of this patient population. This information aims to assist decision-makers in creating tailored intervention plans to improve the physical health of patients with psychotic disorders, and integrate care across multiple specialties to reduce the growing burden of disease to the Canadian health system.

M83. AUTISTIC TRAITS AS LINKING PIN TO SOCIAL FUNCTIONING IN PSYCHOSIS: A NETWORK APPROACH
Tim Ziemans*,1, Adela-Maria Isvoranu2, Frederike Schirmbeck3, Hilde Geurts4, Lieuwe De Haan1, GROUP Investigators4
1University of Amsterdam; 2University of Amsterdam; 3Amsterdam University Medical Center, University of Amsterdam; 4GROUP

Background: Both psychotic and autistic traits are related to poor social outcome in individuals with psychotic disorders (PD). However, it is unknown how specific trait clusters relate to each other and which are pivotal to social functioning. The aim of the present study was to use a network approach to address this issue and to investigate whether relations are similar in individuals with a familial risk for psychosis (FR) or typical comparisons (TC).

Methods: The total sample consisted of 1413 individuals (504 PD, 572 FR, and 337 TC). Traits were assessed with the Autism Spectrum Quotient (AQ; 5 nodes) and the Community Assessment of Psychic Experiences (CAPE; 9 nodes). Social functioning was measured with the Social Functioning Scale (7 nodes).

Results: Overall our results show that autistic traits are more negatively and closely related to social functioning, particularly in the interpersonal environment, than psychotic traits. These relations are more intrinsically connected for the PD network, as more and stronger connections between nodes were observed than for the FR and TC networks. In addition, the latter two networks appeared strikingly similar with only few unique relations.

Discussion: Presence of autistic traits generally have a negative effect on social functioning, but in PD they may have a disproportional detrimental effect on psychopathology and levels of social functioning. These findings emphasize the need for increased clinical awareness of autistic comorbidity in psychotic patients to help enrich their daily social environments.

M84. METFORMIN FOR EARLY CO-MORBID PREDIABETES OR DIABETES IN SCHIZOPHRENIA SPECTRUM DISORDERS: A DOUBLE BLIND RANDOMIZED PILOT STUDY
Sri Mahavi Agarwal1, Roshni Panda2, Kenya Costa-Dookhan1, Nicole Mackenzie3, Quinn Casuccio-Treen2, Fernando Caravaggio3, Hashim Eyesha3, Anish Kirpalani1, Araba Chintoh2, Aristotle Voineskos1, Caroline Kramer1, Ariel Graff-Guerrero1, Gary Remington1, Margaret Hahn*1
1Centre for Addiction and Mental Health, University of Toronto; 2Centre for Addiction and Mental Health; 3Dalhousie University, Nova Scotia; 4University of Toronto; 5Mount Sinai Hospital, Toronto

Background: Patients with severe mental illness (SMI) loose 15–20 years of life due to cardiovascular disease. Much of the metabolic risk, including high rates of type 2 diabetes (T2D) is accrued early on in the illness, highlighting the need for early intervention strategies to target modifiable cardiovascular risk factors. Beyond cardiovascular (CV) risk, metabolic complications have wide-ranging detrimental effects on cognitive performance, medication compliance, and quality of life. There is however an astounding paucity of studies in SMI examining metabolic interventions outside of weight loss. Furthermore, patients with SMI are typically systematically excluded from trials investigating anti-diabetic agents resulting in lack of evidence to guide treatment.

Methods: Thirty participants with schizophrenia spectrum disorders and co-morbid prediabetes or type 2 diabetes were randomly assigned, in a double-blind fashion to 1500mg/day of metformin or placebo (2:1 ratio; n=21 metformin and n=9 placebo). Patients had to be overweight or obese, within 5 years of psychosis onset or under the age of 40, and receiving a stable dose of antipsychotics. The primary outcome measures were improvements in glycemia (HbA1c, fasting glucose), and insulin resistance index (Matsuda-derived from glucose tolerance tests and the Homeostatic Model Assessment of Insulin Resistance (HOMA-IR)). Secondary outcome measures included changes in weight, fat mass (MRI quantification of hepatic and visceral fat), improvements in cognition, and hippocampal volume (MRI). Data were analyzed using mixed-models methods, and intention to treat analysis.

Results: Twenty-two patients (n=14 metformin; n=8 placebo) completed the 4-month trial. The metformin group had a significant decrease over time in the HOMA-IR (p=0.043), and fasting blood glucose (p=0.007) vs. placebo. There were no differences between treatment groups in the Matsuda index or HbA1c or any secondary outcome measures. Interestingly, weight loss in both groups correlated significantly with decreases in subcutaneous, but not visceral adipose tissue measured by MRI. Controlling for baseline BMI and fasting blood glucose did not change any study findings. Exploratory correlations between change in metabolic indices and change in clinical and cognitive parameters did not reveal any significant associations.

Discussion: Independently of weight loss, metformin is effective in improving dysglycemia and insulin sensitivity in a young, severely mentally ill population at very high risk for early CV mortality. Our preliminary findings, however, fail to find an effect of metformin on weight reduction or tissue specific adiposity measures (which in themselves represent key CV risk factors). Notably, patients in this study had overt glucose dysregulation, a sample routinely excluded in studies examining weight loss interventions in SMI. Moreover, meta-analyses of metformin studies in SMI note greater efficacy early in the illness; possibly weight loss effects are blunted once patients develop prediabetes/T2D. It is also possible that this subgroup of patients may benefit from alternate or combined anti-diabetic/obesity therapies.

