Functional connectivity and grey matter volume of the striatum in schizophrenia.

Abstract:
Alterations in the dopaminergic reward system, predominantly the striatum, constitute core characteristics of schizophrenia. Functional connectivity of the dorsal striatum during reward-related trial-and-error learning was investigated in 17 people with schizophrenia and 18 healthy volunteers and related to striatal grey matter volume and psychopathology. We used voxel-based morphometry and psychophysiological interaction to examine striatal volume and connectivity. A reduced functional connectivity between left striatum and temporo-occipital areas, precuneus and insula could be detected in the schizophrenia group. The positive correlation between grey matter volume and functional connectivity of the left striatum yielded significant results in a very similar network. Connectivity of the left striatum was negatively correlated with negative symptoms. Present results suggest a disruption in striatal functional connectivity that is closely linked to grey matter morphometry of the striatum. Decreased connectivity between the striatum and psychopathologically relevant networks may explain the emergence of negative symptoms.