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Behavior Analysis in a Model of Pre-Clinical Parkinsonism

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Poster Presentation P12

BEHAVIOR ANALYSIS IN A MODEL OF PRE-CLINICAL PARKINSONISM

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This project was designed to evaluate a novel behavioral measurement of preclinical dopamine (DA) loss in a rat model of Parkinson's Disease (PD). Freely moving lesions, cannula implantation, rat handling, and behavior analyses were combined to understand the relationship between behavioral deficits and the degree of DA loss in the rat striatum.

A neurotoxin, 6-Hydroxydopamine (6-OHDA) was injected into the substantia nigra pars compacta (SNc) of the rat brain to induce PD-like symptoms. Utilizing the cylinder test, the rat's behavior was measured pre-surgery, post-surgery, and post-lesion to quantify behavioral deficits resulting from 6-OHDA. Prior to lesioning, cannula surgery was performed to differentiate between surgical and lesioning effects. Results confirmed a direct, positive correlation between the degree of neurotoxin injected and the behavioral deficit experienced.