We assessed childhood trauma (CT) in both, healthy subjects and schizophrenia patients. We hypothesised that the sub-group of patients with decreased membrane PUFA content will also exhibit a higher incidence of abnormalities in some other serum biomarkers in comparison with patients with normal membrane PUFA content.

**Methods:** A population of 33 chronic, medicated, and clinically stable patients with schizophrenia gave their informed consent for a study examining in particular their medical, psychiatric, and treatment history. The other measures assessed psychopathology (PANSS, CGI, Calgary scale), functioning and quality of life (GAF, SF36), and cognition (MOCA, MCST). Various biological biomarkers - in particular those related to inflammation, immunity, energy and hormone metabolism - were also examined. The total RBC membrane FA content was also measured using GC-FID (Gas Chromatography–Flame-Ionization Detection).

**Results:** Based on the standard values of the docosahexaenoic acid (DHA) (expressed as percentage of total fatty acids) in the RBC lipid membrane, a subgroup of 18 patients exhibited an abnormal decrease in DHA content (DHA-), while the remaining 15 individuals had DHA value within the normal range (DHA+). DHA- and DHA+ groups were compared using univariate analysis in terms of other clinical and biological associated characteristics.

We could also demonstrate a decrease in total membrane PUFAs in the DHA- group (p=0.004). Of interest, serum IL-6 was significantly (p=0.02) increased in the DHA- population. There was also a trend in favour of an increase in serum TNF-alpha in DHA- (mean value 30.5 vs 21 in DHA- and DHA+, respectively). In addition, the DHA- group had significantly (p=0.03) more hospitalisations since the beginning of the disorder. The duration of untreated psychosis was 4 years vs 1 year in the DHA- vs DHA+ groups, respectively. The same applied for the mean duration of hospitalisations (45 vs 34 days in DHA- vs DHA+). These values could not be explained by a longer duration in disease treatment in the 2 subpopulations.

**Discussion:** The presented data are in accordance with repeated findings showing decreased RBC membrane DHA and total PUFA content in a subgroup of individuals meeting criteria for schizophrenia. The splitting of the studied population into 2 groups numerically comparable as a function of their RBC membrane DHA content was thus justified. Interestingly, patients with lower membrane DHA content also exhibited abnormalities in other known biomarkers described in schizophrenia such as increased inflammation and disease severity. The presented data also show for the first time a biomarker associated with the duration of untreated psychosis. Altogether, these results, despite preliminary, are paving the way towards the identification of schizophrenia subtypes.

**M11. ALTERED TRANSCRANIAL MAGNETIC STIMULATION ELECTROENCEPHALOGRAPHIC MARKERS IN SCHIZOPHRENIA**

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**Background:** Cortical inhibition is a neurophysiological process in which cortical gamma-aminobutyric acid (GABA) inhibitory interneurons modulate the activity of pyramidal neurons in the cerebral cortex. Multiple lines of evidence, including neurophysiological and neuropathological, report that individuals with schizophrenia have deficits in cortical inhibition. Combining transcranial magnetic stimulation (TMS) with electroencephalography is a reliable approach to measure inhibitory processes in the cortex. The overall waveform produced by TMS-EEG may index cortical reactivity as a whole and previous investigations have linked the N45 component peak and the N100 component peak with GABA-A and GABA-B inhibitory neurotransmission, respectively. The aim of this study was to stimulate the DLPFC with TMS and examine resul- tant differences in the TMS-EEG waveform peaks between patients with schizophrenia and healthy subjects. We hypothesized that individuals with schizophrenia will have smaller TMS-evoked potentials, specifically the amplitudes of the N100 and N45 components, those previously related to GABA-ergic inhibition.

**Methods:** We applied TMS over the left DLPFC and recorded EEG activity in 48 healthy subjects (mean age: 33.8±5.3) and 46 patients with schizophrenia (mean age: 43.3±6.4). Monophasic TMS pulses were administered using a 7-cm figure-of-8 coil, and two Magstim 200 stimulators connected via a Bistim module. Single pulse TMS was administered over the left DLPFC with 100 total pulses, which were delivered every 5s. Resultant waveforms were extracted and analyzed through custom MATLAB scripts. The TMS-evoked potential waveform was examined through Global Mean Field Amplitude (GMFA) analysis of waveform peaks in each of the two groups. Normality of the distribution of each variable was assessed and a Mann Whitney U test was then performed for each variable of interest to assess differences between groups.

