

## Supplemental Methods

### Striatal Regions

For manual regions of interest tracing of the striatum, we employed 3D-Slicer, an image-editing tool developed in the Surgical Planning Laboratory, Department of Radiology, BWH (<http://www.slicer.org>). We used a uniform protocol to identify striatal gray matter regions of interests in all subjects and to compensate for head tilt and rotation during acquisition of MRI scans by first realigning the structural scans by using the line that connected the anterior and posterior commissure (AC-PC line), and was drawn along the midsagittal plane, enabling us to resample all scans into 0.9375 mm isotropic voxels. [See Levitt et al. (26, 39), where the specifics of our manual delineation technique of the striatum is fully described.] We delineated the caudate and putamen nuclei bilaterally, with the use of 3 orthogonal planes, in all slices in which they were present. We drew an oblique line from a point, which was calculated, on the ventrolateral putamen to a point, which was calculated, on the ventromedial caudate which served as the superior boundary for the ventral striatum. The white matter external capsule, which separates the ventral striatum from basal forebrain, served as a ventromedial boundary of the striatum. The boundary between anterior and posterior dorsal caudate and dorsal putamen was demarcated by the vertical plane which passed through the anterior commissure. Per hemisphere, this approach yields 5 striatal anatomic subregions which can be grouped into 3 functional subregions defined by their cortical connections. Specifically, the limbic striatum (LST) is comprised of the ventral striatum, the associative striatum (AST) is comprised of pre and postcommissural caudate and precommissural putamen, and the sensorimotor striatum (SMST) is comprised of the postcommissural putamen.