

# Impulsivity in Parkinson's disease

October 30 2017, by Allyson Mallya

---

Dopamine medications are effective in treating the motor symptoms of Parkinson's disease (PD), but dopamine agonists can trigger impulsive-compulsive behaviors (ICBs), such as compulsive gambling, eating or shopping, in a subset of patients. ICBs are thought to be caused by overstimulation of the mesocorticolimbic dopamine network, which regulates reward learning and executive function.

In a collaborative effort with Manus Donahue Ph.D., Daniel Claassen, M.D., and colleagues explored the neural underpinnings of ICBs in PD using a noninvasive imaging technique called arterial-spin-labeling (ASL)-MRI. ASL-MRI quantitatively measures [cerebral blood flow](#) (CBF), an indirect measure of brain metabolism and activity.

Comparing PD patients with and without ICBs, the researchers found that dopamine agonists increase CBF in brain regions of the mesocorticolimbic network only in patients with ICBs. They also found a link between dopamine agonist-induced changes in the mesocorticolimbic network and the expression of ICBs as well as their severity across all PD patients.

This study, published in *Movement Disorders*, highlights the potential of using ASL-MRI to predict ICB susceptibility in patients and improve clinical treatment plans.

**More information:** Daniel O. Claassen et al. Mesocorticolimbic hemodynamic response in Parkinson's disease patients with compulsive behaviors, *Movement Disorders* (2017). [DOI: 10.1002/mds.27047](https://doi.org/10.1002/mds.27047)

Provided by Vanderbilt University

Citation: Impulsivity in Parkinson's disease (2017, October 30) retrieved 26 April 2024 from <https://medicalxpress.com/news/2017-10-impulsivity-parkinson-disease.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.