



Area 9 – Dorsolateral prefrontal cortex

The model of the four streams of the [prefrontal cortex](#) proposes 4 streams of information: motor through Brodmann area (BA) 8, emotion through BA 9, memory through BA 10, and emotional-related sensory through BA 11. Although there is a surge of functional data supporting these 4 streams within the PFC, the structural connectivity underlying these neural networks has not been fully clarified. Here we perform population-based high-definition tractography using an averaged template generated from data of 1,065 human healthy subjects acquired from the Human Connectome Project to further elucidate the structural organization of these regions. We report the structural connectivity of BA 8 with BA 6, BA 9 with the insula, BA 10 with the hippocampus, BA 11 with the temporal pole, and BA 11 with the amygdala. The 4 streams of the prefrontal cortex are subserved by a structural neural network encompassing fibers of the anterior part of the superior longitudinal fasciculus-I and II, corona radiata, cingulum, frontal aslant tract, and uncinate fasciculus. The identified neural network of the four streams of the PFC will allow the comprehensive analysis of these networks in normal and pathological brain function.

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