health measures in an in-patient rehabilitation population in Scotland. Results are compared to national averages and clinical guidelines with the aims to a) benchmark physical health in this population and b) where possible improve physical health.
Methods. Physical health data including observations, blood tests, and investigations was collected ahead of detailed structured interviews and physical exams performed by a post-foundation doctor. These results were compared to recommendations for physical health monitoring from numerous national and government guidelines (SIGN, NICE, Scottish Government, Maudsley). Data were collected in 4 domains, 1) Indicators of physical health, 2) Engagement with physical health, 3) Concordance with guidelines and 4) Outcomes of reviews.
Results. Data were collected from 57 of all 62 in-patients. 34 reported being generally happy with their health vs 15 unhappy. 42% were obese (compared to 28% of the general population), 84% were smokers (vs 16% in the local population) 16% were hypertensive, 22% had raised HbA1c, 50% had raised cholesterol, 47% had QRISK >10%. 68% agreed to a full physical health review, 65% agreed to flu vaccination. Completed cancer screening uptake compared to the Scottish population was low; Cervical (30% vs 71%), Bowel (8% vs 59%), Breast (23% vs 72%), AAA (0% vs 84%). Patients were generally up to date in terms of recorded weight (100%), BP (98.2%), HR (98.2%) and lipids (89.4%), but not ECG's (61.4%) and Diabetes screening (59.6%). 17 referrals were made to medics/surgeons, 29 to MDT's, 24 medications started, 9 stopped and 27 changed, most commonly statins (12 patients), vitamin D (8 patients) and hypoglycemics (5 patients).
Conclusion. Cardiovascular disease indicators were notably raised, uptake of screening was very poor and there were areas where the service didn't meet national guidelines. The number of referrals and medication changes suggest an unmet need within such services. The findings, if generalisable across similar populations, suggest that more can be done to address ongoing poor physical health in populations with SMI and indeed patient readiness to comply with physical health screening. Screening for key physical health parameters needs to be augmented by working to engage patients and following up with management plans for abnormalities found.

Impaired Grid-Like Representations at Theta Frequency in Schizophrenia

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Aims. Schizophrenia is a chronic brain disorder characterised by distortion of thoughts and perception. Several studies have shown a key role of the hippocampal formation in the pathophysiology of schizophrenia. Patients show impaired theta coherence between medial temporal lobe and medial prefrontal cortex (mPFC), and impairment of knowledge structuring and inferential processes. Both the hippocampal formation and mPFC contain hexadirectional modulation of activity, indicative of grid cell populations. Grid cells play an important role in mapping the environment and are believed to represent the transition structure between task states. With other cell populations in the hippocampal formation, they play a fundamental role in inference, episodic memory, and spatial navigation. Here, we investigate whether schizophrenia is associated with disrupted grid firing patterns.
Methods. To test this hypothesis, we asked 18 participants with diagnoses of schizophrenia and 26 controls (matched for age, sex and IQ) to perform a spatial memory task in magnetoencephalography (MEG), while navigating a virtual reality environment. We first analysed theta (4–10 Hz) power during movement onset compared to stationary periods. We then source-localised the signal and looked for the hexadirectional modulation of theta band oscillatory activity by heading direction during movement onset. We also controlled for other symmetries in theta frequencies (four, five, and eight fold) and hexadirectional modulation in other frequencies. The same participants performed an inference task outside MEG, which we used for correlation analysis.
Results. The peak of theta power during movement onset was stronger in controls compared to patients ($p < 0.05$). In the control group, we found hexadirectional modulation of theta power by movement direction in the right entorhinal cortex ($p < 0.005$). This effect was absent in patients with a significant difference between groups ($p < 0.05$), suggesting that their entorhinal grid firing patterns may be disrupted. No other symmetry modulated theta power significantly in controls or patients, and hexadirectional modulation during movement onset was found only in theta frequencies in controls. Performance in the inference task was significantly impaired in schizophrenic patients, and spatial memory performance in both controls and patients was positively correlated with their performance in the inference task.
Conclusion. These results are consistent with the hypothesis that impairments in knowledge structuring and inference associated with schizophrenia may arise from disrupted grid firing patterns in entorhinal cortex. Although further work is needed to better understand the role of grid cells in health and disease, this work provides new insights into dysfunction of the hippocampal formation in schizophrenia.

Autonomic Dysregulation in Individuals With Psychiatric Disorders and Healthy Controls: Results From the CAP-MEM Observational Cohort

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Aims. Psychiatric disorders are associated with fatigue and with impairment to a range of cognitive domains, including executive functioning, learning, memory and complex attention. Similar impairments are seen in autonomic nervous system (ANS) dysfunction. The aetipathogenic significance of this for psychiatric disorders is unknown. The main aim of the cap-mem study was to characterize the relationships between ANS and cognitive function in a sample of none-clinical controls and people with mental health, neurodevelopmental and neurodegenerative disorders. The potentially confounding role of medication was included within this analysis.
Methods. The sample was recruited via secondary care mental health trusts. ANS function was assessed using self-report measures of ANS dysfunction symptoms (COMPASS-31) and fatigue (VAFS). Cognitive ability in various domains was measured using

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