Supplementary Online Content

Kohno M, Morales AM, Ghahremani DG, Hellemann G, London ED. Risky decision making, prefrontal cortex, and mesocorticolimbic functional connectivity in methamphetamine dependence. Published online May 21, 2014. *JAMA Psychiatry*. doi:10.1001/jamapsychiatry.2014.399.

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Brain Regions That Exhibited Greater RSFC With the Midbrain in the Methamphetamine Than Control Group

Brain region	Cluster size (voxels)	x[a]	y	z	Z statistic
Methamphetamine Group > Control group					
Cluster #1[b]	2698				
Precentral gyrus (L/R)[c]		-6	-34	60	4.28
Superior frontal gyrus (L)		-22	10	52	4.23
Cluster #2	1776				
Inferior frontal gyrus (L)		-50	10	8	4.07
Superior temporal gyrus (L)		-62	-14	2	3.92
Middle temporal gyrus (L)		-56	-26	-8	3.79
Insula cortex (L)		-34	22	-2	2.32
Cluster #3	698				
Putamen (R)		32	-2	4	4.88
Parietal operculum		46	-20	18	4.75
Insula (R)		36	-2	8	2.52
Cluster #4	165				
Amygdala (L/R)		16	-2	-20	3.56
Hippocampus (L/R)		-18	-12	-18	2.39
Parahippocampal gyrus		20	4	-26	2.37
Cluster #5	122				
Insula (posterior) (L)		-36	-18	-4	3.62
Putamen (L)		-32	-16	-4	2.51

Z-statistic maps were thresholded using cluster-corrected statistics with a height-threshold of $Z > 2.3$ and cluster-forming threshold of $p < 0.05$.

[a] x, y, z reflect coordinates for peak voxel or for other local maxima in MNI space.

[b] Clusters are numbered and presented in order of decreasing size.

[c] L or R refers to left or right hemisphere.

eTable 2. In the Methamphetamine Group, Brain Regions That Showed Negative Correlations Between Midbrain RSFC and the Modulation of Activation by Pump Number in the Right DLPFC During Risky Decision Making[a]

Brain region	Cluster size (voxels)	Coordinates			
		x[b]	Y	z	Z statistic
MA-dependent group: Negative correlation					
Cluster #1[c]	1768				
Superior frontal gyrus (R)[d]		4	38	52	2.97
Cluster #2	1663				
Occipital cortex		-6	-90	10	2.34
Cluster #3	1001				
Anterior cingulate cortex		4	46	6	3.77
Frontal medial cortex		0	50	-2	2.32
Cluster #4	770				
Parahippocampal gyrus		-16	-34	-12	3.88
Amygdala (L/R)		16	-4	-18	3.29
Putamen (R)		26	6	2	3.07
Nucleus Accumbens (L/R)		-6	6	-10	3.03
Hippocampus		-18	-18	-16	3.01
Cluster #5	726				
Superior temporal gyrus (L)		-62	-22	4	3.01
Middle temporal gyrus (L)		-64	-22	-22	2.92

[a] Amplitude of BOLD responses associated with pumps were modeled as a function of parametrically varied levels of risk and reward (represented by pump number) (see Methods). Z-statistic maps were thresholded using cluster-corrected statistics with a height-threshold of $Z > 2.3$ and cluster-forming threshold of $p < 0.05$.

[b] x, y, z reflect coordinates for peak voxel or for other local maxima in MNI space.

[c] Clusters are numbered and presented in order of decreasing size.

[d] L or R refers to left or right hemisphere.

Table 3. Brain Regions in Which the Relationship Between RSFC of the Right DLPFC and Modulation of Activation in the Right DLPFC by Pump Number Varied by Group, With Positive Relationships in Controls[a,*]

Brain region	Cluster size (voxels)	Coordinates			
		x[b]	Y	z	Z statistic
Regions exhibiting an interaction by group					
Cluster #1[c]	2549				
Amygdala (R)[d]*		16	-8	-12	4.63
Hippocampus (L/R)		16	-8	-20	4.38
Thalamus (L/R)		-4	-8	10	4.01
Putamen (L/R)*		20	6	4	4.06
Caudate (L/R) *		-16	-8	20	4.00
Insula cortex (R) *		34	12	10	3.32
Subcallosal Cortex (R)		12	20	-14	2.75
Nucleus Accumbens (R) *		12	12	-12	2.40
Cluster #2	1548				
Cerebellum (L/R)		-32	-68	-28	4.38
Cluster #3	610				
Superior frontal gyrus (R)		20	66	00	3.92
Frontal medial cortex		10	-54	-10	3.54
Orbital frontal cortex (R) *		18	26	-14	3.33
Cluster #4	286				
Inferior frontal gyrus (L/R)		-46	6	2	3.91
Cluster #5	125				
Paracingulate gyrus		4	12	50	4.52

[a] Amplitude of BOLD responses associated with pumps were modeled as a function of parametrically varied levels of risk and reward (represented by pump number) (see Methods). Z-statistic maps were thresholded using cluster-corrected statistics with a height-threshold of $Z > 2.3$ and cluster-forming threshold of $p < 0.05$.

[b] x, y, z reflect coordinates for peak voxel or for other local maxima in MNI space.

[c] Clusters are numbered and presented in order of decreasing size.

[d] L or R refers to left or right hemisphere.

***** Connectivity of regions with DLPFC that reflect a positive correlation with the modulation of activation by pump number in DLPFC during decision-making in the healthy control group.