

Significance of dopaminergic neural pathways for neuromotor development and social interactions

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Abstract: Dysfunction of midbrain dopaminergic pathways is involved in the etiology of autism spectrum disorders. Although the role of dopaminergic neurons in the regulation of motor functions is relatively well known, neuromotor development and in particular its relationship to the development of social functions have not been sufficiently investigated. The main of the presented project is to contribute to the elucidation of developmental changes in dopaminergic nerve pathways in a model of autism. Emphasis will be placed on the visualization of in-vitro primary dopamine nerve cell cultures as well as on the analysis of neuronal cell markers in brain projection regions in vivo in the early stages of development. The expected changes in the number and shape of neuronal cells will be related to the measured behavioral parameters of neuromotor development and social interactions. Monitoring neurodevelopmental milestones can provide data relevant to understanding the origins of autism.

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