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Abstracts for

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rats served as controls. Animals were tested in open field, cross maze, elevated plus maze, hole board, and in several motor function-related tests. The incidence of EPS was examined twice.

**Results:** APD treatment in general had a significant sedative-like effect on motor activity. Furthermore, drug-treated animals exhibit an anxious-like phenotype and a loss of fine motor movements. The first detected increase in EPS in APD-treated animals disappeared over time. Risperidone had a more stimulating effect on grooming behaviour whereas haloperidol had a stronger sedative-like effect.

**Conclusions:** We have shown that the effects of APDs are not limited to EPS. Domains such as anxiety and motor activity are affected as well. Differences in the behavioural profile of typical and atypical APDs are not restricted to EPS. This study demonstrates the importance of using a comprehensive behavioural phenotyping strategy.

**Keywords:** Biological Psychiatry, Neuropsychiatry

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THE INCIDENCE AND PREVALENCE OF SCHIZOPHRENIA VARIES WITH LATITUDE

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**Purpose:** The aim of this study was to examine the association between latitude and the incidence and prevalence of schizophrenia based on two recently-published systematic reviews.

**Methods:** Studies with original data related to the incidence and prevalence of schizophrenia (published 1965–2002) were identified by searching electronic databases, reviewing citations and writing to authors. Exact latitude values were used for cities, and geocentral values for other sites. The analyses were based on 353 incidence rates (from 68 studies) and 258 prevalence estimates (from 94 studies). Based on three equal latitude bands, we compared the frequency measures of schizophrenia for persons, males and females when adjusted for within-study variation.

**Results:** Prevalence estimates from sites in the high latitude band were significantly higher compared to lower bands (low and medium) for persons (p < 0.005), males (p < 0.02) and females (p < 0.003). Incidence rates were positively associated with absolute latitude for males (p < 0.04), but neither for females (p = 0.06) nor persons (p = 0.69).

**Conclusions:** The interpretation of ecological studies requires caution, however the results of this study suggest that risk factors that have latitude gradients warrant closer inspection in schizophrenia epidemiology.

**Keywords:** Epidemiology, Aetiology, Other

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REMEDIATION OF VISUAL SCANPATH DEFICITS IN SCHIZOPHRENIA

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**Purpose:** This study uses an EOM training task to determine whether proprioceptive retraining of eye movements delivered using visual scanpath technology improves emotion perception by assisting schizophrenia patients to develop more adaptive face viewing strategies. Subjects will be randomly assigned to one of three remediation groups (proprioception retraining group, face perception retraining group and control group [computerised information only]) for six, weekly 30 minute sessions and will complete follow-ups at 1 and 6 months post treatment in order to explore the potential sustainability of gains made as a consequence of remediation training. It is predicted that EOM proprioceptive retraining will produce greater improvements in affect recognition accuracy and visual scanpath strategies to face stimuli, and that these gains will be more stable over time, than either face perception retraining or information provision alone. The theoretical underpinnings of this unique line of enquiry will be described, as will the novel methodology and stimulus proposed for this research. Potential clinical significance and expected outcomes will also be discussed.

**Keywords:** Epidemiology, Aetiology, Other

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BRAIN GLUTATHIONE DEPLETION AS AN ANIMAL MODEL WITH RELEVANCE TO SCHIZOPHRENIA: 2-CYCLOHEXENE-1-ONE (CHX) DOSE-RESPONSE STUDIES

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Oxidative stress has recently been implicated in many psychiatric illnesses including schizophrenia. This oxidative stress, in particular depletion of glutathione (GSH), the primary endogenous antioxidant in the brain, may be related to altered dopaminergic transmission. In schizophrenia, recent studies have demonstrated 52% lower levels of GSH levels cerebrospinal fluid and imaging studies have confirmed prefrontal cortical deficits of this peptide. In order to investigate the behavioural consequences of GSH modulation, a suitable animal model is required. 2-cyclohexene-1-one (CHX) has been used previously to deplete glutathione in various animal models. The current study aimed to produce a dose-response curve investigating the biochemical response to CHX dosing in parallel with locomotor behaviour testing. The object of the study was to induce a similar degree of brain glutathione depletion in mice to that in schizophrenia, but still maintain a normal behavioural response.

