Research Objectives:
Schizophrenia is characterized by extensive cognitive dysfunction. The functional brain networks underlying the task-switching inertia (TSI) task are examined. Furthermore, the brain activity generated by this task is compared between schizophrenia patients (n=23) and healthy controls (n=27).

Methods:
During the TSI, participants were asked to name the font color of the text or read the word presented (i.e. blue, green, red, yellow) during neutral or incongruent task conditions. Functional brain networks were extracted using Constrained Principal Component Analysis for fMRI (fMRI-CPCA). Component loadings were classified by correlating positive and negative loadings in select brain slices with previously established prototype brain networks. Analysis of estimated hemodynamic response ( HDR ) was performed using mixed model analysis of variance ( ANOVA ).

Results:
Functional brain networks retrieved include the response network, focus on visual features network, default-mode network, cognitive evaluation network and primary auditory network. No significant differences were observed between healthy controls and schizophrenia patients in the focus on visual features, cognitive evaluation and primary auditory networks. However, significant differences were observed in the response and default-mode network. Specifically, patients did not exhibit suppression of the response network during the word-reading conditions as displayed by healthy controls. Additionally, patients displayed less suppression of the default-mode network than healthy controls across all task conditions.

Conclusions:
Results suggest that in healthy controls the greater suppression of both the response and default-mode network contribute to normal executive function. The lack of this in schizophrenia patients may contribute to some of the impairments in executive function in schizophrenia.