

# Impulse control disorders in Parkinson disease and RBD

## A longitudinal study of severity

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### Study objective and summary result

This study investigated the prevalence of impulse control behaviors (ICBs) in patients with Parkinson disease (PD) and REM sleep behavior disorder (RBD), and it found that ICBs occur in approximately a fifth of patients with PD but are no more common in patients with RBD than controls.

### What is known and what this paper adds

ICBs are a relatively common side effect of dopamine agonists in patients with PD, with some variation in published risk factors. This investigation clarifies the prevalences of ICBs and the associated risk factors in patients with PD and patients with RBD. A validated rating scale is used to delineate the spectrum of ICB severity in PD and how this severity fluctuates over time.

### Participants and setting

The investigators analyzed data from 921 patients with PD who participated in the Oxford PD Centre Discovery cohort, which was recruited through multiple UK centers between September 2010 and September 2014. The investigators also analyzed data from 102 patients with RBD and 295 healthy controls (HCs) recruited in the same regions.

### Design, size, and duration

The participants underwent detailed baseline clinical assessments. The participants were screened for ICBs with the Questionnaire for Impulsive-Compulsive Disorders in PD–Short version at 18- and 36-month follow-up time-points. An in-depth interview using the Parkinson's Impulse Control Scale was conducted on all patients screening positive on their most recent assessment between September 2015 and June 2016, and then again a year later. The investigators used multiple imputation analyses to estimate ICB prevalences and regression models to identify risk factors for ICBs.

### Primary outcome measures

The primary outcomes were the estimated ICB prevalences, severity scores of individual ICBs, and risk factors for ICBs.

**Table** Risk factors for ICBs in the PD group

Factor	Adjusted odds ratio (95% confidence interval) for ICBs	p Value
Dopamine agonist usage	4.38 (1.70–11.3)	0.003
MDS-UPDRS part IV score, per unit	1.24 (1.05–1.48)	0.013
MDS-UPDRS apathy score $\geq 1$	2.71 (1.34–5.52)	0.006

Abbreviation: MDS-UPDRS = Movement Disorder Society–revised Unified PD Rating Scale.

### Main results and the role of chance

The investigators estimated that 19.1% (95% confidence interval, 10.1%–28.2%) of the patients with PD had ICBs. The estimated prevalences in the RBD and HC groups were 1% and 0.7%, respectively. Impulse control behaviors in the PD group were associated with dopamine agonist usage, motor complications, and apathy.

The severity of individual ICBs fluctuated over time despite minimal medication changes, suggesting a role for non-pharmacologic influences.

### Bias, confounding, and other reasons for caution

Only approximately 50% of the participants attended interviews. Multiple imputation analysis was used to estimate prevalence amongst non-responders and minimize selection bias.

### Generalizability to other populations

The reliance on data from the UK may limit the international generalizability of the results.

### Study funding/potential competing interests

This study was funded by Parkinson's UK, the UK National Institute for Health Research, and the Wellcome Trust. Professor Hu reports serving on advisory boards for Roche and Biogen. Go to [Neurology.org/N](http://Neurology.org/N) for full disclosures.

*A draft of the short-form article was written by M. Dalefield, a writer with Editage, a division of Cactus Communications. The authors of the full-length article and the journal editors edited and approved the final version.*

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