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# Neural correlates of behavioral inflexibility

Behavioral flexibility is the ability to adapt one's behavior to changes in the environment, and the failure of the flexible behaviors is an important characteristic of many psychiatric disorders, including obsessive compulsive disorder, autism and addiction. It has been established based upon inactivation and lesion studies that the medial prefrontal cortex (including its prelimbic (PrL) and infralimbic (IL) cortices), the orbitofrontal cortex (lateral orbital cortex (LO)), and dorsomedial striatum (DMS) are important for flexible behavior. However, little is known how activity between these brain areas is coordinated during flexible versus inflexible behavior. To investigate this, we simultaneously recorded the local field potential of the PrL, IL, LO and DMS before, during and after chronic quinpirole (QP) administration (0.5 mg/kg for 10 consecutive weekdays), which is known to induce inflexible patterns of behaviour in rats. Here some preliminary results showing differential modulation of those brain areas will be presented.