

## **The neural basis of attention disorder in schizophrenia**

### **Results:**

1. A deficit in executing antisaccades is commonly observed in schizophrenia. In addition, one cognitive feature of schizophrenia is a deficit in the ability to reorient attention away from salient events in the periphery. We did not find evidence for abnormal crossmodal attention-capture, using an auditory cue. Relative to control participants, schizophrenic participants generated slower responses when attention was triggered to the other side of the display.

2. Under standard conditions prosaccades are generated more quickly than antisaccades and with fewer errors. However with illusory line motion there was reversed effect, with more correctly directed antisaccades than prosaccades and prosaccade latencies were slower than antisaccade latencies. These results support the hypothesis that attentional reorientation is a major factor in the control of antisaccades, and a critical factor in the deficit of antisaccades in schizophrenia.

3. Research on behavioural inhibition in schizophrenia is heavily dependent on the antisaccade task. We have developed a novel task that will enable us to characterise inhibition more precisely. This novel test has the following features: (1) eye movements are naturalistic; (2) Spatial field of inhibition is readily mapped; (3) Temporal duration of inhibition easily measured. Most importantly, the failure of inhibitory control is indexed by faster saccade responses to the critical stimulus display. Thus, in contrast to the majority of available behavioural tasks, a functional impairment in the patients is indexed by 'better/faster' performance in this group. This is important because it ensures that any abnormality is not a non-specific effect of poor task compliance, task complexity or poor motivation.

### **Published work:**

Crawford, T.J., Hill, S., Higham, S. (2005). The inhibitory effect of a recent distracter. *Vision Research*, 45, 3365-3378.

Crawford, T. J., Kean, M., Klein, R. M., & Hamm, J. P. (2006). The effects of illusory line motion on incongruent saccades: Implications for saccadic eye movements and visual attention. *Experimental Brain Research*, 173, 498-506.

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