Results: Body weight, waist circumference and fasting insulin levels were similar between patients on olanzapine or risperidone. Plasma IGFBP-2 levels were also not different between the two groups (173 ± 19 vs 16 ± 16 ng/mL, respectively). As expected, IGFBP-2 concentrations were negatively correlated with BMI, waist circumference, insulin sensitivity, and plasma triglyceride levels in the entire cohort. However, the proportion of schizophrenic patients with a hypertriglyceridemia and large waist circumference ranged from 43% for olanzapine and 12% for risperidone users with IGFBP-2 levels lower than 220 ng/mL, compared to 8% and 0%, respectively for patients with plasma IGFBP-2 above this threshold (p = 0.0178).

Discussion: Our findings suggest that circulating levels of IGFBP-2 may underlie the inter-variability on metabolic risk in schizophrenic patients using SGAs. Longitudinal studies are required to evaluate whether IGFBP-2 levels can predict the development of a hypertriglyceridemic waist phenotype in this population.

F6. CEREBROSPINAL FLUID MARKERS OF INFLAMMATION AND INFECTIONS IN SCHIZOPHRENIA AND AFFECTIVE DISORDERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Abstract not included.

F7. EEG-INDEXED AUDITORY NOVELTY DETECTION DEFICITS IN EARLY-PHASE PSYCHOSIS

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Background: Research has suggested that deficits in auditory novelty detection, measured as mismatch negativity (MMN) and novelty P300, are present in individuals diagnosed with chronic schizophrenia as well as early-phase psychosis (EPP). However, reports of auditory change detection deficits in EPP are inconsistent and need replication. The goal of this study was to further investigate whether MMN and novelty P300 measures deficits exist in an EPP population relative to healthy controls.

Methods: A total of 17 participants aged 18 to 35 with EPP were recruited from the Nova Scotia Early Psychosis Program. Twenty-three healthy controls of equivalent age were recruited from the community.

Results: The EPP group exhibited reduced novelty MMN amplitudes (p = .05), as well as reduced novelty P300 amplitude (p < .01), relative to healthy controls. Additionally, preliminary analysis of the healthy controls revealed significant sex differences for novelty MMN at frontal and central electrode sites (p < .015; females > males) and novelty P300 at frontal sites (p < .05; females > males). There was an insufficient male/female split in our EPP sample to conduct similar analyses.

Discussion: Overall, our findings support previous reports of reduced MMN in EPP, albeit only to novel environmental sounds. We also corroborate previous findings of reduced novelty P300 in this population. Preliminary analysis of our healthy controls revealed sex differences for both MMN and novelty P300. Future work should whether these sex differences in electrocortical function extend to disorders of psychosis.

F8. ELECTRORETINOGRAPHIC CHANGES IN RESPONSE TO REWARD IN SCHIZOPHRENIA

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Background: Dysfunction in CNS dopaminergic activity is thought to be related to specific impairments in schizophrenia, such as deficits in reward processing. Electrophotography (ERG) is a technique used to record retinal signaling, including waveforms thought to depend strongly on dopamine circuitry within the retina and/or changes in brain dopaminergic activity.

Methods: In this ongoing study, we are using flash ERG to compare retinal responses of schizophrenia patients (SZ; n = 9) and healthy controls (HC; n = 15) at baseline, prior to (anticipatory pleasure), and after (consummatory pleasure), receiving a food reward. The primary variable of interest is light-adapted b-wave amplitude, reflecting the cone-driven bipolar cell response.

Results: Across all time points (i.e., baseline, anticipatory, consummatory), SZ patients demonstrated significantly attenuated b-wave amplitudes compared to the HC group (ds = 0.75 to 0.96). There were significant differences in baseline vs. anticipatory (p = .046), anticipatory vs. reward (p = .002), and baseline vs. reward (p < .001) b-wave amplitudes in the HC group, but not the SZ group. SZ patients reported significantly more negative affect (d = 1.56) than the HC group, but groups did not differ significantly in reported positive emotion (Positive and Negative Affect Schedule [PANAS]).

In the HC group, Temporal Experience of Pleasure Scale (TEPS) total scores correlated significantly with b-wave amplitudes at all three time points (ps = .015 to .025), but there were no significant relationships with TEPS scores and b-wave amplitudes in the SZ group.

Discussion: These data replicate prior findings of attenuated bipolar cell activity in schizophrenia, and links between bipolar cell activity and reward in non-psychiatric samples but suggest a lack of relationship between these phenomena in schizophrenia.

F9. REDUCED UNCERTAINTY-DRIVEN EXPLORATION AND ASSOCIATED NEURAL REWARD-RELATED SIGNALS RELATE TO MOTIVATIONAL DEFICIT SEVERITY

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Background: People with schizophrenia (PSZ) can suffer from a reduced tendency to engage in goal-directed behavior, with these impairments often being associated with motivational deficit severity (e.g. amotivation, avolition). Previous work suggests that reductions in goal-directed behavior can be driven by an inability to represent the value of rewards (1) or impairments in adaptive instrumental learning, potentially related to abnormal signaling of reward prediction errors (2). Whether a compromised ability to seek out new information under uncertainty may contribute to deficits in goal-directed behavior, however, has received little attention. Here, we investigated uncertainty-driven exploration and associated neural responses during an explore/exploit paradigm.

Methods: 24 healthy volunteers (HV) and 26 PSZ performed a three-option slot machine task in a 3T MRI environment (based on Daw et al. (3)). During a stable phase (150 trials), reward payout for every machine fluctuated (sd=10), and one machine consistently was the optimal choice (i.e. the