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DEFAULT MODE AND TEMPORAL LOBE NETWORKS ACTIVITY DURING A WORKING MEMORY PERFORMANCE IN SCHIZOPHRENIA

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Background: Temporal correlations in the blood oxygen level-dependent (BOLD) signal oscillations of widely separated brain regions are presumed to reflect intrinsic functional connectivity and have been demonstrated across several distinct networks serving different functions. Impaired connectivity or disturbed integration of neural activity, as seen in brain networks in schizophrenia, might influence the symptoms of the disorder and biologically implicates in temporal and spatial alterations in BOLD signal fluctuations.
The objective of this study is to examine the activity of a temporal lobe and default modes during working memory task in schizophrenic patients. These two networks were selected because both have been previously studied.

Methods: Patients with schizophrenia and healthy comparison subjects undergo functional magnetic resonance imaging (fMRI) scanning while performing a verbal working memory "n-back" task. All subjects receive identical training in task performance prior to scanning. Independent component analysis will be used to identify the default mode and temporal lobe component. Spatial and temporal aspects of the networks will be examined in patients versus healthy control subjects.

Results: Data collection and statistical evaluation will proceed until October 2008.

Conclusions: Identifying specific activation patterns for the temporal lobe and default mode components may contribute to the identification of a trait-related marker for schizophrenia and improve diagnostic sensitivity and specificity.