Supplementary Online Content


**eFigure 1.** Representative axial sections from a training subject showing 4 multispectral contrasts: A) T1-weighting. B) T2-weighted SPACE. C) Proton density weighting. D) T2-weighted FLAIR.

**eFigure 2.** SNc volumes as a function of side of symptom onset.

**eAppendix.** Supplementary results.

This supplementary material has been provided by the authors to give readers additional information about their work.
**eFigure 1.** Representative axial sections from a training subject showing 4 multispectral contrasts: A) T1-weighting. B) T2-weighted SPACE. C) Proton density weighting. D) T2-weighted FLAIR.
eFigure 2. SNc volumes as a function of side of symptom onset.
To explore the potential for laterality effects in the volumetric reductions in the SNC, we obtained side of symptom onset data for 22 of the original sample of PD 29 patients. Twice as many patients exhibited an initial onset of motor symptoms lateralized to the right side (n = 15) as compared to the left side (n = 7). A multivariate GLM revealed a significant main effect of side of onset for SNC volumes ($F = 4.7, P = .003$), with the effect being greater in the left ($P < .001$) than in the right hemisphere ($P = .07$) (eFigure 2). Post hoc tests showed that compared with controls, patients with right-sided onset had significantly reduced volumes of left SNC ($P < .001$) but not right SNC ($P = .08$). In contrast, patients with left-sided onset showed a more subtle effect, with marginally reduced volumes on the left ($P = .05$) and right ($P = .17$), likely due to a lack of power in the small sample size.

The fact that more than twice as many patients exhibited an initial onset of motor symptoms lateralized to the right side is consistent with the finding of greater volumetric reduction in the left SNC (the side contralateral to the side of motor symptom onset in the majority of our patients). This supplementary analysis yielded further results consistent with this notion: Patients with right-sided symptom onset showed greater loss of SNC volumes on the left (contralateral side), whereas patients with left-sided onset showed a trend toward the opposite pattern, greater volume loss on the right.