Method: Doses ranging from 0 to 150 mg/kg of CHX were administered to a total of 81 male C57BL/6 mice (average weight 25.9 g). Total glutathione levels were assessed using an enzymatic-lowering recycling assay. Spontaneous locomotor activity was assessed using video-tracking with Ethovision (Noldus).

Results: GSH levels were highest in striatum, followed by liver and lowest in cortex samples. CHX treatment caused significant depletion of GSH levels in striatum at 90 (33% decrease), 120 (38% decrease) and 150 mg/kg (65% decrease). The effect of CHX was significant in frontal cortex at 60 mg/kg and higher doses (27–59% depletion). In contrast, there was no effect of CHX in the liver. In addition, there were no major effects on spontaneous locomotor activity.

Conclusion: CHX causes regionally specific GSH depletion in mouse brain without a peripheral effect or behavioural side-effects. This makes it a useful model for use in brain and behavioural studies, including the role of GSH in schizophrenia.

Keywords: Biological Psychiatry, Neuropsychiatry

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OESTROGEN PREVENTS BUSPIRONE-INDUCED DISRUPTIONS OF PREPULSE INHIBITION IN HEALTHY WOMEN

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The sex steroid hormone, estrogen, has been proposed to be protective against schizophrenia. This study examined the effects of estrogen treatment on modulation of prepulse inhibition (PPI) by the serotonin-1A (5-HT1A) receptor partial agonist, buspirone. PPI is a model of sensorimotor gating, which is deficient in schizophrenia and other mental illnesses. Eleven healthy women were tested following four acute treatment conditions: placebo, buspirone (Buspar; 5 mg), estradiol (Estrone; 2 mg), and combined buspirone and estradiol. Electromyogram activity was measured across three inter-stimulus intervals: 30, 60 and 120 msec. There was no significant effect of either drug treatment on startle amplitude or habituation. At the 120 msec inter-stimulus interval, buspirone caused a significant disruption of PPI, whereas there was no significant disruption of PPI with combined estrogen and buspirone treatment. In conclusion, estrogen treatment, administered in the appropriate experimental conditions, prevented PPI deficits induced by 5-HT1A receptor activation and may therefore also play a protective role in sensorimotor gating deficits in schizophrenia.

Keywords: Biological Psychiatry, Neuropsychiatry

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PATIENTS WITH SCHIZOPHRENIA/SCHIZOAFFECTIVE DISORDER: IS THERE IS A DIFFERENCE IN HOSPITALISATIONS AFTER TREATMENT WITH LONG-ACTING RISPERIDONE?

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Purpose: To compare hospitalisations in patients with schizophrenia/schizoaffective disorder three months before and after commencing treatment with long-acting risperidone.

Methods: Data on 1,728 German and Australian patients initiated on long-acting risperidone were extracted from the electronic-Schizophrenia Treatment Adherence Registry (e-STAR), a secure web-based, international observational study of patients with schizophrenia. Retrospective and prospective data collection includes patient demographics, disease characteristics and hospitalisations. Data were available for the first three months after treatment initiation.

Results: Mean age was 41.8 (SD 13.5) years, 58.6% were male, and mean duration of illness upon commencing treatment with long-acting risperidone was 10.4 (SD 9.5) years. The majority of patients had a diagnosis of schizophrenia (78.4%) or schizoaffective (18.1%) disorder. Three months before treatment with long-acting risperidone, the average number of days hospitalised was 13.3 (SD 23.5). This fell to an average of 8.5 (SD 21.2) days after treatment (p < 0.001). The total number of days hospitalised declined from 22,962 to 14,689 (p < 0.001), a decrease of 8,273 days over the 3 month period. The proportion of patients hospitalised also declined from 36.5% to 24.3% (p < 0.001). The re-hospitalisation rate was 10.4% (95%CI: 8.9; 11.8) during the 3 months and the time to first re-hospitalisation was 89.4 (SD 72.3) days. There were 124 patients (7.2%) who discontinued treatment with long-acting risperidone, but unless lost to follow-up (3.8%), will continue to be followed in the study.

Conclusion: Patients commencing treatment with long-acting risperidone seem less likely to be hospitalised during the first 3 months of