

## Supplementary Tables

Table S1. Analysis of covariance results comparing accuracy rates and reaction times made by youths with severe mood dysregulation and healthy comparison children

Variable	Effect	<i>F</i>	<i>df</i>	<i>p</i> <	post-hoc results*
Accuracy					
	Time	36.65	5,195	.001	non-frustration > frustration
	Validity	97.10	1,39	.001	valid > invalid
	Time x Validity	30.05	5,195	.001	
Response Time					
	Time	7.25	5,195	.005	Game 3, run 1 < all non-frustration blocks; Game 2, block 2 > Game 2, block 1 and Game 3 runs 1-3
	Validity	101.58	1,39	.001	valid < invalid
	Time x Validity	7.67	5,195	.001	
	Validity x Group	3.78	1,39	<.07	
	Time x Validity x Group	2.41	5,195	<.07	

*note:* Analyses were conducted after covarying participant sex.

\* indicates significant ( $p < .05$ ) differences between conditions

TABLE S2. Significant findings from the whole-brain fMRI analysis ( $p < .001$ ;  $k \geq 37$ )

Effect	Area of Activation	Side	Cluster Size†	Talairach Coordinates			BA
				x	y	z	
Group	anterior cingulate cortex	L	61	-19	35	14	32
Feedback	inferior frontal gyrus	L	14,072	-40	47	2	10
Condition	lingual gyrus	R/L	936	-1	-76	2	18
	inferior parietal lobule	L	338	-55	-55	38	40
	precentralgyrus	R	223	14	-28	62	4
	superior frontal gyrus	L	178	-25	38	32	9
	superior temporal gyrus	R	79	62	-46	20	22
	superior frontal gyrus	R	76	17	38	35	9
	middle occipital gyrus	L	54	-31	-85	11	19

*Note:* area of activation, x, y, and z coordinates and  $F$  and  $p$  statistics refer to the voxel with maximum signal intensity

Table S3. Significant Pearson correlations between affect ratings and behavioral performance during frustration and neural activation in response to negative feedback for youths with severe mood dysregulation and healthy comparison children

Variable	Severe Mood Dysregulation		Healthy Comparison Children					
	Self-Reported Frustration <sup>a</sup>		Self-Reported Frustration <sup>a</sup>		ARI-parent <sup>b</sup>		ARI-child <sup>c</sup>	
	r	p <	r	p <	r	p <	r	p <
accuracy valid trials	--	--	--	--	-.46	.05	--	--
left amygdala	--	--	-.49	.02	--	--	--	--
left supramarginal gyrus & <u>inferior parietal lobule</u>	-.49	.03	--	--	--	--	--	--
left insula	--	--	-.46	.03	--	--	--	--
right supramarginal gyrus	-.47	.05	--	--	--	--	--	--
left insula	--	--	-.43	.04	--	--	--	--
left parahippocampal gyrus	-.50	.03	-.51	.02	--	--	-.78	.001
left pre/postcentral gyrus	--	--	-.49	.02	--	--	--	--
right precuneus	--	--	-.42	.05	--	--	--	--
left cingulate/ thalamus/ caudate	--	--	-.46	.03	--	--	--	--

<sup>a</sup>average self reported frustration after each run of Game 3.

<sup>b</sup>Child's irritability over the prior 6 months as reported by parent (ARI-parent)

<sup>c</sup>Child's irritability over the prior 6 months as reported by child (ARI-child)