for rapid data collection, access to unique populations, and assessment of validity and generalizability of findings. Differences in imaging methods, analysis methods, and the methods for storing and retrieving data, all present challenges to sharing large imaging and clinical datasets. Previous multi-site imaging studies have not assessed intersite variability or reliability of the imaging data prior to data combination; or have avoided data combination in favor meta-analysis methods. *Methods.* The Function BIRN is a multi-site project funded by NCRR/NIH (www.nbirn.net) for the following goals: 1) Standardized calibration of equipment using geometric and human phantoms; 2) Developing a multi-site, standardized protocol for fMRI data collection on populations of persons with schizophrenia, including site-specific cognitive paradigms; 3) Creating a federated database to integrate multi-site data, for a deeper understanding of the functional neuroanatomy of schizophrenia than would be possible through meta-analysis. The eleven sites involved in the project are dedicated to collecting calibration fMRI data, developing experimental paradigms and analysis methods, populating a virtual data grid, and designing a searchable multi-site database of MRI and clinical data. *Results.* Using a set of geometric phantoms to measure spatial distortions and temporal drift across sites, the FBIRN has collected a unique dataset of machine characteristics in fMRI data, which have served to assess initial inter-site differences. Using a set of traveling human subjects repeatedly scanned at each site, the FBIRN has determined that inter-site variability in the BOLD signals can exceed inter-subject variability, thus limiting the usefulness of combining raw imaging data across sites. Initial assessements indicate that intersite variability can be decreased through use of a variety of calibration methods. *Conclusions.* The collaborative efforts of multiple researchers have resulted in novel approaches to human subject data sharing, experimental design, fMRI data standardization, and clinical and imaging database design. Correction algorithms can decrease the inter-site effects to allow the combination of multi-site data to identify differences between patient groups and treatments. Support Contributed By: NCRR (NIH), 5 MOI RR 000827, www.nbirn.net.

SYMPTOM DIMENSIONS AND REGIONAL CEREBRAL BLOOD FLOW RESPONSES TO ATTRIBUTION OF VALENCE TO VISUAL STIMULI IN SCHIZOPHRENIA

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Background: Schizophrenia patients show reduced brain activation to affective stimuli. Furthermore, different symptoms have been differentially associated with measures of emotional processing. The present study systematically examined the association between psychotic, disorganized, and negative symptoms and brain activity elicited by the attribution of valence to pleasant, unpleasant, and neutral visual stimuli as well as a resting baseline condition. Methods: Regional cerebral blood flow was examined in 19 schizophrenia patients who had not received antipsychotic medication for at least 3 weeks prior to the study. Subjects were shown pleasant, unpleasant, and neutral pictures. Regional cerebral blood flow was measured in these 3 conditions as well as a fourth, resting baseline condition with the use of [^{15}O] water positron emission tomography. Subjects were asked to evaluate the emotional valence of the pictures. Correlations were computed between the 3 symptom dimensions and blood flow in each condition. Results: There were few significant correlations between Negative symptoms and blood flow across the four conditions. Disorganized symptoms (and to a lesser degree Psychotic symptoms) correlated with blood flow in the caudate, cerebellum, and hippocampus across all four conditions (rs > .60; volume > 1 mm^3). Disorganized symptoms were associated with greater activity in the ventral medial and ventral lateral prefrontal cortex in the pleasant condition. Conclusions: Disorganized symptoms correlated with greater blood flow in the caudate, cerebellum, and hippocampus in response to emotional pictures, neutral pictures, and during a resting baseline condition. This non-specific pattern of correlations may suggest that Disorganized symptoms are marked by elevated, tonic levels of activation in these brain regions. Future research should examine the factors that influence the increased activation in these areas as well as potential consequences of this enhanced, tonic activation.

FUNCTIONAL NEUROIMAGING OF WORKING MEMORY IN SCHIZOPHRENIA: TASK PERFORMANCE AS A MODERATING VARIABLE

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Functional neuroimaging studies of patients with schizophrenia have revealed abnormal activation of dorsolateral prefrontal cortex (DLPFC) during the performance of working memory (WM) tasks. However, findings of both increased and decreased activity have been reported. The present study employed meta-analysis to examine whether divergent findings arise as a function of differential task performance between patients and controls. Across all cognitive activation studies investigating working memory in schizophrenia, patient and control subjects did not differ in prefrontal activity during the performance of WM tasks. However, the magnitude of the group difference in task performance (both accuracy and reaction time) was a moderator of DLPFC activation, supporting the notion that task performance plays a role in findings of patient hyper- or hypofrontality. Specifically, studies employing patient samples whose performance was more closely matched to that of control subjects were more likely to demonstrate patient hyperfrontality, whereas studies of poorly performing patients were more likely to exhibit patient hypofrontality. These results are consistent with the hypothesis presented by D. Manoach (2002, 2003) and others (J. Callicott et al., 2003) that patients exhibit a left-shift in an inverted-U relationship between working memory load and DLPFC activation.

ABNORMAL STRIATAL ACTIVITY IN SCHIZOPHRENIA AND FIRST-DEGREE RELATIVES

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Schizophrenia has been associated with abnormal activity in the fronto-striatal system. Raemaekers et al. (*Gen Arch Psych*, 59, 2002), for instance, have shown that patients fail to recruit the striatum during the inhibition of saccadic eye-movements. We recently presented preliminary findings that patients also display decreased striatal acti-