

Supplement 1

Outside of the medial frontal cortex (MFC), the whole brain search revealed significant group x age interactions of right medial thalamus connectivity to right hippocampus ($x = 39, y = -24, z = -6; Z = 4.55, k = 162, p_{FDR} = .05$), and to midcingulate extending into the precentral gyrus ($x = 15, y = -6, z = 36; Z = 4.98; k = 111, p_{FDR} = .02$). Planned contrasts revealed the interaction for right mdT-hippocampus to be driven by greater connectivity for child patients compared to child controls. The group x age interaction for mdT-midcingulate connectivity derived from a combination of reduced connectivity for patients compared to controls at the youngest developmental stage, and increased connectivity for patients compared to controls at young adulthood.

No other significant group or group x age interactions were observed in the whole brain search for any other seed.

Table S1. Whole brain analysis: effects of group and group x age interactions

Seed	Group Difference					Group x Age Interaction				
	Connected Region	Direction	x, y, z	Z	k ^b	Direction ^a	x, y, z	Z	k [*]	
R MT	Midcingulate					HC ₁ ⁺ > OCD ₁ ⁻ HC ₂ ⁰ = OCD ₂ ⁰ OCD ₃ ⁺ > HC ₃ ⁻ OCD ₄ ⁰ = HC ₄ ⁰	15, -6, 36	4.98	111	
R MT	R. hippocampus					OCD ₁ ⁺ > HC ₁ ⁺ OCD ₂ ⁺ = HC ₂ ⁺ HC ₃ ⁺ > OCD ₃ ⁺ HC ₄ ⁺ = OCD ₄ ⁺	39, -24, -6	4.55	162	

Note: MT = medial-dorsal thalamus

^a Planned contrasts of obsessive compulsive disorder (OCD) and healthy control (HC) subjects at each developmental stage (1 = Child, 2 = Adolescent, 3 = Young Adult, 4 = Older Adult; $p < .05$, corrected).

^b Cluster-level significant at $p_{FDR} < .05$, corrected for multiple comparisons across whole brain

