-57 -34 -14	3.44
R Anterior Cingulate	20	14 35 31	3.44
L Cingulate	12	-8 -6 39	3.43
R Angular Gyrus	24	45 -64 34	3.40
L Cingulate	21	-8 30 28	3.40
L Inferior Frontal Gyrus	16	-42 38 9	3.40
R Precuneus	40	12 -63 19	3.39

L Cerebellum	48	-42 -69 -51	3.38
R Inferior Frontal Gyrus	10	51 39 4	3.37
R Lingual Gyrus	17	21 -67 -11	3.36
L Cerebellum	57	-18 -70 -26	3.36
		-10 -70 -23	3.35
L Medial Orbital Gyrus	19	-4 59 -20	3.33
R Temporal Pole	14	27 3 -36	3.32
L Inferior Occipital Gyrus	13	-28 -93 -18	3.32
R Middle / Inferior Frontal Gyrus	11	48 21 13	3.32
L Parahippocampal Gyrus	27	-14 -42 -2	3.31
R Parahippocampal Gyrus	11	21 -10 -30	3.30
R Cerebellum	10	8 -85 -29	3.29
L Inferior Temporal Gyrus	17	-62 -60 -9	3.29
L Superior Frontal Gyrus	24	-3 51 34	3.29
R Postcentral Gyrus	28	51 -27 43	3.29
		57 -21 39	3.28
L Cerebellum	18	-27 -73 -41	3.28
R Anterior Cingulate	12	9 38 6	3.26
R Cingulate	33	6 21 22	3.24
		6 14 18	3.19
R Parahippocampal Gyrus	14	9 -36 6	3.21

Positive correlation

No voxels survive threshold