Sensory Processing in the Parkinsonian Striatal Microcircuit.

https://neurodegenerationresearch.eu/survey/sensory-processing-in-the-parkinsonian-striatal-microcircuit/

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Sensory Processing in the Parkinsonian Striatal Microcircuit.

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Research Abstract

Parkinson's disease (PD) is primarily characterized as a movement disorder, resulting from the loss of dopaminergic input to striatum, the main input structure of the basal ganglia. PD patients and model animals often exhibit sensory impairments alongside with motor symptoms yet little is known about the network alterations underlying these impairments.

In this project we aim to elucidate the mechanisms underlying sensory deficits in PD. We use a PD animal model, the 6OHDA dopamine-depleted mouse, to study alterations in sensory integration performed by striatal neurons. We employ a combination of electrophysiological, optogenetic, and morphological methods to study how the striatal microcircuitry underlying sensory processing is altered following dopamine depletion. Neuronal classification is performed

by
a novel method for electro-optical detection of striatal neurons while whole-cell recording their activity and sensory responses in vivo. Our preliminary results show cell-type dependent changes in sensory integration, affecting striatal projection neurons of the D1 type. This project will increase
our understanding of Parkinson's disease, in particular with respect to the relatively unexplored aspect of sensory deficits, and may help develop new ways for early diagnosis of PD.

Further information available at:

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