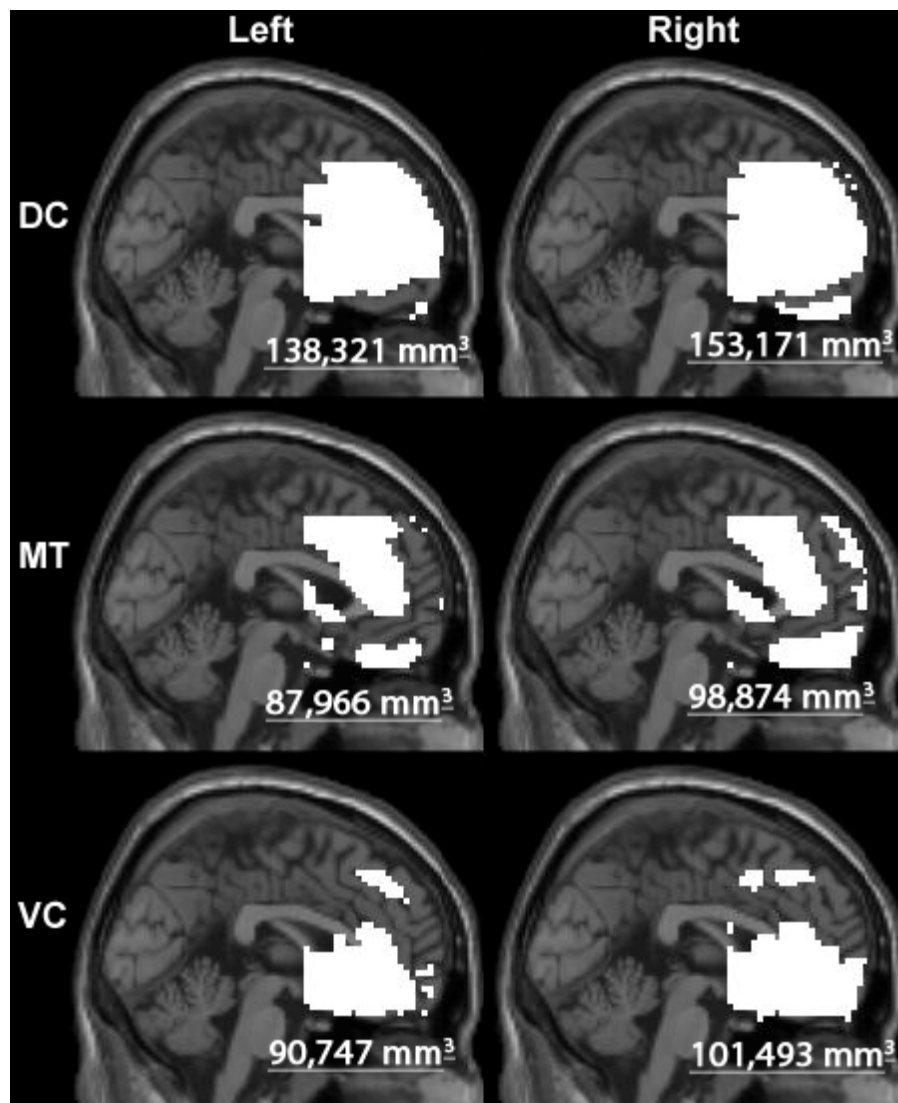


Figure S1. Seed-specific masks of medial frontal cortex. Note: The medial frontal cortex search volumes for the left and right dorsal caudate (DC), medial-dorsal thalamus (MT) and ventral caudate (VC). Volumes are noted in mm³.

