either stable or fluctuating properties of NSS. The latter speaks very much in favor of a state-trait dichotomy being present in NSS and thus challenges the view that NSS depict an endophenotype.

T9. CROSS-SECTIONAL ASSOCIATION OF MEMBRANE FATTY ACID COMPOSITION AND PSYCHOPATHOLOGY IN THE NEURAPRO-E STUDY

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Background: Converging evidence suggests that people at ultra-high risk (UHR) for psychosis have depleted levels of several fatty acids (FAs), and that changes in omega-3 (n-3) FA levels may indicate a higher risk for transition to psychosis. However, limited information is available on how FA deficiencies relate to psychopathology in individuals with UHR phenotypes. Here, we report the relationship between membrane FA levels and symptom severity in a study of individuals at UHR for psychosis.
Methods: Data from 280 of 304 (92%) of participants of the NEURAPRO study, a multi-centre randomized-controlled trial of omega-3 fatty acids versus placebo, were used for the present analysis. All participants were aged between 13 and 40 years and met criteria for UHR for psychosis. Blood samples were collected at study baseline and month 6 (end-of-intervention). Membrane fatty acids were analysed using mass spectrometry as percentage of total fatty acids in erythrocytes. Pearson correlation coefficients were calculated between baseline erythrocyte fatty acid levels and scores on the Scale for the Assessment of Negative Symptoms (SANS) and Brief Psychiatric Rating Scale (BPRS).
Results: Negative symptoms were positively correlated with one saturated FA (Tetracosanoic acid [24:0], R=0.272, p<0.0001), one n-3 FA (Eicosapentaenoic acid [20:5], R=0.142, p=0.017) and one n-9 FA (Nervonic acid [24:1], R=0.274, p<0.0001), and negatively correlated with one saturated FA (Palmitic acid [16:0], R=-0.224, p<0.0001), two n-6 FAs (Dihomo-y-linolenc acid [20:3], R=-0.201, p<0.001 and Linolelaidic acid [18:2], R=-0.333, p<0.0001), and one n-7 FA (Vaccenic acid [18:1], R=-0.172, p=0.004). BPRS scores were positively correlated with one saturated FA (Tetracosanoic acid [24:0], R=0.363, p<0.0001) and one n-9 fatty acid (Nervonic acid [24:1], R=-0.346, p<0.0001), and negatively correlated with two n-3 FAs (Dihomo-y-linolenc acid [20:3], R=-0.153, p=0.010 and Docosahexaenoic acid [22:6], R=-0.193, p<0.001), and two n-6 FAs (Arachidonic acid [20:4], R=-0.125, p=0.037 and Linoleic acid [18:2], R=-0.340, p<0.0001).
Discussion: Consistent with a previous study, negative symptoms and general psychopathology were associated with levels of several classes of FAs in the present study. These findings support the relevance of membrane fatty acids for the onset of psychotic symptoms and indicate that FAs should be further evaluated as biomarkers in people at UHR for psychosis.

T10. HERITABILITY OF AMYGDALA ACTIVITY AND ITS GENOME WIDE ASSOCIATION WITH THE SCHIZOPHRENIA RISK LOCUS OF MIR137

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Background: It is well known that heritability plays a prominent role in risk for schizophrenia, and that this brain disorder is crucially characterized by emotional symptoms. Less known is how heritability shapes brain activity during emotion processing and whether this brain phenotype is also associated with genetic variation increasing risk for schizophrenia. Here, we implemented a multi-step, data-driven approach in order to assess the relevance of the link between heritability, genetic variation, and schizophrenia for brain activity during emotion processing.
Methods: We investigated three samples of healthy individuals and one sample of schizophrenia (SCZ) patients: i) 28 healthy twin pairs (16 monozygotic and 12 dizygotic twin pairs); ii) 289 unrelated healthy participants (genome-wide association study - GWAS -discovery sample); iii) 90 unrelated healthy participants (replication sample); iv) 40 SCZ patients. During fMRI, participants approached or avoided threatening angry faces (explicit emotion processing). Intra-class correlations (ICC) between twin pairs and ACE models (A: additive genetics; C: common environment; E: unique environment) were used to identify regions of interest (ROIs) with heritable functional activity. Then, we extracted BOLD signal from these ROIs and conducted a GWAS on 565,137 single nucleotide polymorphisms (SNPs) (selected with the following criteria: minor allele frequency>0.15, Hardy–Weinberg equilibrium<0.001, linkage disequilibrium pruning r^2>0.9) using robust linear models of allelic dosage corrected for multiple comparisons (Gao et al. 2008 Genetic Epidemiology). Finally, we assessed the effect of surviving SNPs in the replication sample of healthy individuals as well as in the sample of SCZ patients.
Results: In healthy twins, we identified bilateral amygdala as the brain region with the highest heritability during explicit emotion processing as evaluated with our task (ICC=.79; h2=0.54; p<.001). The subsequent GWAS in healthy non-twins indicated that bilateral amygdala activity during the task was associated with a polymorphism close to miR-137 (rs1198575) (p=1.5×10^{-7}), with the C allele corresponding to lower activity than the t allele. A similar effect was found in the replication sample (p=.01) and in patients with SCZ (p=.03).
Discussion: Our data-driven approach revealed that amygdala activity as evaluated with our task is heritable. Furthermore, our results indicate that a polymorphism in miR-137 has genome wide association with amygdala response during emotion processing which is also replicated in two independent samples of healthy subjects and of patients with schizophrenia. Previous findings indicated that this polymorphism has genome-wide association with schizophrenia (Ripke et al. 2014). Other results reveal that miR-137 is a key regulatory neuronal factor linked to SCZ and involved in emotion processing (Cosgrove et al., 2017). Our findings are consistent with these previous findings and further highlight a crucial role for miR-137 in emotion processing and SCZ (Anticevic et al., 2012 Schizophr Bull).

T11. CEREBROSPINAL FLUID (CSF) MARKERS OF INFLAMMATION AND INFECTIONS IN SCHIZOPHRENIA AND AFFECTIVE DISORDERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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