**Results:** Individuals in the schizophrenia group demonstrated smaller measures of cortical inhibition in the DLPFC. Specifically, smaller amplitudes of the N45 (U=724.00, p=0.004) and N100 peaks (U=831.00, p=0.039), although the overall AUC of the waveform did not differ between groups (U=969.00, p=0.307). Further analysis is underway to examine medication and symptom cluster effects.

**Discussion:** These results demonstrate novel findings of deficits in both GABA-A and GABA-B associated measures of cortical inhibition as indexed by single pulse TMS-EEG. This reinforces previous evidence from different research modalities demonstrating overall GABAergic inhibitory deficits in schizophrenia, and specifically provides new support which confirms recent findings of aberrant GABA-Aergic inhibitory neurotransmission in schizophrenia.

**M12. INCREASED SAFETY BEHAVIOR IN SUBJECTS WITH CHILDHOOD TRAUMA AND DELUSIONS**

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**Background:** Personal space is the safe area around us causing discomfort when violated by others. Previous research has shown that our need for personal space can be shaped by previous and current experiences. For instance, childhood maltreatment is associated with altered personal space in healthy controls. Additionally, space regulation is altered in schizophrenia (with personal space being increased in patients with paranoia). Whether childhood maltreatment and dimensions of delusions are associated with increased safety behaviour in patients with schizophrenia is unknown. We therefore aim to test the association of childhood trauma and delusions with interpersonal distance in schizophrenia patients and healthy controls.

**Methods:** We assessed childhood trauma (CT) in both, healthy subjects and schizophrenia patients (matched for age, gender and education) with the childhood trauma scale. This scale is a self-report screening tool for experiences of abuse & neglect during childhood. Additionally, we assessed delusions in schizophrenia patients, using the dimensions of delusional experience scale (DDE), which includes ‘conviction’, ‘extension’, ‘bizarreness’, ‘disorganization’, and ‘pressure’ dimensions. We compared the interpersonal distance (stop-distance test) and comfort ratings at predetermined distances (fixed-distance test) between subjects and schizophrenia patients, matched for age, gender and education.
with low/medium and high CT ratings. Likewise, interpersonal distance and comfort ratings of patients with and without delusions were compared.

**Results:** In our preliminary data (n = 27), subjects with high CT ratings showed an increased need for interpersonal space compared to subjects with low/medium CT. Additionally, the high CT group showed reduced comfort ratings at varying fixed distances. Likewise, patients with delusions had an increased interpersonal space and reduced comfort at fixed distances. Moreover, interpersonal space was associated with the severity of childhood trauma, and in particular with emotional neglect. Finally, interpersonal distance was associated with the degree to which the delusional belief involves various areas of patients' lives ('extension' dimension of the DDE).

**Discussion:** Our preliminary data suggests that childhood maltreatment and dimensions of delusions are associated with increased safety behaviour in patients with schizophrenia. These findings are in line with previous studies, which found associations of interpersonal distance and childhood maltreatment in healthy controls as well as paranoia in patients with schizophrenia. Our findings are of particular interest, as increased safety behaviour may impact social functioning (i.e. lead to more social withdrawal) in patients with schizophrenia.

**M13. INCREASED SAFETY SEEKING IN PATIENTS WITH SCHIZOPHRENIA AND PARANOID THREAT**

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**Background:** Schizophrenia is a disabling disorder with tremendous individual burden, reduced quality of life, leading to intense costs for society. Paranoia is a central feature of schizophrenia. In particular, paranoid experience is thought to be associated with aggressive behaviour, and poor social and functional outcome. Since paranoid threat is sometimes hard to detect in the clinical interview, a bedside test to identify patients suffering from paranoid experience was recently proposed: the interpersonal distance test.

**Methods:** For measuring interpersonal distance in patients with schizophrenia and age-, gender- and education-matched healthy controls, we performed a stop-distance paradigm. To accomplish the paradigm, we positioned experimenter and participant at opposite ends of the room with a distance of seven meters facing each other. The stop-distance paradigm contained four different conditions: two active conditions (i.e. participant is approaching experimenter) and two passive conditions (i.e. experimenter is approaching participant) both, with and without eye contact. Participants were instructed to stop or tell the experimenter to stop at a distance, at which they would start to feel less comfortable. Moreover, we assessed paranoid threat with the Bern Psychopathology Scale. We compared the interpersonal distance between patients with current experiences of paranoid threat, schizophrenic patients without paranoia and healthy controls.

