schizophrenia (EOS), but less consistently in cannabis use disorders (CUD). Adolescents with CUD + EOS have not been studied.
Methods: DTI images were acquired with a 3T Siemens Trio Scanner from adolescents with EOS (n=35), CUD (n=16), EOS + CUD (n=13) and healthy controls (HC) (n=51) (ages 12 to 21 years). Group differences in fractional anisotropy (FA) covaried for age, sex and reading decoding scores were assessed using tract-based spatial statistics using a 2 (EOS versus no EOS) x 2 (CUD versus no CUD) design.
Results: A significant main effect of EOS was observed: (1) In the left fronto-occipital fasciculus and in the left inferior longitudinal fasciculus adolescents with "pure" and comorbid EOS had lower fractional anisotropy compared to HC. (2) In the right and left corticospinal tracts, adolescents with "pure" EOS had lower fractional anisotropy compared to CUD and HC. There were no significant differences identified between adolescents with CUD and HC.
Conclusions: These data suggest involvement of long-range association fiber tracts that connect visual and emotion-related structures in adolescents with EOS, but not in "pure" CUD. Abnormalities in these white matter tracts may underlie the impairments in the recognition of facial expression of emotion and may contribute to deficits in social cognition in EOS. The stability of these deficits will be assessed in a longitudinal study.
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855. Effect-Size Based Meta-Analysis of Functional Neuroimaging Data in Psychiatric Populations

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Background: Effect-sized based meta-analysis of functional neuroimaging data from psychiatric populations provides an alternative to voxel-based approaches that has unique advantages and drawbacks. The primary advantages are the ability to estimate the magnitude of an effect, which indexes the separability of brain activation between two populations, and the ability to identify study, task, and patient variables that moderate the magnitude of between-group effects. The primary drawback relative to voxel-based techniques is that it is not feasible to evaluate group differences throughout the whole brain.
Methods: Studies are identified through a literature search and effect sizes within one or more regions-of-interest are calculated. Moderator variables are coded for each study and analyzed within a multiple regression framework. Parametric or bootstrapping techniques are then used to obtain p-values and confidence intervals.
Results: Two datasets from the schizophrenia literature will be used to illustrate the value of this approach. First, reduced activation of dorsolateral prefrontal cortex by patients performing working memory tasks was found to be moderated by the extent of patients' deficits in task performance. Second, amygdala under-activation by patients in studies of emotion was found to depend on whether neutral stimuli were used as a baseline in between-group contrasts, suggesting that amygdala under-activation actually reflects increased amygdala responses to neutral stimuli rather than reduced amygdala responses to emotional stimuli.
Conclusions: These findings reflect important contributions to the understanding of between-group differences in brain activity that critically affect the interpretation of results from neuroimaging studies and suggest new directions for experimental work.
Keyword(s): Meta-analysis, Neuroimaging, Effect-size, Schizophrenia

856. Exploring Resting State Abnormalities in the Medial PFC in Schizophrenia and Bipolar Disorder

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Background: Bipolar disorder and schizophrenia overlap in symptoms and may share some underlying neural substrates. The medial prefrontal cortex (MPFC) may play a crucial role in the psychophysiology of both these disorders. In the present study, we examined the functional connectivity between MPFC and other brain regions in bipolar disorder and schizophrenia using resting-state functional magnetic resonance imaging (fmri).
Methods: Resting-state fmri data were collected from 14 patients with bipolar disorder, 16 patients with schizophrenia and 15 healthy control subjects. Functional connectivity maps from the MPFC were computed for each subject and compared across the three groups in a random-effects analysis.
Results: The three groups showed distinctive patterns of functional connectivity between MPFC and insula, and between MPFC and ventral lateral prefrontal cortex (VLPFC). The bipolar disorder group exhibited positive correlations between MPFC and insula, and between MPFC and VLPFC, whereas the control group exhibited anticorrelations between these regions. The schizophrenia group did not exhibit any resting-state correlation or anticorrelation between the MPFC and the VLPFC or insula.In contrast, neither patient group exhibited the significant anticorrelation between dorsal lateral prefrontal cortex (DLPFC) and MPFC that was exhibited by the control group.
Conclusions: The decoupling of DLPFC with MPFC in bipolar disorder and schizophrenia is consistent with the impaired executive functioning seen in these disorders. Functional connectivity between MPFC and insula / VLPFC distinguished bipolar disorder from schizophrenia, and may reflect differences in the affective disturbances typical of each illness.
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857. Daytime Sleepiness Affects Prefrontal Inhibition of Food Consumption

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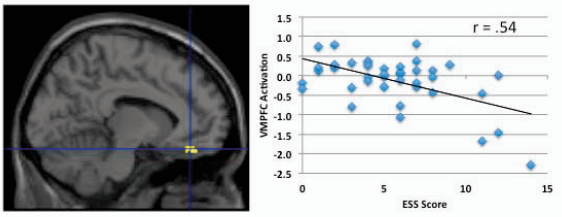
Background: The recent epidemic of obesity corresponds closely with the decline in the average number of hours of sleep obtained nightly. Insufficient sleep reduces the metabolic activity within the prefrontal cortex and is associated with declines in inhibitory control. We, therefore, hypothesized that daytime sleepiness would be related to reduced activation of the prefrontal cortex during perception of high-calorie food images and that this decline would be correlated with difficulties regulating food intake.
Methods: Forty healthy adults (22 men) aged 18 to 45 underwent functional magnetic resonance imaging (fMRI) while viewing photographs of high- and low-calorie foods. Subjects also completed the Epworth Sleepiness Scale and provided a rating to the query "how often do you eat more than you intend to." In SPM5, contrast images of reflecting the high- versus low-calorie conditions were correlated voxel-wise with sleepiness scores in a second-level regression model (p<.001, k=10).
Results: Daytime sleepiness correlated with reduced ventromedial prefrontal cortex activation for the sample as a whole (r=-.54, p<.001). Moreover, activation within this cluster was related to the tendency to overeat, but only for women (r=-.47, p=.048).
Conclusions: Greater daytime sleepiness was associated with decreased activation in the prefrontal cortex during visual perception of high calorie foods. Activation of this region was significantly correlated with overeating in women but not men. Sleepiness may affect brain systems related to excessive food consumption.



Prefrontal cortex deactivation with increasing levels of daytime sleepiness during viewing of high calorie > low calorie food images.

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