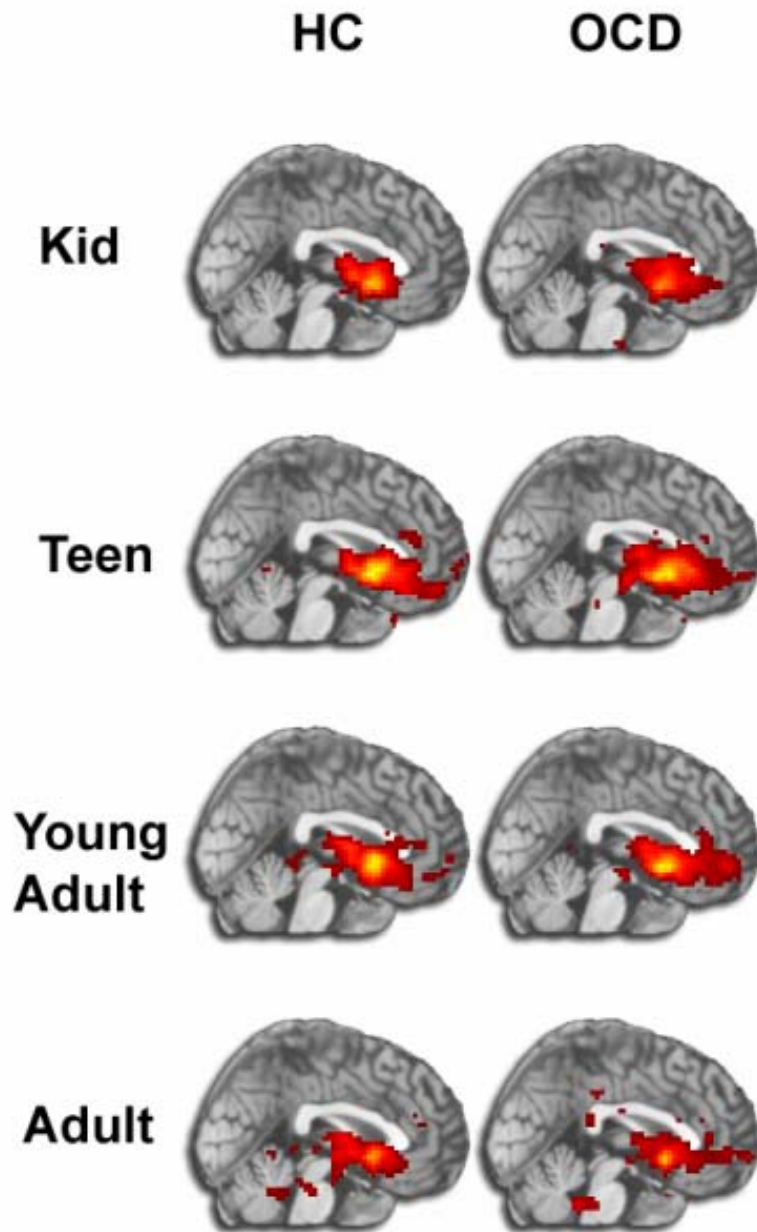


Figure S2. Left ventral striatum connectivity maps for healthy control (HC, column 2) and obsessive compulsive disorder (OCD, column 3) subjects across the stages of development. Note: Displayed in standard neuroanatomical space (Montreal Neurological Institute) at a threshold of $p < .005$, uncorrected. Right ventral striatum connectivity maps were qualitatively similar.

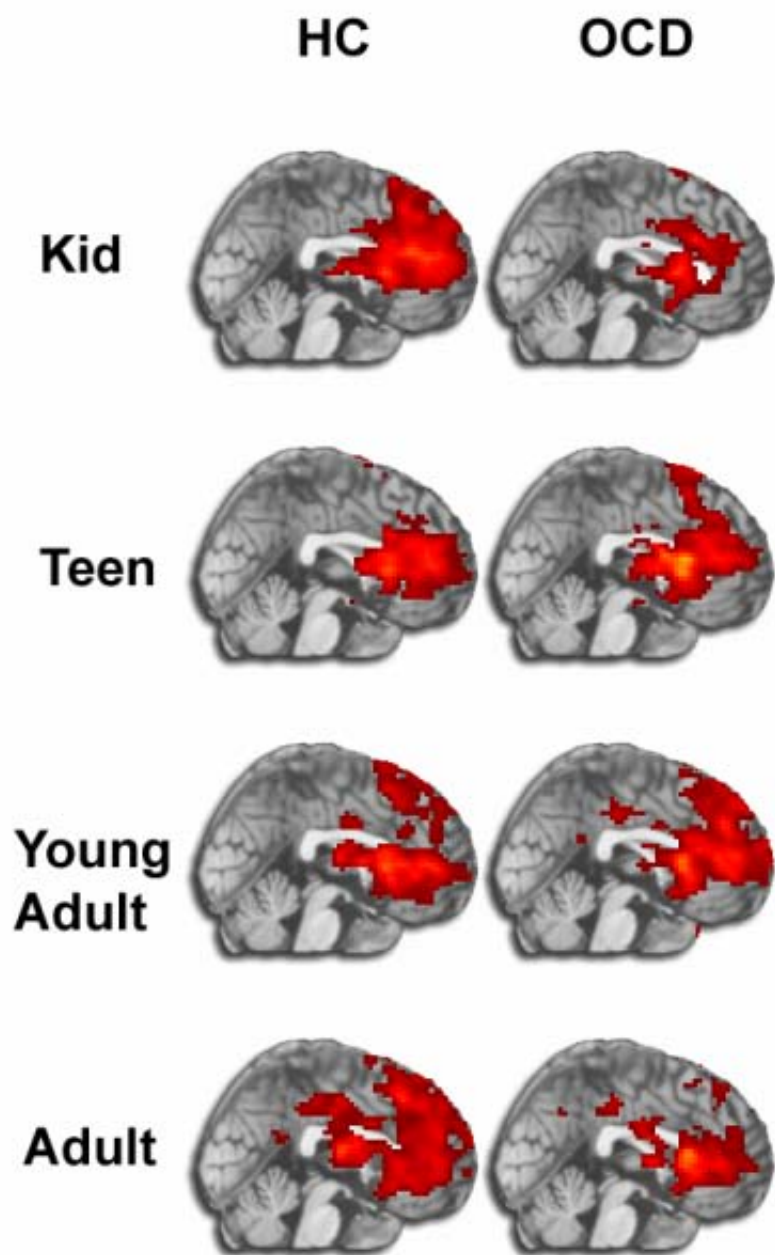


Figure S3. Left dorsal striatum connectivity maps for healthy control (HC, column 2) and obsessive compulsive disorder (OCD, column 3) subjects across the stages of development. Note: Displayed in standard neuroanatomical space (Montreal Neurological Institute) at a threshold of $p < .005$, uncorrected. Right dorsal striatum connectivity maps were qualitatively similar.

