



STNDBS-ICD \ \ SUBTHALAMIC NUCLEUS DEEP BRAIN STIMULATION FOR THE TREATMENT OF IMPULSE CONTROL DISORDERS

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SUCCESSFUL PROJECTS

Impulse Control Disorders (ICD), also termed “behavioural addictions” include drug addiction, pathological gambling, shopping, etc. Dopaminergic treatments in Parkinson’s disease (PD) are associated with ICD in 13 % of patients. Deep brain stimulation (DBS) of the subthalamic nucleus (STN) has been applied to these patients with success. In rats, STN lesions increase impulsive action in various tasks, but can also reduce impulsive choice and motivation for cocaine.

The aim of the present project is to better understand the effects of STN DBS on different forms of impulsivity that could relate to ICD in rats and in PD patients.

We will aim at understanding the contribution of STN in impulsive choice by testing STN DBS in the delay-discounting and the rat gambling tasks in intact or parkinsonian rats. We will then study how STN DBS can possibly decrease addiction to cocaine (model of escalation). In parallel, the effects of STN DBS will be studied in PD patients suffering or not from ICD and tested in similar tasks to those used in the rat and paralleled with electrophysiological recordings and PET imaging.

Taken together the various aims of the project should lead to a better understanding of ICD and eventually to future therapeutic tools for various forms of ICD.



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