

Supplementary Table 1. Comparison of standardized uptake value ratios of the three groups in men

| Striatal subregion | DIP<br>(n = 7) | PD<br>(n = 19) | Normal<br>controls<br>(n = 24) | P value | Post hoc test    |
|--------------------|----------------|----------------|--------------------------------|---------|------------------|
| Caudate            | 3.84 (1.20)    | 3.84 (1.59)    | 4.58 (1.23)                    | 0.116   | NC = DIP = PD    |
| Anterior caudate   | 3.99 (1.37)    | 4.02 (1.83)    | 4.82 (1.40)                    | 0.127   | NC = DIP = PD    |
| Posterior caudate  | 2.80 (1.20)    | 2.94 (1.11)    | 3.47 (1.06)                    | 0.146   | NC = DIP = PD    |
| Putamen            | 6.69 (1.04)    | 4.72 (1.45)    | 6.92 (1.08)                    | < 0.001 | DIP = NC > PD    |
| Anterior putamen   | 6.94 (1.11)    | 4.86 (1.62)    | 7.14 (1.17)                    | < 0.001 | DIP = NC > PD    |
| Posterior putamen  | 6.29 (1.25)    | 3.89 (1.68)    | 6.60 (1.17)                    | < 0.001 | DIP = NC > PD    |
| Ventral putamen    | 5.34 (1.01)    | 4.00 (0.94)    | 5.59 (0.91)                    | < 0.001 | DIP = NC > PD    |
| Globus pallidus    | 4.85 (0.39)    | 3.76 (1.27)    | 4.76 (0.79)                    | 0.004   | NC > PD, NC= DIP |
| Thalamus           | 1.40 (0.16)    | 1.51 (0.14)    | 1.61 (0.13)                    | 0.002   | NC > DIP = PD    |
| Ventral striatum   | 5.34 (1.01)    | 4.00 (0.94)    | 5.59 (0.91)                    | < 0.001 | DIP = NC > PD    |

Values represent adjusted mean with standard deviation.

Analyses were controlled for age and performed using analysis of covariance with Bonferroni post-hoc testing.

Supplementary Table 2. Comparison of standardized uptake value ratios of the three groups in women

| Striatal subregion | DIP<br>(n = 28) | PD<br>(n = 16) | Normal<br>controls<br>(n = 22) | P value | Post hoc test     |
|--------------------|-----------------|----------------|--------------------------------|---------|-------------------|
| Caudate            | 4.91 (1.95)     | 4.00 (1.40)    | 5.14 (1.44)                    | 0.175   | NC = DIP = PD     |
| Anterior caudate   | 5.20 (2.21)     | 4.25 (1.60)    | 5.52 (1.67)                    | 0.206   | NC = DIP = PD     |
| Posterior caudate  | 3.72 (1.54)     | 2.91 (0.94)    | 4.28 (1.23)                    | 0.013   | NC > PD, NC = DIP |
| Putamen            | 7.65 (1.40)     | 4.48 (1.93)    | 7.10 (1.48)                    | < 0.001 | DIP = NC > PD     |
| Anterior putamen   | 7.93 (1.66)     | 4.58 (2.10)    | 7.51 (1.79)                    | < 0.001 | DIP = NC > PD     |
| Posterior putamen  | 7.41 (1.45)     | 3.74 (2.07)    | 6.95 (1.61)                    | < 0.001 | DIP = NC > PD     |
| Ventral putamen    | 6.31 (1.47)     | 4.05 (1.26)    | 5.68 (0.97)                    | < 0.001 | DIP = NC > PD     |
| Globus pallidus    | 4.87 (1.11)     | 3.38 (1.09)    | 5.28 (1.22)                    | < 0.001 | DIP = NC > PD     |
| Thalamus           | 1.44 (0.15)     | 1.40 (0.15)    | 1.63 (0.13)                    | < 0.001 | NC > DIP = PD     |
| Ventral striatum   | 7.09 (1.49)     | 5.23 (1.70)    | 6.35 (1.79)                    | 0.004   | DIP > PD          |

Values represent adjusted mean with standard deviation.

Analyses were controlled for age and performed using analysis of covariance with Bonferroni post-hoc testing.

Supplementary Table 3. Spearman's correlation between UPDRS scores and the standardized uptake value ratio (SUVR) values of striatum in Parkinson's disease

| Striatal subregion | UPDRS Part I       | UPDRS Part II      | UPDRS Part III      | Tremor subscore    | Rigidity subscore  | Bradykinesia subscore | UPDRS Total         |
|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|-----------------------|---------------------|
| Caudate            | -0.303<br>(0.077)  | -0.129<br>(0.461)  | 0.024<br>(0.889)    | 0.003<br>(0.987)   | -0.057<br>(0.749)  | -0.018<br>(0.916)     | -0.014<br>(0.553)   |
| Putamen            | -0.149<br>(0.393)  | -0.301<br>(0.079)  | -0.364<br>(0.031)*  | -0.299<br>(0.081)  | -0.358<br>(0.035)* | 0.309<br>(0.071)      | -0.385<br>(0.022)*  |
| Globus pallidus    | 0.027<br>(0.880)   | -0.324<br>(0.058)  | -0.485<br>(0.003)** | -0.405<br>(0.016)* | -0.426<br>(0.011)* | -0.385<br>(0.023)*    | -0.443<br>(0.008)** |
| Thalamus           | -0.310<br>(0.070)  | -0.200<br>(0.248)  | -0.006<br>(0.971)   | 0.150<br>(0.389)   | -0.056<br>(0.748)  | -0.097<br>(0.581)     | -0.171<br>(0.326)   |
| Ventral striatum   | -0.338<br>(0.047)* | -0.401<br>(0.017)* | -0.303<br>(0.077)   | -0.208<br>(0.230)  | -0.274<br>(0.112)  | -0.277<br>(0.107)     | -0.416<br>(0.013)   |

Data are r (p-value).

\*  $p < 0.05$ , \*\*  $p < 0.01$

Supplementary Table 4. Spearman's correlation between UPDRS scores and the standardized uptake value ratio (SUVR) values of striatum in drug-induced Parkinsonism

| Striatal subregion | UPDRS Part I      | UPDRS Part II     | UPDRS Part III    | Tremor subscore   | Rigidity subscore | Bradykinesia subscore | UPDRS Total       |
|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------------|-------------------|
| Caudate            | 0.151<br>(0.387)  | -0.073<br>(0.676) | -0.223<br>(0.198) | -0.122<br>(0.486) | 0.152<br>(0.383)  | -0.138<br>(0.429)     | -0.172<br>(0.324) |
| Putamen            | 0.237<br>(0.170)  | 0.071<br>(0.685)  | -0.157<br>(0.369) | -0.101<br>(0.565) | 0.165<br>(0.343)  | 0.063<br>(0.721)      | -0.090<br>(0.609) |
| Globus pallidus    | -0.059<br>(0.738) | 0.000<br>(0.999)  | 0.023<br>(0.895)  | -0.092<br>(0.599) | -0.155<br>(0.373) | 0.100<br>(0.566)      | -0.012<br>(0.945) |
| Thalamus           | 0.186<br>(0.284)  | -0.007<br>(0.969) | -0.064<br>(0.714) | -0.158<br>(0.364) | -0.048<br>(0.786) | -0.137<br>(0.432)     | -0.042<br>(0.813) |
| Ventral striatum   | 0.097<br>(0.578)  | -0.069<br>(0.693) | -0.243<br>(0.159) | -0.220<br>(0.204) | 0.090<br>(0.606)  | -0.084<br>(0.630)     | -0.202<br>(0.245) |

Data are r (p-value).