In conclusion, our findings support glucose lowering effects of metformin in SMI patients with early onset prediabetes/T2D, but raise the issue of treatment initiation before the development of overt glucose dysregulation to obtain maximum benefits on adiposity reduction. Given the extremely high rates of T2D in patients with SMI, future adequately powered trials are required to examine metabolic interventions in relation to CV risk factors, and also other related domains such as cognitive function in this highly under-researched population.
(free-running) sleep patterns. Sleep and circadian rhythm disturbances impact negatively on functioning and quality of life, and long term poor sleep is linked to weight gain, and other serious physical health conditions. Many of the factors supposed to cause or maintain poor sleep in this group are modifiable through behavioural and environmental alterations.

**Methods:** An expert consensus study (Delphi study) was conducted to examine and explore the views of relevant experts, regarding the appropriate contents and format of an occupational therapy intervention to improve sleep in schizophrenia spectrum disorders. Experts were recruited with expertise in: occupational therapy, sleep, insomnia, circadian rhythm, and schizophrenia spectrum disorders. Experts with clinical and/or research expertise were sought, as well as service users and carers. We conducted three rounds of online surveys, individual interviews, and a day of content presentation, comments and voting, and discussion groups with service users and carers. Quantitative data were analysed using descriptive statistics and presented graphically for comparisons. Qualitative data (survey comments and interviews) was analysed using thematic analysis. Analysis and data collection was iterative; with later rounds exploring views raised during earlier rounds. The results informed the development of the intervention now being tested in a single group feasibility study recruiting twenty participants. Using mixed methods, this study will evaluate acceptability, homework adherence and trial related procedures, informing adjustments prior to larger scale testing.

**Results:** The Delphi study recruited and retained participants well (n=82 of target=85, 66% uptake from professionals approached, 97% completion), suggesting a high level of interest in this topic. Participants reached consensus regarding relevant content within the initial assessment, increasing daytime natural light exposure (when possible), approaches to evening routine, and the approach to activity and occupation. Views varied regarding the relative importance of sleep restriction and building ‘sleep drive’, versus reducing arousal such as through relaxation, mindfulness, or cognitive approaches to anxiety. Often service users’ and carers’ views reflected those of professionals, however on some areas views between these groups differed, such as acceptable levels of intervention burden, and regarding wearables. Overall views highlighted the importance of a tailored intervention, with adjustable and selectable elements. The tailoring of recommendations will be achieved through a thorough assessment, including longitudinal use of light and movement sensing wearables, and a detailed initial interview. Many intervention components are optional based on needs, and the homework recommendations from ‘core’ intervention elements will vary depending upon individual needs, preferences, and baseline problems and situation.

**Discussion:** The diversity of sleep disturbance presentations within this group poses a unique challenge when developing a brief first-line intervention. Individually tailored recommendations can be derived through the combination of wearable technology and self-report, and a growing body of work informing models of sleep disturbance in this group.

**M86. CAN WEIGHT GAIN CAUSE METABOLIC SYNDROME A DECADE LATER IN PATIENTS WITH SCHIZOPHRENIA SPECTRUM DISORDER?**

Moradi Hawar*, Lars Helldin1, Anna-Karin Olsson1, Pontén Anna1
1NU Health Care Hospital

**Background:** Patients with schizophrenia spectrum disorder have a reduced life time expectancy with up to 20 years. Obesity and metabolic syndrome is highly prevalent and cardio vascular disease, CVD, remain the most common cause of the excess mortality. Despite studies showing the reduced life time expectancy and its causes the patients with schizophrenia spectrum disorder yet remain to benefit of the development of the healthcare. In this study we aim to focus on how the weight changes in different age groups and when do the cluster of conditions of metabolic syndrome start to occur.

**Methods:** In this naturalistic study we follow 71 patients, 47 men and 24 women diagnosed with schizophrenia spectrum disorder. We divided the patients into 5 different groups based on age. Group 1 aged 20–30 years, Group 2 aged 31–40 years, Group 3 aged 41–50 years, group 4 aged 51–60 years and Group 5 aged 61 years and elder. The longest time of observation was 18 years. Data on weight (kg) and disorders such as diabetes, hypertension and dyslipidemia were collected at baseline and then yearly thereafter. Data from baseline and the last yearly follow up were included in this study. Weight and the presence of the cluster of conditions that make up metabolic syndrome in the above-mentioned groups were analyzed.

**Results:** Patients in group 1 make the highest gain of weight with 0.9 kg per year and group 2 with the least gain of weight only 0.01 kg per year. Patients in group 3 have a weight loss of 0.2 kg per year. At endpoint 9 out 19 patients in group 3 and 11 out of 21 patients in group 4 were treated for one, two or three conditions of the metabolic syndrome. The diversity of sleep disturbance presentations within this group poses a unique challenge when developing a brief first-line intervention. Individually tailored recommendations can be derived through the combination of wearable technology and self-report, and a growing body of work informing models of sleep disturbance in this group.