Availability of Striatal Dopamine Transporter in Healthy Individuals With and Without a Family History of ADHD

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Abstract

Objective:
ADHD is the most prevalent neurodevelopmental disorder. It is highly heritable and multifactorial, but the definitive causes remain unknown. Abnormal dopamine transporter (DAT) availability has been reported, but the data are inconsistent. The aim of this study was to examine whether DAT availability differs between healthy parents with and without ADHD offspring.

Method:
Eleven healthy parents with ADHD offspring and 11 age- and sex-matched healthy controls without ADHD offspring were recruited. The availability of DAT was approximated using single-photon emission computed tomography, with [99mTc] TRODAT-1 as the ligand.

Results:
DAT availability in the basal ganglia, caudate nucleus, and putamen was significantly lower in the parents with ADHD offspring than in the healthy controls without ADHD offspring.

Conclusion:
The results suggest that ADHD could be heritable via abnormal DAT activities.