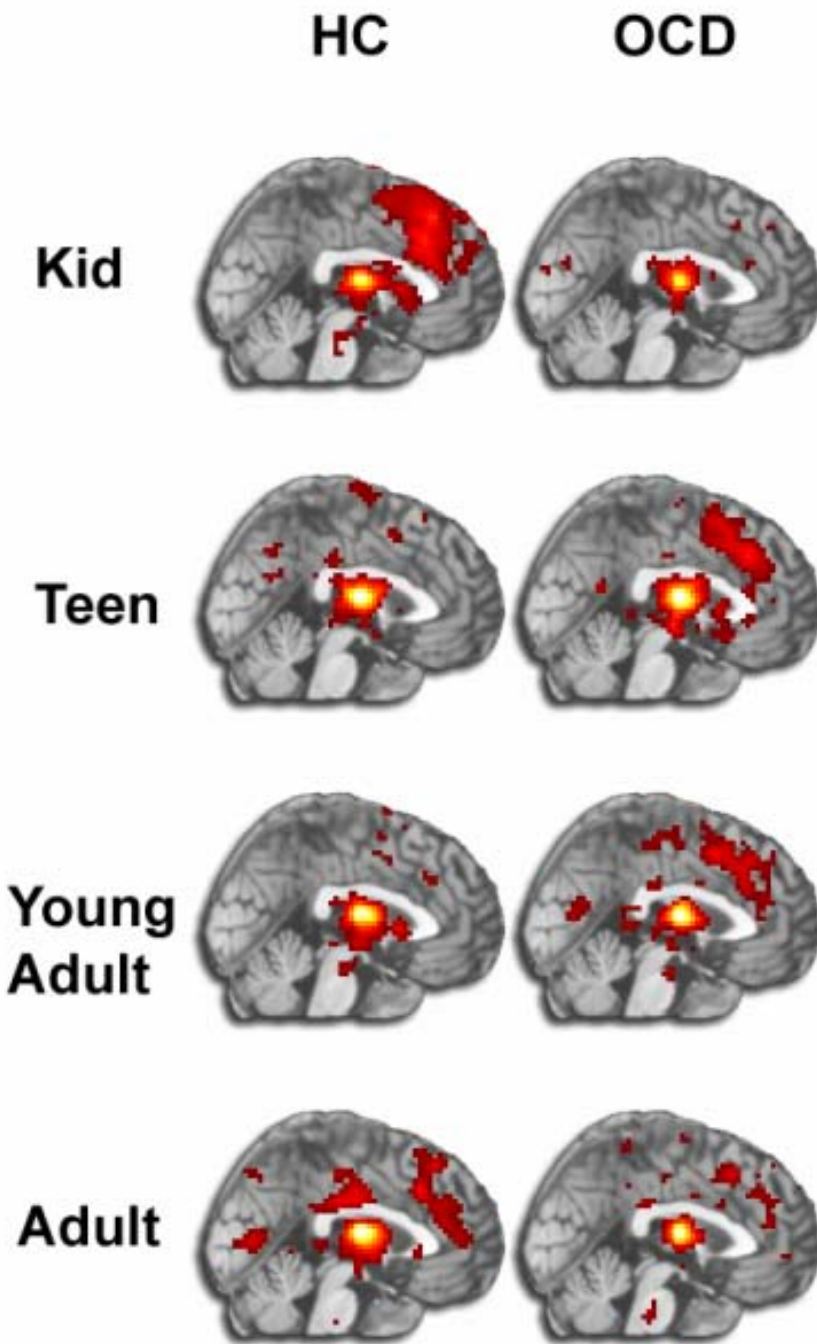


Figure S4. Left medial thalamus connectivity maps for healthy control (HC, column 2) and obsessive compulsive disorder (OCD, column 3) subjects across the stages of development. Note: Displayed in standard neuroanatomical space (Montreal Neurological Institute) at a threshold of $p < .005$, uncorrected. Right medial thalamus connectivity maps were qualitatively similar.