**Results:** Patients with higher ratings in paranoid experience presented with higher interpersonal distance than patients without paranoid threat and matched healthy controls. This effect was most prominent in the passive conditions. Patients without paranoia did not differ from healthy controls in the interpersonal distance test.

**Discussion:** Interpersonal distance is a reliable indicator of current paranoid threat in patients with schizophrenia. In fact, interpersonal distance is not generally altered in schizophrenia. However, paranoid threat leads to impairments in interpersonal space regulation. This is of particular relevance as interpersonal distance might be predictive of social and functional outcome and aggressive behaviour in schizophrenia.

**M14. BDNF IS CORRELATE TO LOW EMOTION RECOGNITION IN UHR WOMEN: RESULTS FROM THE SSAPP POPULATIONAL UHR COHORT**

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**Background:** Schizophrenia is a disorder with prevalence rates of 1% in the general population. Science turned its efforts towards researching prodromal states, named “Ultra-high Risk” (UHR), in the hopes of impeding conversion to psychosis. Cognitive impairments are recognized among core features of schizophrenia and it is noted that they are already present at early stages of psychosis, such as ultra-high risk for psychosis (UHR). Schizophrenia in women has a more favorable outcome than in men with the disease in part mediated by cognitive performance. Neurotrophins, such as brain-derived neurotrophic factor (BDNF), play crucial roles in the expression of synaptic plasticity underpinning cognitive function, particularly expression of learning and memory. Previous studies showed conflicting results regarding neurotrophin levels in patients with psychosis. We hypothesized that UHR individuals would also show altered BDNF and cognitive performance levels.

**Methods:** A sample of over 2500 individuals aged between 18 and 30 years old, from the city of São Paulo, Brazil, was drawn and screened with the Prodromal Questionnaire (PQ). 236 subjects with high scores (18+ points in the positive PQ subscale) where selected for psychiatric assessment with the SIPS (Structured Interview for Psychosis-Risk Syndromes), and 98 individuals were classified as UHR. Whole blood sample was collected and BDNF levels were analyzed with ELISA kits (Thermo-Fisher). Cognitive performance was measured by the emotion recognition task available via the UPenn Computerized neuropsychological testing (). Data was available for 93 UHR individuals (95%) and for 62 (46%) controls. IBM SPSS Statistics v23 for Mac was used to analyze data.

**Results:** BDNF levels and performance on emotion recognition task did not differ between control and UHR individuals. Differences were also not found if sample was analyzed according to sex. However, in UHR women (63% of UHR sample), worse performance was significantly associated with a higher BDNF level (Pearson correlation coefficient=0.288, p=0.031).

**Discussion:** In our study, we found a correlation of worse emotion recognition task and higher BDNF levels in UHR women. This might be due a compensatory mechanism in which patients more severely impaired at baseline show higher BDNF levels. Estrogen might play a role in this difference as it induces BDNF expression. Several studies with psychotic patients show higher BDNF levels in affected individuals as well as one study with UHR individuals show higher BDNF levels within this group, but none showed differences between sexes. One study showed that treatment with selective estrogen receptor raloxifene increased activation in the right hippocampus and left inferior frontal gyrus areas, which are involved in facial recognition. Overall, literature suggests that women outperform men regarding overall cognitive function, including emotion recognition. Our findings might be related to a before homeostasis state has been reached in which baseline measures for emotion recognition in UHR women could be worse than in men but along time ameliorated via estrogen-induced BDNF expression.

**M15. MORPHOLOGY OF THE SUPERIOR TEMPORAL SULCUS IN PATIENTS WITH SCHIZOPHRENIA: A MARKER OF GENETIC OR ENVIRONMENTAL VULNERABILITY?**

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**Background:** Schizophrenia is a disabling disorder with tremendous individual burden, reduced quality of life, leading to intense costs for society. Paranoia is a central feature of schizophrenia. In particular, paranoid experience is thought to be associated with aggressive behaviour, and poor social and functional outcome. Since paranoid threat is sometimes hard to detect in the clinical interview, a bedside test to identify patients suffering from paranoid experience was recently proposed: the interpersonal distance test.

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