

Figure 1. Box plots of the distributions of striatal and thalamic GABA, Glx, mI and tCr in 35 Parkinson patients and 35 controls. Abbreviations: GABA: γ -aminobutyric acid, Glx: glutamate and glutamine, mI: myo-inositol, tCr: total creatine, PD: Parkinson's disease, p value obtained by Kruskal-Wallis test.

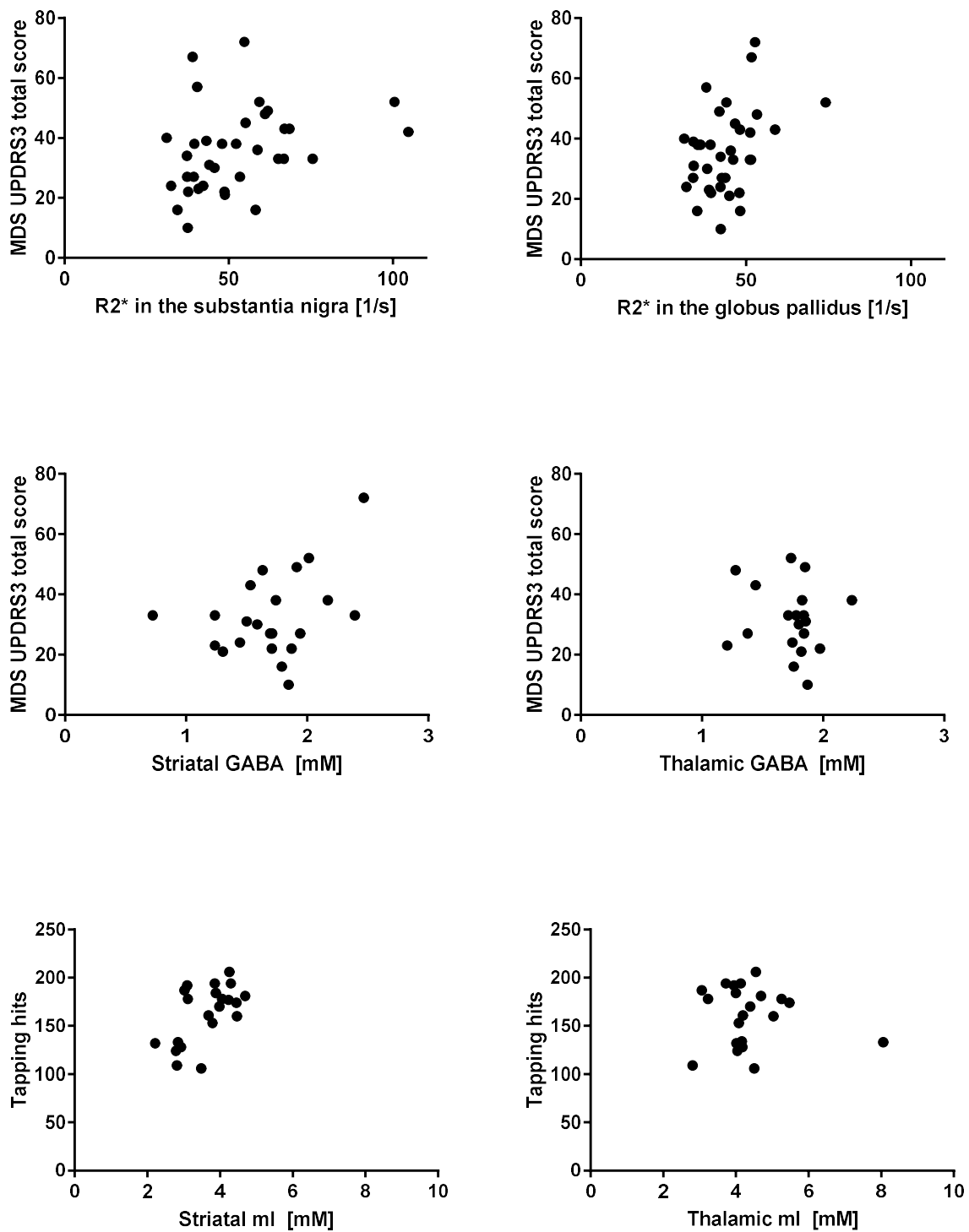


Figure S2. Correlations between brain iron ($R2^*$ in ROIs placed in SN and GP) and GABA (in striatal and thalamic VOIs) with MDS-UPDRS3 total scores and of ml with tapping hits in 35 Parkinson patients. Abbreviations: MDS-UPDRS3: Movement Disorder Society-Sponsored Revision of the Unified Parkinson Disease Rating Scale part III, R: relaxation rate, GABA: γ -aminobutyric acid, Glx: glutamate and glutamine, ml: myo-inositol, tCr: total creatine.

Table S1. Fine motor test results for both hands presented with medians for tapping hits and tremor amplitude in Parkinson patients and controls.

		N	Tapping hits		Tremor amplitude [mm]		MDS-UPDRS3 total score	MDS-UPDRS3 rigidity subscore
			Left	Right	Left	Right	PD	PD
Total		70	181	198	0.97	0.81	7.5	1.5
Group	Parkinson patients	35	164	178	1.17	0.92	34	7
	Controls	35	186	212	0.85	0.77	1	0
Age	≤ 58 years (median)	35	185	200	0.98	0.82	27	6
	> 58 years	35	179	187	0.95	0.81	38.5	7
Education	Low	25	166	186	1.10	0.87	39	7
	Medium	14	181	195	0.99	0.83	30.5	6
	High	31	194	203	0.82	0.81	35.5	4.5
PD subtype	Mixed	16	169	178	1.21	1.04	34.5	4
	Akinetic-rigid	19	164	182	1.12	0.89	34	7
Clinically more affected side (PD)	Left	12	166	184	1.49	0.91	29	5.5
	Right	14	171	176	0.81	0.83	31.5	5
	No preference	9	153	182	1.23	1.06	43	7

Abbreviations: PD, Parkinson's disease, MDS-UPDRS3: Movement Disorder Society-Sponsored Revision of the Unified Parkinson Disease Rating Scale part III.

Table S2. Spearman correlation coefficients with 95% confidence interval between motor functions in 35 Parkinson patients.

	Tapping hits			Tremor amplitude [mm]			MDS-UPDRS3 total score		
	rs	95% CI		rs	95% CI		rs	95% CI	
Tremor amplitude [mm]	-0.32	-0.59	0.02						
MDS-UPDRS3 total score	0.08	-0.26	0.40	0.02	-0.31	0.35			
MDS-UPDRS3 rigidity subscore	0.14	-0.20	0.45	-0.13	-0.44	0.21	0.78	0.61	0.89

Abbreviations: PD: Parkinson's disease, MDS-UPDRS3: Movement Disorder Society-Sponsored Revision of the Unified Parkinson Disease Rating Scale part III, rs: Spearman correlation coefficient, CI: confidence interval.